

# 7180

Diag'd. on diag. ch. No. 6002-1

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

## DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HO-05247 Office No. H-7180

### LOCALITY

State Oregon

General locality Columbia River

Locality Cathlamet Bay

1947

CHIEF OF PARTY

E.H. Bernstein

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DATE

# 0814 7180

DEC 1 1947

Form 537  
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

H7180

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-7180

Field No. HO-05247

State Oregon ✓

General locality Columbia River ✓

Locality Cathlamet Bay ✓

Scale 1:5,000 Date of survey May and June, 1947

Instructions dated 25 February 1947

Vessel HODGSON

Chief of party E. H. Bernstein

Surveyed by A. M. Legako

Soundings taken by fathometer, graphic recorder, ~~hand lead, wire~~

Fathograms scaled by Field Party

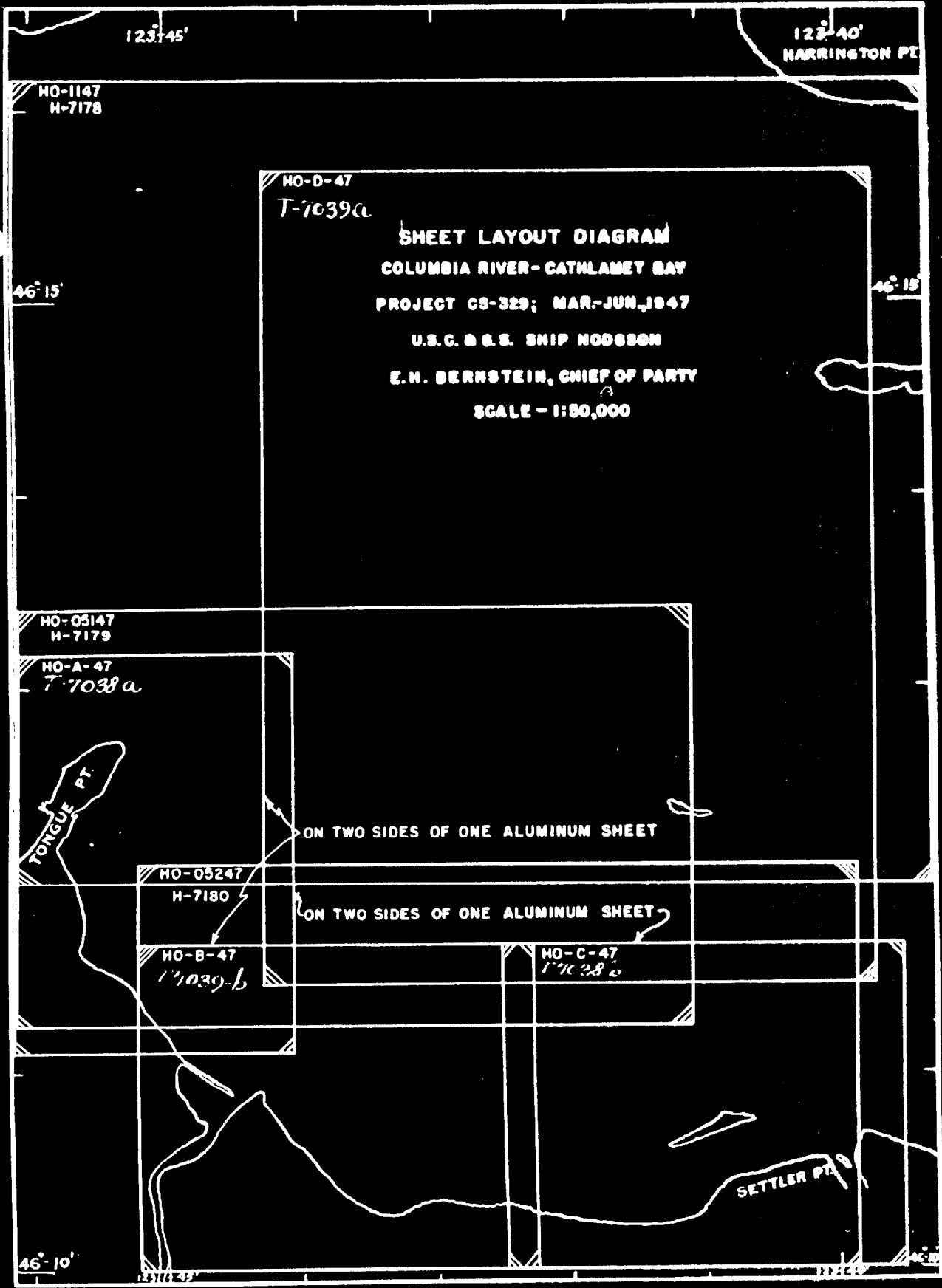
Fathograms checked by Elden Altizer and H. C. Parsons

Protracted by H. C. Parsons

Soundings penciled by H. C. Parsons

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW ~~Columbia River Datum~~

REMARKS: Smooth Sheet and Plotting by the  
Seattle Processing Office



123° 45'

123° 40'  
HARRINGTON PT.

HO-1147  
H-7178

HO-D-47

T-7039a

**SHEET LAYOUT DIAGRAM**

**COLUMBIA RIVER - CATLAMET BAY**

**PROJECT CS-329; MAR-JUN, 1947**

**U.S.C. & G.S. SHIP HODGSON**

**E.H. BERNSTEIN, CHIEF OF PARTY**

**SCALE - 1:50,000**

46° 15'

46° 15'

HO-05147  
H-7179

HO-A-47  
T-7038a

TONGUE PT.

ON TWO SIDES OF ONE ALUMINUM SHEET

HO-05247  
H-7180

ON TWO SIDES OF ONE ALUMINUM SHEET

HO-B-47  
T-7039-b

HO-C-47  
T-7038-b

46° 10'

SETTLER PT.

Descriptive Report to Accompany

Field Sheet Nos. -Registry Nos.

HO-1147	H-7178
HO-05147	H-7179
HO-05247	H-7180

Project CS-329

March 19 to June 26, 1947

Ship HODGSON

E. H. Bernstein,  
Commanding Officer.

PROJECT:

The hydrographic survey was made in accordance with instructions dated 25 February 1947, Project CS-329. It was at the request of the U. S. Maritime Commission and of the Public Works Officer, U. S. Naval Station, Tongue Point, Oregon.

SURVEY LIMITS AND DATES:

This survey constitutes a new basic hydrographic survey in Cathlamet Bay, Columbia River. The area of work lies between the shoreline of the bay, Tongue Point, main ship channel on the northwest, and limit of Chart 6151, on the east.

Field work was begun on 19 March 1947 and concluded on 26 June 1947.

Junction was made along the main ship channel with the survey of the U. S. Engineers of 30 August 1946 (CL-18-61) and of 6 September 1946 (CL-21-41); of 20 August 1945 (CL-18-57) in the area adjacent to and immediately east of Tongue Point. Junction and overlap was made along the eastern edges of Sheets HO-1147 (Reg. No. 7178), HO-05247 (Reg. No. H-7180) with survey H-5927. Junctions are satisfactory south of Lat. 13', and in the channel immediately south of Harrington Point. In the region between Lat. 13' and 14'5 overlap was extended for 0.8 statute miles and yet it was impossible to make completely agreeing junction with the previous survey because of extensive changes. With this large overlap it

<sup>Sp. 43142</sup>  
<sup>Sp. 43113 also Sp. 43119 (1946)</sup>  
<sup>Sp. 43103</sup>  
<sup>46°</sup>  
<sup>46°</sup>  
<sup>46°</sup>  
<sup>H-7178</sup>

should be satisfactory to merge the new with the old survey.

VESSEL AND EQUIPMENT:

All the hydrography on Sheet 05247 (Reg. No. H-7180) was done with a thirty six foot landing barge, Launch No. 141. Soundings were taken with a 808 depth recorder No. 625<sup>and handlead</sup>. This launch was also used for Sheet 05147 (Reg. No. H-7179). Launch No. 114 equipped with an 808 depth recorder No. 72 was used for Sheet 1147 (Reg. No. 7176), and a few soundings on Sheet 05147 (Reg. No. H-7179). ✓

The squat and settlement of Launch No. 141 had been previously, accurately determined and found to be negligible. The squat for Launch No. 114 has not yet been accurately determined. From observation it appears that the squat and settlement of this launch are also negligible for the sounding speed for which it was operated while sounding. ✓

The main specific purpose for making this survey was to determine silting or shoaling in the dredged areas adjacent to piers at Tongue Point, where about 400 naval vessels are moored and also in the channel running NW - SE'ly between triangulation stations BREAK and TRIPOD. This channel was dredged during the war to serve as a landing strip for airplanes of the previous Naval Air Station. The other purpose was to determine any possible shoaling near the (at present) eight groups of cargo ships a total of 200 that are anchored in the channel extending from the tip of Tongue Point towards McGregor Island, and also to discover and develop any other anchorage areas in these regions that could be used. Accordingly it was necessary to make extensive use of <sup>the</sup> handlead for taking soundings off the piers and the anchored Maritime Commission vessels because of the obstruction that the moored vessels offered to the use of the launch. H-7179

Corrections to the fathometer soundings were obtained from tables prepared from the data furnished by the three daily bar tests. These

tests extended to a depth of 50 feet and were made for the various scale settings of the fathometer. Very few depths greater than 50 feet were found and the direct bar checks are therefore sufficient to cover all corrections.

Because of the large scale of the hydrographic sheets special precautions were taken to snap angles accurately, to maintain uniform speed of the launch and to take angles as close as possible to the fathometer transceiver.

TIDE AND CURRENT STATIONS:

(See discussion under Tide Note attached).

One current station was occupied for 77 hours. This station was in Lat. 46° 12'54" Long. 123° 44'39" about 0.3 miles westward of the moorage area.

H-7179

SMOOTH SHEET:

Projections for smooth sheets were not made by the field party.

CONTROL STATIONS:

The area is covered by adjusted triangulation. Only two stations, BEAR (USE) 1905 and MILEPOST 95, 1934, were available for the three 1:5000 topographic sheets. Accordingly triangulation control had to be established. During the course of the triangulation all Nonfloating Aids to Navigation that fall in the area were determined by intersection. Only two hydrographic stations were located by a round of sextant angles, all other hydrographic stations being located by graphic control. All control stations are therefore accurately fixed. Lists of the scaled positions of graphic control stations needed for transfer between 1:5000 and 1:10000 form part of this report.

SHORELINE AND TOPOGRAPHY:

The marsh area was sketched by the hydrographic party in the vicinity of stations MAX, NIL and NOD, and also a small area midway between stations

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OWL and QUO. The shoreline was not resurveyed except in the small parts inked on the topographic sheets whereon also changes were redetermined. The layout of the piers and other works in the vicinity of the Naval Station were determined from Y. & D. Drawing No. 414-308 <sup>Sp. 43101</sup> and D. P. W. No. 46-32, and Y. & D. Drawing No. 414-371, <sup>Sp. 43101</sup> D. P. W. 46-131 furnished by the Public Works Officer, Thirteenth Naval District, Seattle, Washington. Reproductions of these two drawings are being sent with the boat sheets. As graphic control stations were established on the northeastern corner of seven of the eight piers the above two drawings can be accurately fitted in.

The old shorelines were left uninked on the boat sheets.

The low water line is thoroughly and completely defined by soundings.

#### SOUNDINGS:

Corrections to soundings are definite and accurate except for <sup>a</sup>dozen or so soundings over a 100 feet in the hole immediately north of Tongue Point for which it was necessary to project the bar tests on the fathom scale of the fathometer. The very strong current and swirl prohibited the making of comparative tests in the deeper water.

#### ADEQUACY OF SURVEY:

The survey is adequate and in greater detail than ever done before and should supersede all prior surveys for charting. No parts of the survey are incomplete or of questionable accuracy. Pains were taken to develop critical areas. Depth curves can be adequately drawn at the junctions.

(See Survey Limits above).

#### CROSSLINES:

Many crosslines were run on all sheets beside the numerous overlaps that were brought about by the diversity of directions of the channels. Completely satisfactory crossings and agreement with handlead soundings prevail.

All Floating Aids to Navigation were located by sextant fixes.

Many vertical handlead and bottom characteristics were made on all sheets.

COMPARISON WITH PRIOR SURVEYS:

Cathlamet Bay in general is an area subject to continuous change whereas the general channels and shoal areas maintain the general outline. Changes in detail are uniformly found. Man made changes are definite in the dredged areas adjacent to the piers at the Naval Station and in the water runway, landing strip, mentioned above and in the high water shoreline between stations DIX and GUY. Disturbance to the natural conditions through the dredging of the landing strip has resulted in the river attempting to close off the northern entrance to this water area. A tendency is noticeable that the river is gouging under the lines of moored cargo vessels with a tendency towards sedimentation to the downstream side of the vessels especially toward the southern or shoaler water end. It is not believed that this shoaling will result in a particularly dangerous condition for the moored vessels if they are kept not too close to the eighteen foot curve. Because of the demands of local interests a clear passage has been maintained northward of the moorage area. As it is intended to moor many additional vessels the value of this survey to the Maritime Commission was proven by the detailed development of other possible anchorage areas. In this connection, the development of the slough known as John Day Channel is of particular interest to the Naval and Maritime Commission authorities who at present maintain moorage of light draft vessels in Long. <sup>Lat. 46° 10.65'</sup> 4215 and Lat. <sup>?</sup> 4017 respectively.

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The old rock crib 90 meters S x E of the tip of Tongue Point no longer bares at low water, having been scattered by wave action.

H-7179



Considerable changes are apparent between Lat. <sup>45°</sup> 13' to 1415 and Long. <sup>123°</sup> 41' to 43', in the shifting of shoal areas and particularly in the old <sup>H-7178</sup> deeper channel in Lat. 1315.

The general agreement with U. S. Engineers <sup>Survey</sup> of 17 May 1946, CL-18- <sup>Sp. 43119</sup> <sup>H-7179</sup> 59, main moorage area, is good.

The general shifting downstream of the shoal area, in Lat. <sup>46°</sup> 15', is <sup>H-7178</sup> apparent. This is a tendency that is noticeable in all shoals in the area.

Sounding line, "a" day, up to "21a", was run on Harrington Point <sup>H-7178</sup> Range. This establishes the bearing of this range. *After plotting Smooth Sheet it is noted that this line deflects about 1° from the line of the range lights. EGS.*

DANGERS AND SHOALS:

The tip of a shoal bearing 2 feet at MLLW is 1000 meters E x S from Tongue Point Channel Front Range and is within 200 meters from the eastern edge of the main ship channel.

A new channel is cutting through in an E - W direction just north of the sand flat in Lat. 1315.

The group of pilings, 370 meters NE of Main Channel Beacon No. 4 which is submerged at high water and bares five feet at MLLW should be charted, as they constitute a danger.

Offlying rocks off Tongue Point and John Day Point were determined in position.

COAST PILOT INFORMATION:

The Maritime Commission has established two temporary fixed range markers, Station NUT and CAK for indicating the entering range on 98° True to their main moorage area. A sounding line was run along this range.

The old channel running in a E x S and W x N direction just south of Main Channel Beacon No. 4 is much used by local smaller craft.

During the period of the survey the prevailing weather encountered in the area was generally fair. Moderate SW'ly breezes developed per-

H-7178  
H-7179

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sistently in the late forenoon and continued until the late evening.  
This developed very bad tide rips to the northeastward of Tongue Point,  
in the fresh water currents, making very rough conditions for launch  
hydrography especially during periods of high tide at which this work had  
to be done because of the extensive shoal areas. In Cathlamet Bay to  
the east and southeast of Tongue Point smooth sea prevailed at all times.

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Currents were measured June 9 to June 12, 1947, in the channel 0.8  
miles E x S of the tip of Tongue Point and were found to attain a maximum  
of about 1.2 knots with a slack current period of about 1/2 hour with no  
reversal on the flood.

AIDS TO NAVIGATION:

The positions of fixed aids to navigation and floating aids to  
navigation are given on Forms 567 attached to this report.

The azimuth of the entering range established by the Maritime  
Commission for their moorage basin is 98° true. The azimuth of Harrington  
Point Range is 54° True. (This should be verified from the smooth sheet.)  
*Smooth Sheet Az. 54 48 between range lights*

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LANDMARKS FOR CHARTS:

A copy of Form 567 "Landmarks for Charts" is attached hereto. ✓  
C.L. 497 (1947)

GEOGRAPHIC NAMES:

A Geographic Name list is attached to this report. ✓

APPLICABLE DATA:

2-Marigrans, "Tide Records", Tongue Point.

1-Volume, "Leveling Record", Form 258, Tongue Point.

2-Volumes, "Leveling Record", Form 258, Settler Point.

- 1- Sketch Sheet Layout
- 1- ~~Sketch~~ <sup>Volume</sup> Current Observations Form 270
- 1- Cahier Triangulation Computations.
- 1- Progress Sketch Triangulation
- 6- Marigram Tide Records- Settler Point
- 4- Topographic Sheet Ho-A-47, HO-B-47, HO-C-1947, HO-D-47.
- 14 Volumes, Sounding Record, Form 275.
- 34 Fathograms (15-V) [(Gen. H-7178; 16ea H-7179; 9ea. H-7180)]

Respectfully Submitted,



E. H. Barnstein  
Lt. Comdr. U.S.C. & G.S.  
Chief Of Party.

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TOPOGRAPHIC STATIONS  
Sheet Ho-2-47

Station	Latitude	D.M. (m)	Longitude	D.P. (M)
ACE	46° 12'	1450 (403)	123° 45'	479 (812)
BAG	46° 12'	1330 (522.5)	123° 45'	508 (778)
BOX	46° 12'	1113 (739)	123° 45'	596 (690)
CAT	46° 12'	975 (879)	123° 45'	621 (665)
CON	46° 12'	849.5 (1003)	123° 45'	688 (598)
DUO	46° 12'	777 (1075)	123° 45'	741 (545)
DOC	46° 12'	677.5 (1175)	123° 45'	645 (641)
DIX	46° 12'	687.5 (1165)	123° 45'	567 (1219)
END	46° 12'	629.5 (1223)	123° 44'	1027 (259)
EAR	46° 12'	422 (1431)	123° 45'	571 (715)
FRY	46° 12'	347 (1506)	123° 45'	112 (1174)
FEN	46° 12'	348.5 (1504)	123° 44'	1019 (265)
FAR	46° 12'	261 (1592)	123° 45'	519 (767)
GAL	46° 12'	102 (1751)	123° 45'	468 (818)
FAT	46° 12'	14 (1839)	123° 44'	1266 ( 20)
HAT	46° 11'	1795 (57.5)	123° 45'	416 (870)
GAG	46° 11'	1823 ( 30)	123° 44'	1227 ( 59)

TOPOGRAPHIC POSITIONS

SHEET HO-D-47

NAME	LATITUDE LONGITUDE	METERS	NAME	LATITUDE LONGITUDE	METERS
LUG	46° 13' 123° 42'	782 (1070.5) 1022 (264.5)	LEZ	46° 11' 123° 43'	--- (1087) 497.5 (789)
PUP	46° 12' 123° 39'	372.5 (1180) --- (150)	LAD	46° 11' 123° 43'	--- (788) 628 (658.5)
PIT	46° 12' 123° 40'	703.5 (1119) 304 (982.5)	KED	46° 11' 123° 43'	--- (288.5) 916 (370.5)
OUT	46° 12' 123° 41'	540.5 (1312) 181.5 (1105)	JOB	46° 11' 123° 43'	--- (121.5) 1027.5 (259)
OAK	46° 12' 123° 41'	793.0 (1059.5) 803.5 (483.0)	MOP	46° 11' 123° 43'	--- (929) 1077.5 (209)
NUT	46° 12' 123° 42'	893.5 (959) 203.5 (1083)	KIM	46° 11' 123° 43'	--- (655.5) 1227 (59.5)
NEO	46° 12' 123° 42'	1056.5 (796) 694 (592.5)	JUG	46° 11' 123° 44'	--- (390) 81 (---)
MAL	46° 12' 123° 42'	1222 (630.5) 907 (379.5)	JOY	46° 11' 123° 44'	--- (257) 153.5 (---)
JIM	46° 12' 123° 43'	32.5 (1820) 1167.5 (119)			
IRK	46° 12' 123° 43'	144 (1708.5) 1237.5 (19)			
IVY	46° 12' 123° 43'	216 (1636.5) 1248.5 (38)			
JAY	46° 12' 123° 44'	164 (1688.5) 40.5 (---)			
ION	46° 12' 123° 44'	5 (1847.5) 303 (---)			
OWL	46° 11' 123° 40'	--- (133) 698 (588.5)			
QUO	46° 11' 123° 40'	--- (504) 53 (1233.5)			
NIG	46° 11' 123° 41'	--- (491) 1105 (181.5)			
MAW	46° 11' 123° 42'	--- (218) 660.5 (626)			









DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

**FLOATING AIDS OR LANDMARKS FOR CHARTS**

**TO BE CHARTED**

STRIKE OUT ONE

July 193801 Comma, Washington July 31 19 47

I recommend that the following objects which have ~~(been)~~ been inspected from seaward to determine their value as landmarks, be charted on ~~(deleted from)~~ the charts indicated.

The positions given have been checked after listing by R.M. Stone

R. H. Bergstein Chief of Party.

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION				METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED	
				LATITUDE		LONGITUDE								DATUM
				°	'	°	'							
		Tongue Point Naval Base Buoy No. 2 (967.3)		16-12	1297 (555)	123-16	375 (911)	1927	X			6151		
		Tongue Point Naval Base Buoy No. 1		16-12	1100 (752) 906	"	472 (814) 521 (765)	"	X			"		
		Tongue Point Naval Base Buoy No. 6 (967.5)		16-12	824.0 (946)	"	735 (550)	"	X			"		
		Miller Sands Channel Lighted Buoy No. 13 (985)		16-15	824.0 (960.0) (1400.0)	123-39	812	"	X			"		
		Miller Sands Channel Lighted Buoy No. 9 (983)		16-15	1452 (1088.6)	123-40	1234	"	X			"		
		Miller Sands Channel Lighted Buoy No. 1 (982)		16-15	789	123-39	51	"	X			"		
		Miller Sands Lighted Buoy No. 2 (981)		16-15	106 (1716)	123-40	947 (338)	"	X			"		
		Tongue Point Crossing Lighted Buoy No. 6 (956)		16-13	98 (1754)	123-45	874 (412)	"	X			"		
		Tongue Point Crossing Lighted Buoy No. 8 (957)		16-13	581 (1271)	123-44	987 (299)	"	X			"		
		Tongue Point Crossing Lighted Buoy No. 10 (958)		16-13	1142 (710) 283	123-43	9.8 (376)	"	X			"		
		John Day Channel Buoy No. 57		16-11	570 (570)	123-44	1099 (246)	"	X			"		
		John Day Channel Buoy No. 52		16-11	955 (898)	123-44	965 (322)	"	X			"		
		John Day Channel Buoy No. 5 (red) off John Day Pt.		16-10	1748 (105)	123-44	450 (857)	"	X			"		
		John Day Channel Buoy No. 87		16-10	1613 (240)	123-44	183 (1104)	"	X			"		

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

October 11, 1946

OBSERVATIONS FOR SQUAT

Launch No. 141

Willamette River, vicinity of Hawthorne Bridge, Portland, Oregon.

Weather: Calm

River: Calm

Launch fuel tanks approximately half full.

Observations taken with Wye Level set up on east shore of river--  
time 09:00 a.m.

Observations taken with launch idle, running slow speed (as used when sounding down stream), running about 2/3 speed (as used when sounding up stream).

	<u>Idle</u>	<u>Slow Speed</u>		<u>Squat</u>	<u>Fast Speed</u>		<u>Squat</u>		
		going	approach	mean	going	approach	mean		
		away			away				
		Level Rod Readings			in feet				
1st Obs.	1.27	1.30	1.32	1.31	0.04	1.35	1.38	1.36	0.09
2nd Obs.	4.87	4.92	4.88	4.90	0.03	5.03	5.04	5.04	0.17
3rd Obs.	4.67	4.70	4.72	4.71	0.04	4.82	4.79	4.80	0.13
				Mean	<u>0.04</u>			Mean	<u>0.13</u>

Approval Sheet

Hydrographic Survey

Cathlamet Bay, Columbia River

Sheet H-7178  
(HO-1147),

Sheet H-7179  
(HO-05147)

Sheet H-7180  
(HO-05247)

Project CS-329

The boat sheets, <sup>and</sup> sounding records have been examined and approved by me. The smooth sheet had not been plotted at the time of the writing of this report. The survey is complete and adequate.

*E. H. Bernstein*  
E. H. Bernstein,  
Lt. Comdr., USC&GS  
Chief of Party.

TIDE NOTE

to accompany

Hydrographic Survey of Cathlamet Bay, Ore.

Project CS - 329

7178

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The primary tide station maintained by the U. S. Coast and Geodetic Survey at Tongue Point, Oregon, Lat.  $46^{\circ} 12'15''$ , Long  $123^{\circ} 26'$ , was used for furnishing tide reducers. Tide values for the month of May were furnished by the Washington Office; values for the month of June were scaled by the field party. Value of 2.5 feet on the staff was taken at MLLW.

A portable automatic gage was installed at a tide station at Settler Point, Lat.  $46^{\circ} 10'15''$ , Long.  $123^{\circ} 40'15''$ . A height of 1.49 feet corresponded to the value of MLLW on the staff at the station.

Tide reducers to the nearest 0.2 of a foot were determined from both stations, values from each being used in the adjacent areas and from the simultaneous records, the values of the reducers in the intermediate zone were determined. Since the tidal differences and constants between Tongue Point and Settler Point and Harrington Point were correlated to those at Settler Point. The three hydrographic sheets were accordingly divided into Zones I, II, and III by red lines indicated on the boat sheets. It appears that large differences in time and height, between the two tide stations develop at the low water stages with no such marked differences noticeable at the high water stages. Therefore the most probable restrictive effect of the various sloughs was taken into account in laying out the zones. In the sounding volumes Roman numerals in blue indicate the zones in which the ensuing soundings lie.

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HO 05247

Cathlamet Bay  
Lower Columbia River

Smooth Sheet-

The projection is hand made on Paragon (German) paper. Topographic signals are from T-7038<sup>(1947)</sup> and T-7039<sup>(1947)</sup>. No shoreline or topographic features except those on the current graphic control sheets have been shown. ✓

R.R. Bridge - John Day River-

Soundings were made along the side of this bridge by handlead. ✓  
No details of the bridge are shown.

Crossings- Good. ✓

Other subjects pertinent have been covered by the report of the field party. ✓

Respectfully submitted,

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

H-7180

HO 02547

Cathlamet Bay

Lower Columbia River

List of Geographic Names 8/4

✓Cathlamet Bay

✓Oregon

✓Russian Island

✓Mott Island

✓John Day Channel

✓South Channel

✓Prairie Channel

✓Setter Pt.

# 7180

## STATISTICS

for

HYDROGRAPHIC SURVEY H-7180 (1947)

PROJECT CS-329

SHIP HODGSON

Vol.	Day Letter	Date	No. of Position	No. of H.L. Sdgs.	Stat. Miles of Sdgs.	Launch No.
1	a	5/14/47	104		11.7	141
1	b	5/15/47	119		13.2	141
1	c	5/19/47	68		7.2	141
1	d	5/20/47	76		6.7	141
2	e	5/21/47	108		9.9	141
2	f	5/22/47	95		12.6	141
2	g	6/11/47	128		21.5	141
2&3	h	6/12/47	110		17.3	141
3	k	6/19/47	85	16	9.0	141
3	l	6/20/47	91	7	15.9	141
3&4	m	6/23/47	116	2	12.7	141
4	n	6/24/47	65	1	7.7	141
TOTALS - - -			1,167	26	145.4	

Area in square statute miles - - - - - 3.8

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

839  
AIR MAIL

POST-OFFICE ADDRESS: Pacific Coast Tide Party  
114 Custom House  
TELEGRAPH ADDRESS: San Francisco (26), California  
EXPRESS ADDRESS:

27 September 1948

To: The Director  
U. S. Coast and Geodetic Survey  
Washington, D.C.

Subject: Hydrographic surveys in Cathlamet Bay, Oregon

Referring to your letter Ref. No. 839-bdh of  
7 September 1948, answers are made to your questions below:

(1) The TOWER no longer exists. The symbol should be deleted from the chart. H-7179

(2) The old pile structure, triangulation station Snag Island Beacon (1935) is still standing. It is greatly deteriorated, insecure and because weather-beaten is poorly visible. H-7178

(3) The answer is "No". Only those pilings shown on the topographic sheet or on sheet HO-05247 exist. H-7180  
(H-7180 (144))

(4) Practically all of the pilings on the west side of Mott Island had been removed. We were told by the Public Works Office, U. S. Naval Station, Tongue Point, that all would be removed. H-7179

(5) It does appear that the deeper basin immediately to the westward of station PIE should extend southward to join South channel. An examination of the fathogram along the line ending in "7e" and of the adjacent E-W lines should decide this question. I believe that this hydrographic feature is as delineated by the depth contours. I believe that conditions prevail similar to those noted in the fourth sentence in the Descriptive Report under "Comparisons with Previous Surveys", namely that the main channel is building a bar at the southern mouth of the channel extending to the northward. An analogous condition exists at the southern end of the N-S channel immediately to the westward of station SAM. H-7180

(6) Yes. It is used much by commercial fishing boats up to the highway bridge and somewhat beyond. The improved depths in the channels in Cathlamet Bay induce increased use of John Day River. (The Instructions of 25 February 1947 do not call for surveys of H-7180



27 September 1948

navigable channels adjacent to the Maritime Commission anchorage area.)

It is respectfully requested that if other questions have come up to let me know very soon as it is not feasible for me to carry the file records of these surveys along on this itinerant tide party.



E. H. Bernstein  
Comdr. USCGS

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. **W7180**

Records accompanying survey:

Boat sheets ..1...; sounding vols. ..4...; wire drag vols. <sup>0</sup>.....;  
bomb vols. .0...; graphic recorder rolls .9...;  
special reports, etc. ....  
.....

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

Number of positions on sheet	.....	1167
Number of positions checked	.....	67
Number of positions revised	.....	10
Number of soundings revised (refers to depth only)	.....	84
Number of soundings erroneously spaced	.....	68
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	.....2
Junctions	Time	.....16
Verification of soundings from graphic record	Time	.....13

Verification by L. LOBBERS JR......Total time 121... Date 7/9/48

Reviewed by G. F. Jordan..... Time 37... Date 9/2/48

GEOGRAPHIC NAMES

Survey No.

**H7180**

Name on Survey

	A	B	C	D	E	F	G	H	K	
	On Chart No.	On previous survey No.	On U. S. Quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
<u>Oregon</u>									USGB	1
<u>Columbia River</u>									"	2
<u>Cathlamet Bay</u>										3
<u>Russian Island</u>										4
<u>Prairie Channel</u>										5
<u>Settler Point</u>									(not Settlers: location one tide staff) USGB	6
<u>South Channel</u>										7
<u>John Day Bridge</u>										8
<u>John Day Channel</u>										9
<u>Mott Island</u>										10
										11
										12
										13
										14
										15
<u>Tongue Point</u>									(location one tide staff)	16
										17
<u>John Day Pt</u>										18
<u>North Channel</u>										19
<u>Svensen Island</u>									USGB	20
<u>Ma Gregor Island</u>										21
										22
										23
										24
										25
										26
										27

Names underlined in red are approved. 2/19/48 L. Heck

4 additional names approved 9/8/48 L. H.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7180

FIELD NO. HO-05247

Oregon, Columbia River, Cathlamet Bay  
Surveyed in May to June, 1947      Scale 1:5,000  
Project No. CS-329

Soundings:

808 Fathometer  
Handlead

Control:

Visual fixes on shore signals

Chief of Party - E. H. Bernstein  
Surveyed by - A. M. Legako  
Protracted by - H. C. Parsons  
Soundings plotted by - H. C. Parsons  
Verified and inked by - L. Lubbers, Jr.  
Reviewed by - G. F. Jordan, September 30, 1948  
Inspected by - R. H. Carstens

1. Shoreline and Signals

A small amount of shoreline inked in black is from contemporary plane table surveys T-7038a, T-7038b and T-7039b of 1947. The larger portion of shoreline inked in brown is from T-6387a and T-6387b of 1935. Three marsh islets shown in dashed-red ink are from the boat sheet.

The control signals are from triangulation of 1905 to 1947 and from the 1947 survey mentioned above. The position of hydrographic signal PIC is from a sextant fix recorded in the sounding volumes of the present survey.

2. Bottom Configuration and Depth Curves

The bottom in John Day Channel and South Channel, is fairly smooth, but irregularities caused by scouring and silting occur at bends in the channel. In the vicinity of Prairie Channel East Light the bottom is quite irregular.

The depth curves could be adequately drawn except in the vicinity of lat.  $46^{\circ} 10.55'$ , long.  $123^{\circ} 43.35'$ , where the entrance to the northerly channel is inadequately developed (6-ft. curve).

3. Sounding Line Crossings

The depths at crossings are in very good agreement.

4. Adjoining Surveys

Adequate junctions were effected with H-7178 (1947) and H-7179 (1947) on the north. An adequate butt junction has been made with H-5928 (1935) on the east. Soundings of that survey in the small junctional area in lat.  $46^{\circ} 11'$ , long.  $123^{\circ} 39.75'$ , have been omitted because of changes in depths. These changes are discussed in the following paragraph 5a.

5. Comparison with Recent Surveys

a. H-5928 (1935) on scale 1:10,000

In South Channel and John Day Channel depths have remained practically unchanged except in South Channel between long.  $123^{\circ} 41.8'$  and long.  $123^{\circ} 42.3'$ , where a 5-ft. shoal has developed in prior 6-to 8-ft. depths since the 1935 survey.

In Prairie Channel and North Channel considerable changes in depths have occurred. The natural channel north of Svenson Island has extended northwestward and shoaling north of this channel has brought the 6-ft. and 12-ft. curves 75 meters southward. Irregularities in the bottom in the vicinity of Prairie Channel East Light have changed in position and depth, as for example, present 11-to 17-ft. depths east of the light are 4 to 5 ft. deeper than depths on H-5928. Present 7-to 10-ft. depths southeast of the Light are 4 to 5 ft. shoaler than prior depths.

b. T-6387a and b (1935) on scales 1:10,000

This survey shows a large amount of piling in South Channel between Settler Point and long.  $123^{\circ} 42.75'$ , which should be disregarded. In par. 3 of his letter of 27 September 1948 (in the Descriptive Report), Comdr. Bernstein states that only those pilings shown on the present survey exist.

The surveys above are completely superseded by the present survey in the common area.

6. Comparison with Chart 6151 (Print date of May 10, 1948)  
Chart 6152 (Print date of May 5, 1947)

a. Hydrography

Charted hydrography is principally from the survey discussed in par. 5 above, and partially from the present survey before verification. Further consideration is unnecessary, except for the 2-ft. sounding on Chart 6151 at lat.  $46^{\circ} 11.78'$ , long.  $123^{\circ} 41.15'$  which was erroneously plotted on the adjoining survey H-7179 (1947). According to the review of that survey the sounding should be disregarded.

b. Aids to Navigation

The positions of floating aids to navigation on the present survey and on the charts are in substantial agreement and adequately mark the features intended, except as follows:

- (1) The buoy on the present survey at lat.  $46^{\circ} 11.3'$ , long.  $123^{\circ} 44.54'$ , was moved about 175 meters southeastward subsequent to the survey and is now correctly charted in accordance with C. G. Notice to Mariners (Chart Letter No. 46, 1948).
- (2) The buoy from Chart Letter No. 583 (1947) on Chart 6151 at lat.  $46^{\circ} 10.88'$ , long.  $123^{\circ} 40.35'$ , is charted on a mud flat and appropriately belongs in 15-to 20-ft. depths, according to the Light List.
- (3) Some of the buoy numbers were changed subsequent to the survey and are now in accordance with Chart Letter No. 583 (1947).

7. Condition of the Survey

- a. The Descriptive Report and sounding records are complete and comprehensive.
- b. The survey was adequately smooth plotted.

8. Compliance with Project Instructions

The survey adequately complies with the project instructions.

9. Additional Field Work

This is a very good basic survey and no additional field work is recommended within the limits of the survey.

A survey of John Day River which adjoins the southwest part of the present survey is desirable. Comdr. Bernstein concurs in this recommendation in paragraph 6 of his letter of 27 September 1948 (in the Descriptive Report).

Examined and approved:



I. E. Rittenburg  
Chief, Nautical Chart Branch



Casper M. Durgin  
Chief, Division of Charts



K. G. Crosby  
Chief, Section of Hydrography



C. K. Green  
Chief, Division of Coastal Surveys

HUM

## TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography:~~

19 January 1948

Division of Charts: H. W. MURRAY

Plane of reference approved in  
4 volumes of sounding records for

HYDROGRAPHIC SHEET 7180

Locality - Cathlamet Bay, Columbia River, Oregon

Chief of Party: - E. H. Bernstein in 1947  
Plane of reference is mean lower low water, reading  
2.5 ft. on tide staff at Astoria (Tongue Point)  
19.5 ft. below B. M. 1 (1925)  
1.5 ft. on tide staff at Settlers Point  
23.9 ft. below B. M. 3 (1935)

Height of mean high water above plane of reference is

7.5 ft. at Astoria (Tongue Point)  
7.1 ft. at Settlers Point.

Condition of records satisfactory except as noted below:

*E. C. McKay*  
*Section*  
Chief, ~~Division of Tides and Currents.~~



