

6649

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Form 504
Rev. June 1941
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~Six Photographs~~
~~Plane Table~~
Hydrographic

Survey No. **H6649**
(Field) 1040

LOCALITY

State Washington

General locality Strait of Juan de Fuca

Locality Port Angeles to Green Point

1941⁰

CHIEF OF PARTY

F. B. T. Siems

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H6649

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. 1040

REGISTER NO. H-6649

State WASHINGTON

General locality STRAIT OF JUAN DE FUCA

Locality PORT ANGELES TO GREEN POINT

Scale 1:10,000 Date of survey Nov. - Dec., 1940

Vessel U.S.C. & G.S.S. EXPLORER

Chief of Party F.B.T. Siems

Surveyed by H. A. Paton

Protracted by R. H. Woodcock

Soundings penciled by R. H. Woodcock

Soundings in fathoms ~~xxx~~ Fathoms

Plane of reference Mean Lower Low Water

Subdivision of wire dragged areas by _____

Inked by G.R. Bryan

Verified by G.R. Bryan

Instructions dated Sept. 22, 193⁹ and Sept. 27, 1940, ~~is~~

Remarks: Smooth Sheet and Plotting by

Seattle Processing Office

F. B. T. Siems, Commanding
U. S. C. & G. S. EXPLORER

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DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. (1040^{Field}) - 6649

Port Angeles to Green Point

STRAIT OF JUAN DE FUCA

WASHINGTON

February 4, 1941

INSTRUCTIONS: The work on this sheet was done in accordance with Instructions to the Surveyor dated Sept. 22, 1939 and Supplemental Instructions to this ship dated Sept. 27, 1940 for Project H.T.- 241.

SCOPE: The work on this sheet extends from Port Angeles on the west to Green Point on the east, and from the shore out to Latitude $48^{\circ}09'$. It joins the hydrographic survey done in 1931 by K. T. Adams (H-5160)⁽¹⁹³¹⁾ in the vicinity of Port Angeles. A few lines were extended into the bay when running to and from work, to see if extensive changes had taken place but none were found.

See item #
of Review

On the east this sheet joins with Hydrographic Sheet No. 1140^{H6650 (1940)} (Field). Due to the lumpy bottom in this area the junction was irregular but not more than could be expected. On the north the work joins the ship Sheet No. 4040^{H6653 (1941-42)}, where the junction was satisfactory.

SURVEY METHODS: Launches of the EXPLORER equipped with Portable Depth Recorders No. 808 were used for the survey of this sheet. These instruments were manufactured by the Submarine

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Signal Corp. and had a "fish" outboard at a depth of two feet. The fathometer was checked by means of a bar test about three times each day and a revolution count was made at frequent intervals. Vertical casts were taken as a further check on the fathometer. Nearly all the soundings were taken in fathoms and feet. However the development of the dredged channel leading to the Rayonier Mill Wharf was done in feet and tenths.

Most of the signals were located by the usual topographic and triangulation methods. One signal, Zip, was built and located by the hydrographic party. It is found near the western end of the sheet on Ediz Hook. Its position was determined by means of a sextant angle and a short taped distance from Triangulation Station EDIZ.

While sounding, the positions were determined by means of three point fixes in the usual way. Two Cadet Officers of the U. S. Maritime Commission were assigned to the launch and were used as observers.

The launch was run at full speed, about seven knots, at all times unless conditions of sea prevented it. When developing shoals or running lines close to shore the speed was reduced for safety.

DISCREPANCIES: No discrepancies in the location of signals were found. No adjustments in position of soundings were necessary. On a few occasions the speed of the depth recorder was not exactly 111.8 r.p.m. and a small correction was necessary. Also the index setting slipped off a foot or two on a few days and an index correction was applied where the record indicated it was needed.

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On the work of this sheet the speed of the depth recorder was obtained by counting the revolutions for one minute as timed by a pocket watch or the hydrographic clock. It is believed that this method is not as accurate as if a stop watch had been used.

An error of about one revolution is possible by the first method. For this reason the work done by different launches did not check so very well on the goat sheet but it is believed that the reduced soundings on the smooth sheet will show but little discrepancies.

DANGERS: The principal danger in this area is the large number of floating logs and other debris from the mills in this locality.

Some of these logs have become water soaked and float in an upright position with only a foot or so of its length exposed. As time goes on they gradually sink until one end rests on the bottom. On a few occasions the depth recorder gave a single flash showing a sounding of one or two fathoms less than the surrounding depths. Later thorough development of the spot would sometimes fail to give this indication showing that the "dead-

head" had drifted away. One example of such a spot was found between Position No. 11 and 12 on "a" day, and another at Position No. 13 on "c" day. In all cases where "dead-heads" were located by the survey party, it is recommended that they not be shown on the smooth sheet as they were not permanent.

A few shoals were found within three-fourths of a mile of the shore, the principal ones being listed as follows:

Proof by sounding lines that dead head" drifted away considered doubtful. Sounding is on submerged "dead heads" retained.

"Deadheads" which were inked on smooth sheet even though considered temporary.

Least Depth	Latitude	Longitude	Position Number and Day
3 1/6	48°07.3 ^{67m}	123° 20.0 ^{121m}	41 f and 41 g ✓
5 ^{1/6} 2/6	48 07.7 ^{35m}	123 21.0	9 e and 37 d 47 d ✓
4 ⁴ 5/6	48 07.4 ^{78m}	123 21.1 ^{122m}	50 f ✓
* 5 ⁴ 2/6 *	48 07.4 ^{31m}	123 21.4 ^{173m}	62 f ✓
* 5 2/6 *	48 07.4 ^{44m}	123 22.6 ^{72m}	13 c ✓

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* These are probably "dead-heads". * Retained as permanent sdgs

CHANNELS: There was only one channel on this sheet. It is found near the western end of the sheet leading to the wharf at the Rayonier Mill. It had been dredged by private interests a few years ago to a depth of 29 feet. It has shoaled slightly since dredged and now has a least depth of 28 feet which is found about 100 meters off the end of the wharf. The four fathom curve is within 30 meters of the west side of the wharf. On the east side, the four fathom curve comes into the wharf about 150 meters south of the end of the wharf. Four fathoms was found just south of the buoy. The depth recorder was set to register feet and tenths for this work and the tide reducers were entered to the nearest half foot. The soundings should be shown on the smooth sheet in fathoms to agree with the rest of the work.

ANCHORAGES: The entire area covered by this sheet is suitable for anchoring.

COMPARISON WITH PREVIOUS SURVEYS: In general this survey agrees quite satisfactorily with the previous surveys. In Lat. 48° 07.⁵4', Long. 123° 22.0', the previous survey shows a

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depth of $7\frac{1}{2}$ fathoms where is now found $8\frac{3}{4}$ fathoms. However $7\frac{1}{2}$ fathoms was found about 200 meters northwest of this spot.

GEOGRAPHIC NAMES: All names now shown on our charts are in common use and there are no additional names to be recommended.

STATISTICS :

Statute miles of sounding lines	328.8
Total number of soundings	6047
Total number of positions	1489
Area in square statute miles	13.8

CURRENTS: Currents of $1\frac{1}{2}$ knots or less were found over the entire sheet. It was noted that they tend to parallel the depth curves.

TIDE RIPS: Moderate tide rips were encountered occasionally off the end of Ediz Hook.

MISCELLANEOUS: A striking feature of the bottom was developed off the end of Ediz Hook. A sharp and narrow draw extends in a southwesterly direction in toward shore until the 35 fathom curve is reached. The draw then broadens out and its identity is lost by the time the 25th fathom curve is reached.

The bottom breaks off very rapidly at the end of the Hook, a depth of 35 fathoms being obtained ~~at~~ 130 meters off shore.

Visibility was poor for almost the entire period. Smoke from the mills in Port Angeles drifted along the shore obscuring a large area.

The area to the ~~west~~ east of the old city dock was investigated at the beginning of "h" day to see if it was clear of dangers. No fixes were taken. No dangers were found.

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On a few days there was a heavy ground swell and the graph showed a decided saw-tooth effect. It is recommended that the depth be read to a mean curve midway between the extreme points on the curve.

A moderate growth of kelp was found close inshore in several places on the sheet in depths of four fathoms or less. During the winter months it was not sufficiently thick to impede the progress of the launch nor to make a record on the graph.

Respectfully submitted,



Hubert A. Paton,
Lieut. C. & G. S.

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TIDAL DATA

to accompany

SHEET NO. 1040^(Field) H-6649

All soundings on this sheet were reduced to Mean Lower Low Water from records obtained at the Port Angeles Tide Station. Staff reading for this datum plane was 1.8 feet. No time corrections were needed. Reducers were entered in feet for all the work except the development of the dredged channel in to the Rayonaer Mill. In this case the nearest half foot was used.

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APPROVAL SHEET

to accompany

SHEET 1040

The boat sheet and the accompanying records
have been inspected and are approved. The smooth
is yet to be plotted.



F. B. T. Siems,
Comdr. C. & G. S.
Commanding Officer.

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ADDITIONAL NOTES BY THE SEATTLE PROCESSING OFFICE

DISCREPANCIES AT CROSSINGS

Lat. & Long.	Line	Remarks
48° 08'.43 123° 23'.70	20m to 29m	This line seems to run consistently about 1 fathom too shallow in relation to the surrounding soundings. <i>Unimportant. In depths of 20 fms and greater.</i>
48° 07'.00 123° 18'.30	27f to 27f - 9 33f - 4 to 34f - 1	The deeper soundings of the first line fall inshore of the shallower soundings on the second line. <i>Difference between two lines not greater than about 2 ft.</i> This is one of several small discrepancies occurring along shore line. Probably due to variation in direction of line between positions.
48° 07'.8 123° 17'.9	18f to 21f	About one fathom deeper than the lines it crosses. <i>In depths of 10-14 fms</i>

R. H. Woodcock

R. H. Woodcock
Sr. Engr. Draftsman

Approved and Forwarded:

F. H. Hardy

F. H. Hardy
Captain, Coast & Geodetic Survey
Officer in Charge,
Seattle Processing Office.

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LIST OF SIGNALS

Used on H-6649

Hydro Name	Full Name	Source	Hydro Name	Full Name	Source
ACE		T-6816 (1940)	MAX		T-6816
AS		T-6817 (1940)	MORSE	MORSE, 1940	
BAR		T-6818 (1940)	MAG		T-6818
BOY		T-6817	MEW		T-6816
CAT		T-6816	OBO		T-6816
CLOCK	CLOCK, 1940		OH		T-6817
COR		T-6816	OUT		T-6817
DRAW		T-6817	POD		T-6818
EAST		T-6816	POLE		T-6816
FLAG		T-6816	RAT		T-6817
FOR	R.M. # 4, GREEN, 1940		SIG		T-6818
GAB		T-6816	STA		T-6816
GREEN	GREEN, 1940		SURGE	SURGE, 1940	
GRIP		T-6816	TINT		T-6817
HIT -		T-6816	TOW	WEATHER BUREAU TOWER, 1926	
HOOK -	NEW RDIZ HOOK LT. HSE., 1909		TWIN	TWIN, 1940	
IN		T-6817	WAS		T-6817
IT		T-6817	WRST		T-6816
JOY		T-6816	WOV		T-6816
LOG		T-6816	ZIP		Vol. #6, p. 11, H-6649
LOT		T-6817			
LYON	LYON, 1940				

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WASHINGTON
STRAIT OF JUAN DE FUCA

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TIDAL NOTE

Port Angeles, Washington

Portable Automatic Gage

Maintained from October 23, 1940 to
January 12, 1941.

Staff reading of MLLW 1.8 feet.

LAC
HNL

TIDE NOTE FOR HYDROGRAPHIC SHEET

October 14, 1942

~~Division of Hydrography and Topography:~~

✓ Division of Charts: Attention: Mr. H. R. Edmonston

Plane of reference approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 6649

Locality Port Angeles to Green Point, Strait of Juan de Fuca, Wash.

Chief of Party: F. B. T. Siems in 1940
Plane of reference is mean lower low water reading
1.9 ft. on tide staff at Port Angeles
24.9 ft. below B. M. 6

Height of mean high water above plane of reference is 6.5 feet.

Condition of records satisfactory except as noted below:

E. K. Green

Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. **H6649**

Name on Survey	Source of Name										No.
	A	B	C	D	E	F	G	H	K		
<u>Ediz Hook</u>											1
<u>Green Point</u>											2
<u>Morse Creek</u>											3
<u>Port Angeles</u>											4
<u>Siebert Creek</u>											5
<u>Strait of Juan de Fuca</u>											6
<u>Bagley Creek</u>											7
<u>Rayonier Mill Wharf</u>											8
											9
											10
											11
<u>Port Angeles (town)</u>											12
											13
											14
											15
											16
											17
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											19
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											21
											22
											23
											24
											25
											26
											27

Names underlined in red approved
by Lebeck on 10/27/42

Remarks

Decisions

1		481 232-36
2		"
3		"
4		"
5		"
6		U.S.G.B
7		"
8		"
9		
10		
11		
12	location of tide staff	"
13		
14		
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22		
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25		
26		
27		
M 234		

Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. **H6649**

Records accompanying survey:

Boat sheets ^{one}.; sounding vols. ⁽⁶⁾.; wire drag vols.;
 bomb vols.; graphic recorder rolls ⁽³⁾;
 special reports, etc. ^{one fathogram report}.....

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

Number of positions on sheet	.1489
Number of positions checked	..69.
Number of positions revised0.
Number of soundings recorded	.6047
Number of soundings revised (refers to depth only)3
Number of soundings erroneously spaced0
Number of signals erroneously plotted or transferred	..15.
Topographic details	Time ..10. hrs.
Junctions	Time ..20. hrs
Verification of soundings from graphic record	Time .190. hrs.

Verification by *George R. Bryan*..... Total time 220 hrs. Date 3-18-43.

Review by *R.H. Cantano*..... Time 49 hrs. Date 3/24/43

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT
~~PHOTOSTAT OF~~

No. H **H6649**
~~No. T~~

received **October 1, 1942**
 registered **October 9, 1942**
 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			
26			
30			
40			
62			
63			
82			
✓ 83	Pg 4.	<i>HT</i>	<i>M. Engelbreck. #82 J.B.P.</i>
88			
90			

RETURN TO

82	R. W. Knox
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DIVISION OF CHARTS

SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6649

Field No. 1040

Washington, Strait of Juan de Fuca,
Port Angeles to Green Point
Surveyed in November and December 1940; Scale 1:10,000
Instructions dated
September 22, 1939; September 27, 1940

Soundings:

Depth Recorder 808

Control:

Sextant Fixes on Shore Signals

Chief of Party - F. B. T. Siems
Surveyed by - H. A. Paton
Protracted by - R. H. Woodcock
Soundings plotted by - R. H. Woodcock
Verified and inked by - G. R. Bryan
Reviewed by - R. H. Carstens
Inspected by - H. R. Edmonston

1. Shoreline and Signals

The shoreline and signals originate with T-6816, T-6817 and T-6818 of 1940. The position of hydrographic signal ZIP is recorded in Vol. 6 of the sounding records.

2. Sounding Line Crossings

Satisfactory.

3. Depth Curves

Satisfactory except in the southwest corner of the sheet where the area has not been completely surveyed and in certain other places where curves cannot be drawn with confidence. (See item 9 for specific cases)

4. Junctions with Contemporary Surveys

The junctions with H-6653 (1940-42) on the north and H-6650 (1940) on the east will be considered in the review of those surveys. A satisfactory junction

was made with H-4586 (1926) and H-5159 (1931) on the northwest. The junction with H-5160 (1930) on the west was not considered satisfactory and has been omitted from the sheet. In the overlapping area present depths are 3-6 feet shoaler than those on the earlier survey. This difference is considered sufficiently great to warrant an extension of the survey to the westward to a point where a more satisfactory junction can be obtained.

5. Comparison with Prior Surveys

- a. H-325 (1852) 1:10,000
H-333 (1852) 1:214,240

The agreement with these early reconnaissance surveys is fairly good. The 31-fm. sounding (chart 6382) in Lat. $48^{\circ}09.0'$; Long. $123^{\circ}22.6'$ from H-333 falls in present depths of 34-35 fathoms and is probably out of position. It should be disregarded. The present survey should supersede these early surveys within the common area.

- b. H-1629 (1884) 1:80,000
H-2148 (1884) 1:10,000
T-2109 (1892) 1: 4,800 hydrography only
T-2110 (1892) 1: 4,800 " "

Depth agreement with these earlier surveys is very good. Differences in the deeper areas are seldom greater than 1 fathom and in shoaler areas differences are generally less than 3 feet. A number of rocks awash and one sounding from the hydrography on T-2110 (1892) have been transferred to the present survey. (See item 9c and d of the review) Except within the incompletely developed section in the vicinity of Lat. $48^{\circ}07.2'$; Long. $123^{\circ}23.5'$ the present survey is considered adequate to supersede the earlier surveys within the common area.

6. Comparison with Chart 6303 (latest print date 7- 1-42)
6382 " " " 12-23-42)

a. Hydrography

The hydrography originates largely with the previously discussed surveys which need no further

consideration. Several critical soundings originate with the present survey and are charted correctly. The bare rocks shown on present survey as rocks awash (chart 6303) in Lat. $48^{\circ}06.95'$; Long. $123^{\circ}23.4'$ and Lat. $48^{\circ}07.0'$; Long. $123^{\circ}22.85'$ originating with the hydrography on T-2110 were not noted on the present survey and probably do not bare at high tide. The rocks awash in Lat. $48^{\circ}06.9'$; Long. $123^{\circ}23.1'$ and Lat. $48^{\circ}06.9'$; Long. $123^{\circ}22.45'$ are not charted on chart 6382.

b. Controlling Depths

The channel charted as dredged to 29 feet on chart 6303 in Lat. $48^{\circ}07.3'$; Long. $123^{\circ}24.4'$ has shoaled to 26 feet alongside the dock and to 28' in the waterway leading to the dock.

c. Aids to Navigation

The aids to navigation are in agreement with their charted position and satisfactorily mark the features intended. Complete descriptive notes were not made for the buoy in Lat. $48^{\circ}07.3'$; Long. $123^{\circ}24.4'$.

7. Condition of Survey

Satisfactory.

8. Compliance with Instructions for the Project

Satisfactory, except that no bottom characteristics were taken; a satisfactory junction was not made with H-5160 (1931); in certain instances the spacing of lines was too great to satisfactorily delineate the bottom, and it was necessary to scale a large number of additional soundings from the fathograms to satisfactorily control the depth curves.

9. Additional Field Work Recommended

The following items of additional field work are recommended:

- a. An extension of the survey to the westward to a point where a more satisfactory junction can be made with H-5160 (1931). The present survey is 3-6 feet shoaler than the 1931 survey in an area charted on a 1:10,000 scale.

- b. The area to the east of the pier in the southwest corner of the survey is incompletely developed and requires additional hydrography.
- c. A number of rocks awash in the vicinity of Lat. $48^{\circ}07'$; Long. $123^{\circ}23'$ have been transferred to the present survey from T-2110 (1892). It would be desirable to have these verified at low tide.
- d. In Lat. $48^{\circ}07.1'$; Long. $123^{\circ}23.4'$ a depth of $1\text{-}3/4$ fathoms has been transferred from T-2110 (1892) to the present survey. This is an estimated depth on a rock and requires verification.
- e. It would be desirable to have split lines run in the following localities in order to delineate the depth curves with greater assurance:
 - (1) Lat. $48^{\circ}07.36'$; Long. $123^{\circ}17.32'$
 - (2) Lat. $48^{\circ}07.55'$; Long. $123^{\circ}18.75'$
 - (3) Lat. $48^{\circ}07.02'$; Long. $123^{\circ}18.75'$
 - (4) Lat. $48^{\circ}07.08'$; Long. $123^{\circ}21.80'$
 - (5) Lat. $48^{\circ}07.0'$; Long. $123^{\circ}22.80'$
- f. A proper determination of bottom characteristics covering the area of the survey is desirable.

10. Superseded Surveys

H- 325 (1852)	in part				
H- 333 (1852)	" "				
H-1629 (1884)	" "	except for bottom characteristics			
H-2148 (1884)	" "	" "	" "	" "	" "
T-2109 (1892)	" "	" "	" "	" "	" "
T-2110 (1892)	" "	" "	" "	" "	" "

Examined and approved:

Robert W. Neal
Chief, Surveys Branch

J. S. Borden
Chief, Division of Charts

Earl O. Heston
Chief, Section of Hydrography

G. H. Lude
Chief, Division of Coastal Surveys

Applied only the most critical depth to Ch. 6300 G.R. 12/7/42
" " " " " 6382 G.R. 12/14/42

Applied to drawing of Chart 6303 (after review) 5/19/43 - JFW

Applied to drawing of Chart 6382 (after review) 6/15/43. L.A.M.
" " " " " 6300 (after review) 6/19/43 L.A.M.

6382 Revised rocks per 1968 memo Start 7-12-72.