

7179

Diag'd. on diag. ch. No. 5902-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HO-05147 Office No. H-7179

LOCALITY

State Oregon

General locality Columbia River

Locality Cathlamet Bay

194 7

CHIEF OF PARTY

E.H. Bernstein

LIBRARY & ARCHIVES

DATE .....

6212

FEB 18 1948

H7179

Form 537  
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

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.

REGISTER No. H-7179...

Field No. Hc-05147..

State Oregon ✓

General locality Columbia River ✓

Locality Cathlamet Bay ✓

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

Instructions dated 25 February 1947

Vessel Hodgson

Chief of party E. H. Bernstein

Surveyed by Lieut. H. G. Conerly and R. M. Stone  
and

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

Fathograms scaled by Field Party

Fathograms checked by Elden Altizer & Marion T. Gwinn

Protracted by Marion T. Gwinn

Soundings penciled by Marion T. Gwinn

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

REMARKS: Smooth Sheet and Plotting by Seattle Processing Office.

123°45'

123°40'  
HARRINGTON PT

HO-1147  
H-7178

HO-D-47  
*T-7039a*

**SHEET LAYOUT DIAGRAM**  
COLUMBIA RIVER - CATHLAMET 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*

SETTLER PT.

46°10'

123°45'

123°40'

46°10'

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) <sup>(Sp. 43122)</sup> and of 6 September 1946 (CL-21-41) <sup>(Sp. 43123)</sup>; of 20 August 1945 (CL-18-57) <sup>(Sp. 43118) also Sp. 43119 (1946)</sup>; 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. <sup>46°</sup> Junctions are satisfactory south of Lat. 13', and in the channel immediately south of Harrington Point. In the region between Lat. 13' <sup>46°</sup> 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 ✓

H-7178  
H-7180

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. 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. 7178), 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.

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

4

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.  $46^{\circ} 12' 15''$  Long.  $123^{\circ} 44' 13''$  about 0.3 miles westward of the moorage area.

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. <sup>T-7033-2 (1937)</sup> 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

H-7180

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 and D. P. W. No. 46-32, and Y. & D. Drawing No. 414-371, 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 a 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.

6

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>40°17'</sup> 4017 respectively.

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-7180



Considerable changes are apparent between Lat. 13' to 14<sup>46</sup>5 and Long. 123<sup>7</sup> 41' to 43', in the shifting of shoal areas and particularly in the old deeper channel in Lat. 13<sup>46</sup>5.

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

The general shifting downstream of the shoal area, in Lat. 15', is apparent. This is a tendency that is noticeable in all shoals in the area. 46°  
H-7118

Sounding line, "a" day, up to "21a", was run on Harrington Point 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. 553.* H-7178

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. H-7178

A new channel is cutting through in an E - W direction just north of the sand flat in Lat. 13<sup>46</sup>5. H-7178

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. H-7118

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 OAK 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. H-7178

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

8

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.

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. Chart Letter No 497(1947)

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* 7178

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.

- 9
- 1- Sketch Sheet Layout
  - 1- ~~Sheet~~ <sup>Volumes</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. } H-7038, H-7039
  - 14 Volumes, Sounding Record, Forms 275.
  - 34 Fathograms (15-D) [(Gen. H-7178; 16ea H-7179; 9ea. H-7180)]

Respectfully Submitted,

*E. H. Bernstein*

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

10

TOPOGRAPHIC STATIONS  
Sheet Ho-A-47

Station	Latitude	D.M. (m)	Longitude	D.P. (M)
ACE	46° 12'	1150 (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)	LIZ	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 (111.9) 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'	--- (191) 1105 (181.5)			
MAW	46° 11' 123° 42'	--- (218) 660.5 (626)			

## NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED }  
TO BE DELETED } STRIKE OUT ONEShip HODGSON Camas, Washington July 31, 1947I 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. StoneE. H. Bernatein

Chief of Party.

STATE			POSITION					METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOUR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
CHARTING NAME	DESCRIPTION	SIGNAL NAME	LATITUDE		LONGITUDE		DATUM						
			° ' "	D. M. METERS	° ' "	D. P. METERS							
	John Day Channel Buoy No. S5 off John Day Pt.		46-11	568 (1284) 1122	123-44	681 (605) 29	NA 1927	H-7180 (HO-0521,7)	May 1947	X			6151
	John Day Channel Buoy No. S4		46-10	731 (731)	123-44	893 (1258)	"	"	"	X			"
	John Day Channel Buoy No. S (red)		46-10	741 (1112) 812	123-43	893 (394) 653	"	"	"	X			"
	John Day Channel Buoy No. S (red)		46-10	1011 (1160)	123-43	654 (654) 140	"	"	"	X			"
	Prairie Channel Buoy No. S (12-Red)		46-10	(393)	123-40	(1147)	"	"	"	X			"
	John Day Channel Buoy No. S (red) (off John Day Pt.)		46-10	807 (1046)	123-43	194 (1093)	"	"	"	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.

## NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED  
TO BE DELETED

STRIKE OUT ONE

Ship HODGSON  
Camas, Washington

31 July 1947

I recommend that the following objects which have ~~(struck out)~~ 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

E. H. Bernstein

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
				°	'	D. M. METERS	°							
	Radio	Vertical Radio Antenna, U.S. Naval Station, Tongue Pt.	Radio	46-12	596.9 (1255.7)	123-45	1129.7 (156.7)	NA 1927	Tri. Ang.	1947 April	X		6151	
	Stack	Naval Station, Tongue Pt. Stack, concrete, tall	Stack	46-12	449.4 (1403.2)	123-45	1197.0 (89.4)	"	"	"	X		"	

497 (1947)

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.

## NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED  
TO BE DELETED

STRIKE OUT ONE

Ship HODGSON Camas, Wash.31 July, 1947

I recommend that the following objects which have ~~(have not)~~ 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. H. Stone

E. H. Bernstein

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
				°	'	D. M. METERS	°							
		Tongue Point Channel Range Front (932)		46-13	1505.9 (346.6)	123-14	144.6 (1141.2)	NA 1927	April Triang.	1947	X		151	
		Tongue Point Channel Rear Range (933)		46-14	170.5 (1682.1)	123-43	539.4 (746.2)	"	"	"	X		"	
		Harrington Point Range Front (939)		46-15	1111.0 (741.6)	123-40	71.2 (1213.9)	"	"	"	X		"	
		Main Channel Beacon No. 2 (913)		46-14	113.6 (1739.0)	123-42	1001.7 (284.0)	"	"	"	X		"	
		Main Channel Beacon No. 4 (914)		46-14	1140.9 (711.7)	123-41	835.9 (449.5)	"	"	"	X		"	
		Pillar Rock Channel Lower Range Front (986.3)		46-15	1067.6 (785.0)	123-39	614.0 (671.2)	"	"	"	X		"	
		Miller Sands Channel No. 4 (984)		46-15	622.0 (1230.6)	123-39	535.7 (749.4)	"	"	"	X		"	
		Grays Bay (972)		46-16	117.7 (1734.9)	123-43	1097.3 (187.6)	"	"	"	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.



~~NON~~FLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED  
~~TO BE DELETED~~

STRIKE OUT ONE

Ship HODGSON Comas, Washington July 31, 1947

I recommend that the following objects which have ~~(have not)~~ 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

E. H. Bernstein

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							
				° ' "	D. M. METERS	° ' "	D. P. METERS						
		Tongue Point Naval Base Buoy No. 2 (967.3)		46-12	1297 (555)	123-45	375 (911)	NA 1927	H-7179 (HO-0511,7)	May 1947	X		6151
		Tongue Point Naval Base Buoy No. 4		46-12	1100 (752)	"	472 (814)	"	"	"	X		"
		Tongue Point Naval Base Buoy No. 6 (967.5)		46-12	906 (946)	"	521 (765)	"	"	"	X		"
		Miller Sands Channel Lighted Buoy No. 13 (985)		46-15	894.0 (960.0)	123-39	735 (550)	"	H-7178 (HO-114,7)	"	X		"
		Miller Sands Channel Lighted Buoy No. 9 (983)		46-15	152 (1088.6)	123-40	812 (473)	"	"	"	X		"
		Miller Sands Channel Lighted Buoy No. 1 (982)		46-15	765 (106)	123-39	1234 (51)	"	"	"	X		"
		Miller Sands Lighted Buoy No. 2 (981)		46-15	106 (1746)	123-40	947 (338)	"	"	"	X		"
		Tongue Point Crossing Lighted Buoy No. 6 (936)		46-13	98 (1754)	123-45	874 (412)	"	"	"	X		"
		Tongue Point Crossing Lighted Buoy No. 8 (937)		46-13	581 (1271)	123-44	987 (299)	"	"	"	X		"
		Tongue Point Crossing Lighted Buoy No. 10 (938)		46-13	1142 (710)	123-43	908 (378)	"	"	"	X		"
		John Day Channel Buoy No. S7		46-11	1283 (570)	123-44	1039 (248)	"	H-7179 (HO-0511,7)	"	X		"
		John Day Channel Buoy No. S2		46-11	955 (898)	123-44	965 (322)	"	"	"	X		"
		John Day Channel Buoy No. S (Red) off John Day Pt.		46-10	1748 (205)	123-44	450 (837)	"	H7180 (HO-0524,7)	"	X		"
		John Day Channel Buoy No. S7 off John Day Pt.		46-10	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	Level	Rod	Readings	in	Feet		
					away				
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	0.04			Mean	0.13

17  
Approval Sheet

Hydrographic Survey

Cathlamet Bay, Columbia River

Sheet H-7178  
(HC-1147),  
Sheet H-7179  
(HC-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., USCGS  
Chief of Party.

## TIDE NOTE

to accompany

Hydrographic Survey of Cathlamet Bay, Ore.

Project OS - 329

7178

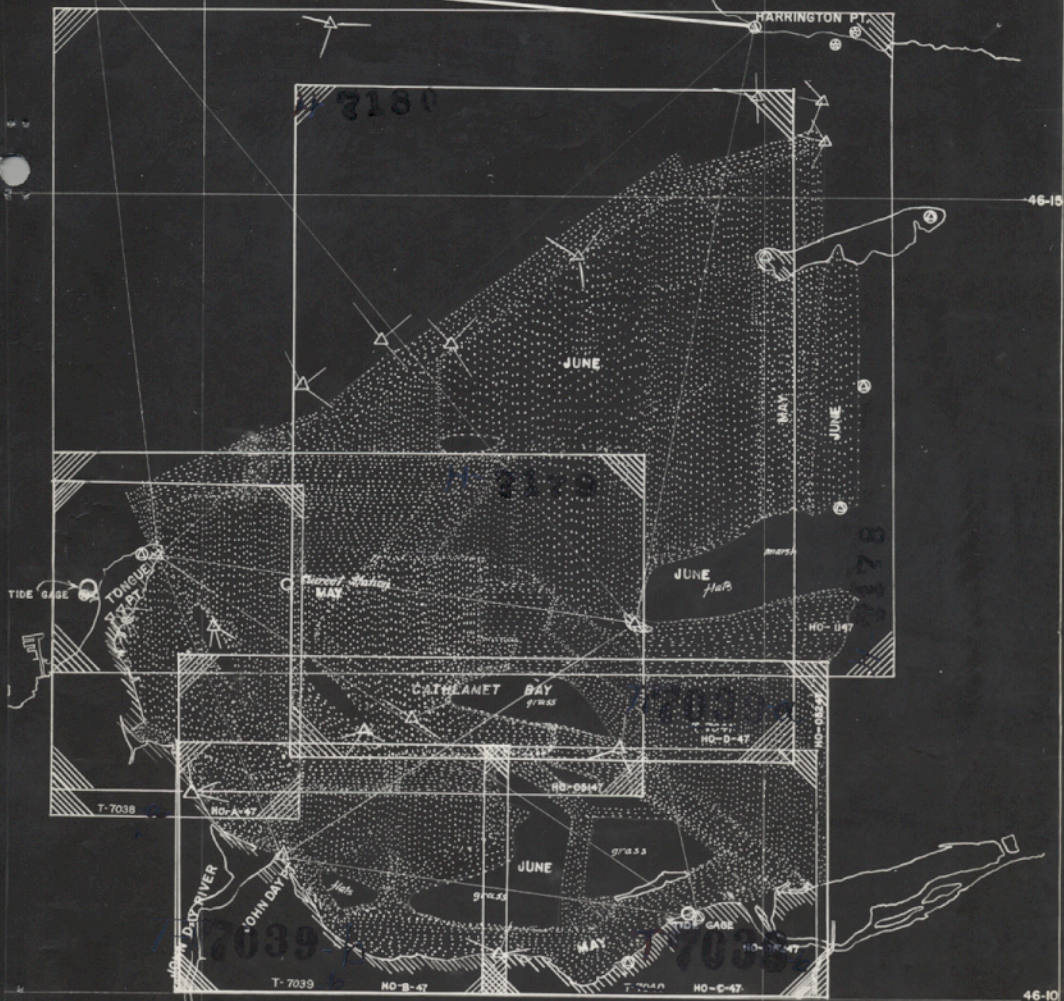
7179

7180

The primary tide station maintained by the U. S. Coast and Geodetic Survey at Tongue Point, Oregon, Lat.  $46^{\circ} 12'15''$ , Long  $123^{\circ} 26'1''$ , 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.  $123^{\circ} 40'5''$ . 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.



MONTHLY PROGRESS SKETCH  
 CATHLAMET BAY, COLUMBIA RIVER, OREG.-WASH.  
 SCALE 1:40,000 PROJECT CS 329  
 U.S.C. & G.S.S. HODGSON E. H. BERNSTEIN, COM'DG.  
 MARCH 17, 1947 TO JUNE 27, 1947

LEGEND

HYDROGRAPHY  
 GRAPHIC CONTROL

ON COMMON ALUMINUM SHEET- HO-A & C-47  
 AND  
 HO-B & D-47



DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
WASHINGTON 25

IN REPLY ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY  
AND NOT THE SIGNER OF THIS LETTER  
AND REFER TO NO. 83-bdh

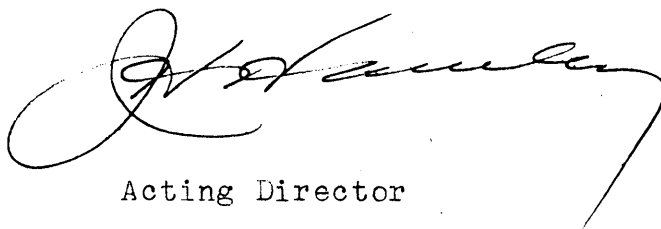
27 August, 1947

To: Officer in Charge  
Seattle Processing Office  
U. S. Coast and Geodetic Survey  
1500 Westlake Ave., N.  
Seattle 9, Washington

Subject: Shoreline in Cathlamet Bay, Oregon

Receipt is acknowledged of your letter of 22 August, requesting information on available shoreline for hydrographic surveys covering the subject area.

The latest available shoreline in this area must be obtained from 1937<sup>5</sup> planetable surveys which are on file in this Bureau. This shoreline can be readily transferred in this office without the need of making film positives. When the plotting of hydrographic details is completed, you may therefore forward these smooth sheets to this office.



Acting Director

TO BE ADDED TO COMBINED REPORT FOR H-7178, H-7179, and H-7180

H-7179

Ho-05147

CATHLAMET BAY, LOWER COLUMBIA RIVER

Seattle Processing Office Notes

SMOOTH SHEET:

Projection is hand made on Whatman paper.

Triangulation is from the field computations of work by Bernstein 1947. Topographic Signals are from T-7038 and T-7039. There are no hydrographic signals on the sheet.

CROSSINGS:

Very good.

SHORELINE:

To be added in Washington Office. See Directors letter 83-bdh of 27 August 1947 attached.

FATHOGRAMS:

Rescaled by field party and again spot scanned by plotter.

POSITION 145k Vol. 4, Page 37:

This falls near Lat.  $46^{\circ}12'1''$  ~~36.1~~ Long  $123^{\circ}41'6.75''$ . If plotted ahead on line it will not fit the single angle. The sounding looks erroneous here. It has been rejected. An examination is recommended to the reviewer. *No basis for plotting after 90°CC according to boat sheet - unimportant - rejected*

BERTHING SPACE IN PRAIRIE CHANNEL:

There are long lines of ships tied up abreast, moored in Prairie Channel, heading into current. Soundings were taken from these vessels with hand lead as recorded in volumes 9 and 10. These soundings are readily recognizable in the central part of the sheet, approximately along Lat.  $46^{\circ}12'15''$  between Meridians  $123^{\circ}41'45''$  and  $123^{\circ}43'45''$ .

ROCKS OFF TONGUE POINT:

Attention is called to the note on the boat sheet at Tongue Point that "the old rock cribs do no longer bare at MLLW".

H-7179

Ho-05147

CATHLAMET BAY--LOWER COLUMBIA RIVER

Geographic Names

Columbia River

Cathlamet Bay

Tongue Point

Mott Island

Mott Basin

McGregor Island

Oregon



Respectfully submitted,

Edgar E. Smith  
Cartographic Engineer  
Seattle Processing Office

STATISTICS

for

HYDROGRAPHIC SURVEY H-7179 (1947)

PROJECT CS-329

SHIP HODGSON

Vel.	Day Letter	Date	No. of Positions	No. of H.L. Sdgs.	Stat. Miles of Sdgs.	Launch No.
1	a	5/6/47	93		11.6	141
1	b	5/7/47	199		21.6	141
1	c	5/8/47	162		20.2	141
2	d	5/9/47	134		14.4	141
2	e	5/12/47	173		21.6	141
2&3	f	5/13/47	187		25.6	141
3	g	5/16/47	101		13.9	141
3	h	5/23/47	121		18.9	141
3&4	j	5/26/47	134		20.1	141
4	k	5/27/47	152		20.2	141
4	l	5/28/47	151		22.2	141
4&5	m	5/29/47	166		28.3	141
5	n	6/3/47	95		14.6	141
5	p	6/5/47	148		22.5	141
6	q	6/6/47	184		30.8	141
6	r	6/7/47	160		23.5	141

STATISTICS

for

HYDROGRAPHIC SURVEY H-7179 (1947)

PROJECT CS-329

SHIP HODGSON

Vol.	Day Letter	Date	No. of Positions	No. of H.L. Sdgs.	Stat. Miles of Sdgs.	Launch No.
6&7	s	6/8/47	104		14.7	141
7	t	6/9/47	84		10.8	141
7	u	6/10/47	130		14.9	141
7&8	v	6/19/47	166		16.6	114
8	w	6/20/47	121		9.5	114
8	x	6/23/47	114		9.3	114
8	y	6/25/47	75		6.3	141
9	a	6/17/47	23	88	-	-
9	e	6/25/47		56		
10	b	6/17/47	12	104		
10	c	6/18/47	9	45		
10	d	6/25/47		177		
TOTALS-----			3,198	470	412.1	

Area in square statute miles----- 7.5

GEOGRAPHIC NAMES

Survey No.

**H7179**

Name on Survey

	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		
	A	B	C	D	E	F	G	H	K	
<u>Oregon</u>				(for title)					USGB	1
<u>Columbia River</u>			"	"					"	2
<u>Cathlamet Bay</u>			"	"						3
										4
<u>Tongue Point</u>										5
<u>Mott Island</u>										6
<u>Mott Basin</u>										7
<u>McGregor Island</u>										8
										9
					Names underlined in red are approved. 3/8/48 L.Heck					10
<u>Prairie Channel</u>										11
<u>North Channel</u>					4 additional names approved 9/8/48 L.H.					12
<u>South Channel</u>										13
<u>John Day Channel</u>										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

H7179

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7179...

Records accompanying survey:

Boat sheets .1...; sounding vols. 10...; wire drag vols. 0...; bomb vols. .2...; graphic recorder rolls 17...; special reports, etc. ....

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

Table with 2 columns: Description and Value. Rows include: Number of positions on sheet (3198), Number of positions checked (90), Number of positions revised (13), Number of soundings revised (62), Number of soundings erroneously spaced (97), Number of signals erroneously plotted or transferred (0), Topographic details (Time 8), Junctions (Time 0), Verification of soundings from graphic record (Time 50).

Verification by... L. Lussac, Jr. .... Total time .249... Date 5/28/48.

Reviewed by... J. T. Jordan .... Time .50... Date 9/2/48.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7179

FIELD NO. HO-05147

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

Soundings:

Control:

808-Fathometer  
Handlead

Visual fixes on shore signals

Chief of Party - E. H. Bernstein  
Surveyed by - H. G. Conerly and R. M. Stone  
Protracted by - M. T. Gwinn  
Soundings plotted by - M. T. Gwinn  
Verified and inked by - L. Lubbers, Jr.  
Reviewed by - G. F. Jordan, September 7, 1948  
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline is from T-7038a (1947) supplemented by shoreline transferred in brown ink from T-6387a (1935). Where the shoreline of 1935 on McGregor Island conflicts with hydrography of the present survey, the necessary revision is shown with a dashed red line.

The control signals are from triangulation of 1947 and from plane table surveys T-7038a, T-7039a and T-7039b of 1947. Several undescribed topographic signals on grass flats are believed to be temporary features.

2. Bottom Configuration and Depth Curves

The bottom has been subjected to natural and artificial changes which have caused considerable irregularities. Dredging, silting and scouring by currents, has changed to some extent most of the area. In the large shoal areas the bottom is generally smooth.

The depth curves are completely drawn on this well-developed survey.

3. Sounding Line Crossings

The soundings at crossings are in very good agreement.

4. Adjoining Surveys

Adequate junctions are effected with H-7178 (1947) on the north and east, and with H-7180 (1947) on the south and southeast.

5. Comparison with Recent Surveys

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

A comparison with this recent survey reveals natural and artificial changes which have occurred generally throughout the area. For example, present depths in the vicinity of lat.  $46^{\circ} 12.8'$ , long.  $123^{\circ} 44.3'$  are about 8 ft. deeper than prior depths. Spoil in prior 1-to 7-ft. depths in the vicinity of lat.  $46^{\circ} 12.1'$ , long.  $123^{\circ} 44.8'$ , has formed Mott Island and has caused shoaling in adjacent areas. Bottom irregularities between Tongue Point and McGregor Island have shifted about and shoals and channels have changed in extent and depth.

This prior survey had been partially superseded by surveys by the Corps of Engineers and is now completely superseded by the present survey in the common area.

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

a. Hydrography

Charted hydrography is from H-5928 (par. above), from subsequent surveys by the Corps of Engineers and partially from the present survey before verification. Charted hydrography is superseded by hydrography on the present survey and except for the following items needs no further consideration:

- (1) The TOWER Charted at lat.  $46^{\circ} 13.1'$ , long.  $123^{\circ} 45.11'$ , from a 1940 survey by the Corps of Engineers (Bp. 34798) should be deleted from the chart. According to the letter of 27 September 1948 from Comdr. Bernstein (in Descriptive Report for H-7180) the tower no longer exists.

- (2) The 11-ft. sounding charted at lat.  $46^{\circ} 13.0'$ , long.  $123^{\circ} 44.97'$ , from a survey by the Corps of Engineers in 1946 (Bp. 40765) falls near undeveloped 13-ft. depths on the present survey and should be retained.
- (3) The piles charted at lat.  $46^{\circ} 11.33'$ , long.  $123^{\circ} 44.0'$ , and lat.  $46^{\circ} 11.36'$ , long.  $123^{\circ} 43.75'$ , from surveys by the Corps of Engineers in 1946 (Bps. 43118-19) should be retained. The piles are not mentioned on the present survey.
- (4) The charted row of piling extending southeast from lat.  $46^{\circ} 12.34'$ , long.  $123^{\circ} 44.80'$ , is from surveys by the Corps of Engineers in 1946 (Bps. 43118-19) and should be retained. Although no row of piling is shown on the present survey or T-7038a (1947), the Descriptive Report for the latter survey refers to a row of piling in describing signal END (end pile).
- (5) The 17-ft. sounding charted at lat.  $46^{\circ} 12.73'$ , long.  $123^{\circ} 44.85'$ , from the present survey before verification was reduced in error and is actually 27 feet. This sounding is being hand-corrected on the present stock of Chart 6151.
- (6) The 2-ft. sounding charted at lat.  $46^{\circ} 11.78'$ , long.  $123^{\circ} 41.15'$ , from the present survey before verification should be disregarded. Falling in 15-ft. depths, the sounding is controlled by a weak, line-end position. The position and soundings have been rejected.
- (7) The low-water spot charted at lat.  $46^{\circ} 11.58'$ , long.  $123^{\circ} 42.70'$ , from the present survey before verification should be disregarded. Originating with a zero sounding at a detached position, the low-water spot actually falls on the zero depth curve on the north side of the channel. The revised position agrees with the boat sheet position and shows that one signal was erroneously recorded.

b. Aids to Navigation

Aids to navigation on the chart are in accordance with Chart Letter No. 583 (1947) which was received from the Coast Guard about three months after completion of the present survey and which supersedes the present survey. The charted buoys adequately mark the features intended, however, it should be noted that the buoy charted on a mud flat in lat.  $46^{\circ} 12.60'$ , long.  $123^{\circ} 42.72'$ , belongs in 28-ft. depths, according to the Light List.



7. Condition of the Survey

- a. The Descriptive Report and sounding records are complete and comprehensive.
- b. The survey was adequately smooth-plotted.
- c. The row of piling west of Mott Island extending from signal FRY to signal IDA has been removed, according to a note on T-7038a (1947). A confirmation is contained in a letter of 27 September 1948 from Comdr. Bernstein (in Descriptive Report for H-7180).


8. Compliance with Project Instructions

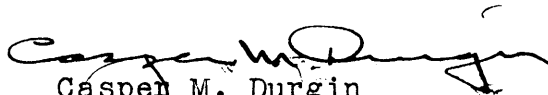
The survey adequately complies with the project instructions.

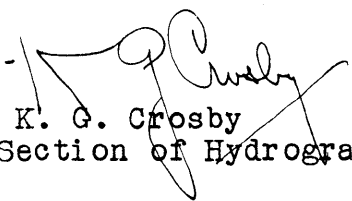
9. Additional Field Work


This is an excellent basic survey and no additional field work is recommended. It should be noted that the bottom irregularities in the berthing areas between Tongue Point and McGregor Island are subject to natural changes. Further development in that area is unwarranted at this time.

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

KWM

539

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~ 11 March 1948

Division of Charts: H. W. MURRAY

Plane of reference approved in  
10 volumes of sounding records for

HYDROGRAPHIC SHEET 7179

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 Astoris (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)

is 7.1 ft. at  
Settlers Point

Condition of records satisfactory except as noted below:

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

# NAUTICAL CHARTS BRANCH

SURVEY NOS H 7179, ~~H 7178~~

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
2/26/48	6151	J. G. McGinn	Before <del>After</del> Verification and Review (H 7179) <i>Partially applied</i>
5-3-'49	6151	<i>W. J. Anderson</i>	Before <del>After</del> Verification and Review <i>Fully applied</i>
2/26/48	6151	J. G. McGinn	Before <del>After</del> Verification and Review (H 7178) <i>Partially applied</i>
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review
			Before <del>After</del> Verification and Review

M-2168-1

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.