

7131

7131

Diag. Cht. No. 6156

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. WE-1246 Office No. H-7131

LOCALITY

State Oregon - Washington

General locality Columbia River

Locality Camas to Mt. Pleasant

1946

~~CHIEF OF PARTY~~

E.H. Bernstein

LIBRARY & ARCHIVES

DATE 23 MAY 1950

MAY 15 1950

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-7131

Field No. WE-1246

State Oregon - Washington ✓

General locality Columbia River ✓

Locality Camas, Washington to ^{Mt. Pleasant} Crown Pt., Oregon ✓

Scale 1:10,000 ✓ Date of survey 6 Sept. to 3 Oct. 1946 ✓

Instructions dated 14 May 1946
31 May 1946

Vessel Ship HODGSON

Chief of party E. H. Bernstein ✓

Surveyed by M. E. Jennermark and A. M. Logako ✓

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

Fathograms scaled by E. Altizer

Fathograms checked by Field party, Ship HODGSON

Protracted by John C. Couch

Soundings penciled by John C. Couch

Soundings in ~~1000s~~ feet at ~~MLLW~~ ^{MLLW} Columbia River Datum
(M.L.L.W. during lowest river stages and are true depths)

REMARKS: Smooth sheet and plotting by Seattle Processing Office.

COMBINED DESCRIPTIVE REPORT

to accompany

Hydrographic Sheets

<u>Field No.</u>	<u>Reg. No.</u>
— WE-1246	H-7131 (1946)
WE-1346	H-7132
WE-1446	H-7133

Project CS-325

for H-7131 (1946)

6 Sept. 1946 - 28 Feb. 1947
17 July 1947 - 3 Oct. 1947

Ship HODGSON E. H. Bernstein
Commanding Officer

PROJECT:

The instructions for Project CS-325 are dated 14 May 1946, Ref. No. 22/MEK; S-1-WE.

Revised instructions are dated 31 May 1946, Ref. No. 22/MEK; S-2-WE.

These instructions cover new basic hydrographic surveys of the Columbia River from the vicinity of Hayden Island at Vancouver, Washington, to Bonneville Dam at Bonneville, Oregon.

SURVEY LIMITS, DATES AND GENERAL:

Sheet (WE-1246) H-7131⁽¹⁹⁴⁶⁾ extends from Camas to ~~Crown~~ ^{Mt. Pleasant} Pt. ✓

Sheet (WE-1346) H-7132 extends from ~~Crown~~ ^{Mt. Pleasant} Pt. to Oneonta.

Sheet (WE-1446) H-7133 extends from Oneonta to Bonneville.

Sheet (WE-1246) H-7131 - 6 Sept. to 3 Oct. 1946 ✓

Sheet (WE-1346) H-7132 - (14 Jan. to 28 Feb. 1947
(17 July to 3 Oct. 1947

Sheet (WE-1446) H-7133 - 22 Aug. to 3 Oct. 1947

The instructions called for new hydrographic surveys in all navigable waters from Ryan Pt. to the locks at Bonneville Dam.

Maps of the latest U. S. Engineer's surveys between Camas and Bonneville were obtained. (See List Appended). Daily checks were made in agreement with their soundings as their soundings were confined to the main channels only, it was desirable and more economical to also closely cover the main channel areas.

In accordance with instructions all navigable water and secondary channels north of Reed Island (Sheet WE-1246)^{H-7131 (1946)} is used for small boat traffic except during lower stages of the river, and at stages of the river sufficiently high by tugs towing log rafts especially during times of windy weather.

Similarly, the secondary channel south of Sand Island (Sheet WE-1346) is used by tugs towing log rafts although much less frequently. Greater use is made of the secondary channel on the north side of the river between St. Cloud and Fir Point (Sheet WE-1346).

The channel on the north side of Pierce and Ives Islands (Sheet WE-1446) is not used for through traffic, but, has been mainly used for assembly of log rafts.

Not Applicable

Seining during the salmon runs is done with the use of horses on the sand beach in vicinity of stations TAN and WIG (Sheet WE-1346).

Large gravel mining had been done on Pierce and Ives Islands, (Sheet WE-1446).

The area from the line COD-COW, Sheet WE-1446 to the shoal at the eastern end of the unnamed island in Long. 122° 07' is reserved for drift seining during the salmon runs.

VESSELS AND EQUIPMENT:

The hydrography on all three sheets was done with 36-foot landing barge Launch No. 141, supplemented in very shoal water work by the use of a catamaran made by bolting two dinghies together. On Sheet ^{H-7133} (WE-1446) two days work was done by army mine yawl Launch No. 114.

Areas consistently occupied by log rafts as well as numerous detached soundings in shoal water were done by use of a dinghy and walking of log rafts.

The results of measurements to determine amount of squat of Launch No. 141 is appended. *filed with fgms H-7132*

Shoals and rocky areas bearing at low water were examined and verified at such times, including the individual location of bared rocks.

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

Not Applicable

✓

✓

✓

✓

TIDES AND CURRENTS:

(See discussion under tide note attached).

Numerous notes appear in the hydrographic volumes in regards to current conditions. In general currents run fair with the main channels with considerable intensity in regions upstream towards Bonneville. Exceptions are the turn in the channel off stations WHO and FAT (Sheet WE-1246^{H-7131(1946)}) where a northwesterly set prevails. On Sheet WE-1346^{H-7132} in the region between stations ARM to CAPE HORN LIGHT a northwesterly set is experienced. On this same sheet a set towards the southeast is experienced in the region between Fashion Reef Light and Multonomah Falls Light. Above this reach of the River currents in general are so strong, that constant piloting is necessary.

No reversal of currents was experienced at any time.

All of the dikes constructed by the U. S. Engineers are exposed about 6 feet above datum level and are submerged at higher stages of the river.

SMOOTH SHEETS:

Projections for the smooth sheets were not made by the field party. (*Seattle Processing Office*)

CONTROL STATIONS:

This stretch of the Columbia River is very adequately supplied with triangulation control stations determined in 1938. Two additional triangulation stations were established in 1946 in the channel north of Reed Island* (Triangulation Sketch No. 2). Several new stations were established between

* filed with fgms. H-7132

Oneonta and Ives Island in 1947. (Triangulation Sketch No. 3). Lists of geographic positions for the new stations established by the combined operations party of the *filed with fams. H-7192* Ships HODGSON and WESTDAHL are appended to this report.

Graphic control is furnished by aluminum mounted sheets listed under Inventory. *See Review, par. 1.*

SHORELINE AND TOPOGRAPHY:

Shoreline and topography will be furnished by the photogrammetry sheets being compiled at the present time by the Photogrammetry Office ^{at} ~~at~~ Portland, Oregon. In accordance with the instructions the shoreline has been left uninked on the boat sheets. See the descriptive report for the pertinent topographic sheets. *Shoreline by Seattle Processing Office (for origin see Review, par. 1.)*

MAGNETIC OBSERVATIONS:

Magnetic declination was determined with a compass declinometer at the stations designated in the Instructions or at the nearest similarly situated stations.

SOUNDINGS:

Soundings were taken with an 808A Depth Recorder, No. 625 with the Launches No. 141 and 114. Handlead soundings were taken by use of the dinghy, catamaran and by log-walking.

Numerous vertical comparisons and bottom specimens were obtained on all sheets.

Serial temperatures and salinities were determined at approximately one month intervals. These were not used as all fathometer corrections depend on direct tri-daily bar checks.

Corrections for fathometer soundings were obtained from tables prepared from the three daily bar comparisons. These comparisons were made to the greatest depth found daily and for the various scale settings of the fathometer. Fathometer corrections are accurate and have been entered in the sounding records in increments of two tenths of a foot.

CONTROL OF HYDROGRAPHY:

All soundings on these sheets are definitely fixed by sextant fixes on triangulation and precise topographic control stations.

ADEQUACY OF SURVEY:

This survey is a new basic survey, ~~and~~ is adequate in all respects, and should supersede all prior surveys for charting. No parts of the survey are incomplete nor of questionable accuracy. The hydrography under this project, between Camas and Bonneville, was done with modern recording launch fathometer sounding.

All depth curves can be definitely drawn.

CROSS LINES:

Cross lines are well scattered and constitute 7.5% of the mileage exclusive of overlaps at junctions and at the ends of the straight reaches of the river. There are no discrepancies between the regular system of lines and the cross lines.

COMPARISON WITH PREVIOUS SURVEYS:

The previous Coast and Geodetic Survey Hydrographic Surveys Nos. H-2506, H ⁽¹⁹⁰¹⁾-2550, and H ⁽¹⁹⁰¹⁾-2574 can be compared in

a most general way only, because of extensive changes in the river bottom since 1900 - 1902. (Review, par. 5.)

The rock shown on Hydrographic Sheet H-2574 and charted on Chart No. 6156, 420 meters northeast of Candiana Light at Cape Horn was found to be a pinnacle which bares 1 foot at Columbia River Datum level. H-7132

The charted rock 1050 meters northeast of Fashion Reef Light was verified and in addition two others about 50 meters away on either side, all three lying on the same rocky reef. H-7132

The sunken rock symbols charted on Fashion Reef should be retained, and the rocks accurately located in 1947 which bare should also be charted. H-7132

It is recommended that the dotted line standard symbol indicating danger to navigation be used around these rocks as well as the shoal spots found in the 1947 survey. N.E.

All rocky reefs and shoal areas were visually examined at the very low stages of the river.

Ough Reef retains the general shape as charted. It shows the tendency to be building up on the downstream part. The charted 3 foot spot 560 meters southwest of Parker Landing Light was verified as well as the 7 foot spot south by west Parker Landing Light. The grounding of a tug pushing two barges occurred on the 3 foot shoal during September of this year. H-7131 (1946)

The dock charted at Washougal in Long. 122° 22.2' has been entirely removed. H-7131

A copy of a special report on shoaling just off of the Camas - Washougal Dock dated 2 October 1946 is attached. *(Not found)*

It is recommended that all previously charted positions of piles be deleted and those listed under the report of Landmarks for Charts, appended hereto charted instead as well as such that will be shown on the photogrammetric sheets now in process of compilation. In this connection it is found that piles and dolphins used for securing log booms are usually very substantial and permanent whereas piles driven for fishtraps are lightly driven and last for the salmon run season only. The latter do not survive the spring floods.

The charted dike or pier at Onion Rock does not exist. *H-7131*

In connection with the secondary channel south of Sand Island previously mentioned the words "high water channel" as well as "slough of six feet depth" should be deleted from the chart. *H-7132*

The form lines in vicinity of Cape Horn do not portray a true picture of topographic conditions there. It is recommended that care be taken to show the perpendicularity and height of the cliffs in this vicinity. *H-7132*

COAST PILOT INFORMATION:

A copy of this report is attached. *filed with fgms H-7132*

AIDS TO NAVIGATION:

The positions of fixed and floating aids to navigation are given on Forms 567 of which copies are attached to this report. *See D.R. of H-7132 or Chf. Ltrs. 711 & 768 (1947)*

There are no maintained ranges for navigation between Camas, Washington and Bonneville, Oregon. *Review, par. 6 B.*

There are no submarine cable crossings, nor overhead telephone, telegraph or powerlines between the above points. ✓

There are no ferry crossings.

LANDMARKS FOR CHARTS:

Attached hereto are pertinent copies of "Landmarks for Charts". *See Chrt. Ltrs. 711 & 768 (1947)*

GEOGRAPHIC NAMES: 451 ✓

No special research was made on new geographic names except at opportunities occurring during the course of the work as this will be done by the Portland Photogrammetry Office. ✓

The name "Ives Island " for the island lying 1/2 mile to the northeast of Pierce Island is a well established local name, H-7133

None of the place names and names of geographical features appearing on Chart No. 6156 (latest revision date 46/9/21) were found to be incorrect. ✓

BY-PRODUCT INFORMATION:

The contracting construction firm using dredges for procuring fill for the new Columbia River Waterlevel Highway was very grateful for photostat copies of boat sheets WE-1346^{H-7132} and WE-1446^{H-7133} as well as bottom specimen data and the use of Coast Survey tide staffs at Prindle and Warrendale. ✓

APPLICABLE DATA:

Topographic Sheets:

(WE-G-46) T-7028a applicable to H-7131

Topographic Sheets: (con't)

(WE-H-46) T-7028b *applicable to H-7131*
 (WE-I-46) T-7029a
 (WE-J-46) T-7029b
 (WE-K-46) T-7030

Sheets "Landmarks for Charts":

4 sheets	"List of Topographic Positions"	T-7028a	
5 sheets	" " "	T-7028b	<i>filed with H-7132</i>
4 sheets	" " "	T-7029a	
4 sheets	" " "	T-7029b	
11 sheets	" " "	T-7030	

Fathograms:

8 boxes Fathograms for H-7131
 9 boxes Fathograms for H-7132
 7 boxes Fathograms for H-7133

Total Data:

<u>List of Names</u>	<u>Marigram Tides</u>	<u>Level Records Form 258</u>	<u>Tides, Hourly Heights Form 362</u>
Camas, Washington, Wash.	29 ea.	1 ea.	6 sheets
Prindle, Washington	36 ea.	1 ea.	5 sheets
Warrendale, Oregon	17 ea.	1 ea.	2 sheets
Cascade Locks, Oregon	5 ea.	1 ea.	1 sheet
Bonneville Dam			(USE) 4 sheets

1 each - Sketch, Sheet Layout
 2 each - Sketch, Triangulation
 2 sheets - Geographic Positions, Triangulation
 8 maps - U. S. Engineers, Portland, Oregon. Camas, Wash. to Bonneville

*filed with
H-7132*

<u>Reg. No.</u>	<u>Date</u>	<u>Scale</u>	<u>Locality</u>
<i>H-7131</i> { CL-106-32/7 Sheet No. 7	25-31 July 1944	1:5,000	Washougal, Wash. to point Reed Island.
	10 August 1944	1:5,000	Mid-way Point Reed Island to Rooster Rock.
CL-106-27/9 CL-106-12/9 Sheet No. 9	2 September 1943	1:5,000	Rooster Rock to Cape Horn

<u>Reg. No. (con't)</u>	<u>Date</u>	<u>Scale</u>	<u>Locality</u>
CL-106-27/10 CL-106-12/10 Sheet No. 10	2 Sept. 1943	1:5,000	Cape Horn to Prindle Dike Lt. just west of Prindle, Wash.
CL-106-27/11 CL-106-12/11 Sheet No. 11	3 Sept. 1943	1:5,000	Prindle Dike Lt. just west of Prindle to Multnomah Falls Front, Dike 30.
CL-106-27/12 CL-106-12/12 Sheet No. 12	7 Sept. 1943	1:5,000	Multnomah Fall Front, Dike 30, to point west of Skamania at station CRIB U.S.E.
CL-106-27/13 CL-106-12/13 Sheet No. 13	7 Sept. 1943	1:5,000	Point west of Skamania at station CRIB U.S.E. to east end of Pierce Island.
CL-106-27/14 CL-106-12/14 Sheet No. 14	6 Sept. 1943	1:5,000	East end of Pierce Island to Bonneville Ship Lock at Bonneville Dam.

Respectfully submitted,

/s/ E. H. Bernstein

E. H. Bernstein
Lt. Comdr., USC&GS
Commanding Ship HODGSON
Chief of Party

FATHOMETER CORRECTIONS
 Sheet (WE-1246) - H-7131

Depths								Remarks
5.0	10.0	15.0	20.0	25.0	30.0	40.0A	40.0B	
+0.1	0.0	-0.1	-0.2	-0.3	-0.3	-0.6	+1.0	a day (0830)
+0.2	+0.1	0.0	-0.2	-0.3	-0.3	-0.6		(1300)
+0.1	-0.1	-0.1	-0.2	-0.3	-0.3			(1640)
0.0	-0.1	-0.1	-0.2	-0.3	-0.3			
+0.1	-0.1	-0.1	-0.2	-0.3				b day (0830)
+0.1	0.0	0.0	-0.2					c day (1300)
0.0	-0.1	-0.1	-0.5	-0.6	-0.8	-1.5	-0.1	
+0.1	-0.1	-0.1	-0.3	-0.8				(1650)
0.0	-0.1		-0.4	-0.9				
+0.1	-0.1		-0.5					
+0.1	-0.1	-0.1	-0.3		-0.8	-1.5	+0.4	d day (0900)
+0.2	-0.1	-0.2	-0.4		-0.7			
							45 = -0.5	
							44 = -0.5	
0.0	-0.3	-0.3	-0.5		-0.7	-1.5	-0.3	e day (0830)
+0.1	-0.1	-0.2	-0.4		-0.8			37 = +1.0
0.0	-0.1	-0.5	-0.4	-0.5				37.5 = -0.5
+0.2	-0.1	-0.3	-0.3					36.5 = -0.5
0.0	-0.1	-0.1	-0.4		-0.7	-1.3	+0.2	(1630)
+0.1	-0.1	-0.2	-0.6					
0.0	-0.2	-0.3	-0.2		-0.8	-1.3	-0.4	f day (0830)
+0.1	0.0	-0.1	-0.4		-0.5			(1300)
0.0	-0.1	-0.3	-0.2		-0.6			
+0.2	0.0	-0.1	-0.3					(1640)
0.0	-0.1	-0.1	-0.5		-0.6			
(+0.4)	-0.1	-0.1	-0.2					
+0.1	0.0	-0.1	-0.2	-0.4	-0.3			g day (0900)
+0.2	0.0	-0.1	-0.2					(1300)
0.0	-0.1							(1640)
0.0	-0.1	-0.2	-0.3		-0.5	-0.7	+0.5	
+0.1	-0.1	-0.1	-0.4		-0.5			
0.0	-0.1	-0.1	-0.2		-0.3	-0.7	+0.4	h day (0840)
0.0	-0.1	-0.3	-0.2		-0.4	-0.7		(1630)
0.0	-0.2	-0.4	-0.5		-1.1			
0.0	-0.1	-0.2	-0.4		-0.9			
0.0	-0.1	-0.1	-0.4		-0.6			i day (1330)
+0.2	-0.1	-0.2	-0.3		-0.8			
0.0	-0.3	-0.3	-0.2	-0.4	-0.4			l day (1600)
0.0	-0.1	-0.1	-0.3	-0.4				
+0.6	+0.1	-0.1	-0.2		-0.7	-1.4	-0.4	m day (0900)
			-0.2		-0.8	-1.4		
3.6	-3.6	-5.9	-12.4	-6.1	-16.3	-13.2	+1.3	TOTAL
40	38	37	38	14	27	12	9	MEAN
+0.09	-0.095	-0.16	-0.33	-0.44	-0.604	-1.10	+0.14	

Fathometer Corrections
Sheet (WE-1246) - H-7131

Depth								Remarks
5.0	10.0	15.0	20.0	25.0	30.0	40.0A	40.0B	
0.0	(-0.6)	(-0.6)	(-0.7)	(-0.9)	(-1.1)	(-1.8)		
0.0	(-0.1)	(-0.4)	(-0.6)	(-0.9)	(-1.2)			
0.0	-0.6	-0.6	-1.2	-1.3	-1.5			
-0.1	-0.5	-0.5	-1.0	-1.3				
-0.1	-0.4	-0.4	-0.7	-0.9	-1.3			
-0.1	-0.3	-0.5	-0.7	-1.3	-1.3			
0.0	-0.4	-0.4	-0.7		-1.4	-2.2		
+0.1	-0.1	-0.4	-0.6		-1.3	-2.1		
0.0	-0.1	-0.4	-1.0		-1.2			
0.0	-0.2	-0.6	-0.7					
0.0	-0.2	-0.6	-0.7	(-1.1)	-1.1			
0.0	-0.1	-0.3	-0.6					
0.0	-0.2	-0.1	-1.2		-1.3			
0.0	-0.2	-0.5	-0.8					
-0.2	-3.9	-6.3	-11.2	-7.7	-12.7	-9.1	0	TOTAL
14	13	14	14	7	10	5	11	MEAN
-0.001	-0.30	-0.45	-0.80	-1.10	-1.27	-1.8	0.0	

A-Scale

Correction Feet	Depth Feet
+0.2	0 - 4 $\frac{1}{2}$
0.0	5 - 10
-0.2	10 $\frac{1}{2}$ - 19
-0.4	19 $\frac{1}{2}$ - 26 $\frac{1}{2}$
-0.6	27 - 32
-0.8	32 $\frac{1}{2}$ - 36 $\frac{1}{2}$
-1.0	37 - 41

a-day through Pos. 16b, and then from afternoon of d-day; then for all of e, f, g, h and through 1500 o'clock on j-day; and then for all of l-day and m-days.

A-Scale

Correction Feet	Depth Feet
+0.2	0 - 3
0.0	3 $\frac{1}{2}$ - 6 $\frac{1}{2}$
-0.2	7 - 10
-0.4	10 $\frac{1}{2}$ - 15 $\frac{1}{2}$
-0.6	16 - 18 $\frac{1}{2}$
-0.8	19 - 21 $\frac{1}{2}$
-1.0	22 - 25
-1.2	25 $\frac{1}{2}$ - 31
-1.4	31 $\frac{1}{2}$ - 34 $\frac{1}{2}$
-1.6	35 - 38
-1.8	38 $\frac{1}{2}$ - 41 $\frac{1}{2}$
-2.0	42 - up

Use for: from Pos. 17b through forenoon of c-day; then for afternoon of d-day; then from 1500 o'clock j-day through all of k-day.

B-Scale
Entire Sheet

Correction Feet	Depth Feet
+0.2	36 - 42 $\frac{1}{2}$
0.0	43 - 50
-0.2	50 $\frac{1}{2}$ - 57

TIDE NOTE

to accompany

Hydrographic Survey of Columbia River

Camas, Washington to Bonneville Dam

Project CS-325

Automatic portable tide gages were maintained at Washougal, Washington in Lat. $45^{\circ} 34.7'$, Long. $122^{\circ} 22.9'$, Prindle, Washington, Lat. $45^{\circ} 35.4'$, Long. $122^{\circ} 00.2'$. The heights of Columbia River datum at these gages are respectively, +2.64 feet, +1.40 feet, and -0.33 feet.

Tides were observed on the U. S. Engineer's staff below the dam at Bonneville at Lat. $45^{\circ} 38.2'$, Long. $121^{\circ} 56.8'$. This staff is set with zero at Mean Sea Level. The value +8.2 feet on this staff corresponds to the Columbia River datum at this site, determined by the U. S. Engineers.

Tides were also observed simultaneously at the nearest stations up-stream and down-stream from the site of hydrography.

Tide reducers to the nearest two-tenths of a foot were determined at each station, values from each being used in the adjacent areas and from the simultaneous records the values of the reducers in the intermediate zones were determined. These zones are marked in colored pencil on the boat sheets. The increments between zones varies according to the heights of stages of the river. Tables were prepared to distribute the daily increments between zones in 0.2 ft. values in accordance with the gradient of the Columbia River datum of the river which is given by Profile Plan No. CL-106-10,

furnished by the local U. S. Army Engineers.

STATISTICS

for

HYDROGRAPHIC SURVEY (WE-1246) H-7131

Project CS-325

Ship HODGSON

Vol. No.	Day Letter	Date	No. of Pos.	No. of H. L. Soundings	Stat. Miles Sounding	Launch No.
1	a	9/6/46	154		24.1	141
1	b	9/9/46	141		26.0	141
1&2	c	9/10/46	149		23.1	141
2	d	9/11/46	95		13.3	141
2	e	9/12/46	141		26.0	141
2&3	f	9/13/46	157		21.2	141
3	g	9/16/46	89		10.6	141
3	h	9/17/46	141		15.8	141
3	j	9/18/46	77		10.1	141
4	k	9/25/46	94	24	7.8	141
4	l	10/3/46	10		0.7	141
4	m	2/5/47	42		4.3	141
5	a	9/19/46	103	623	10.5	Dinghy Handlead
5	b	9/20/46	78	367	4.8	"
5	c	9/24/46	140	943	13.5	"
5	d	9/27/46	14	20	0.5	"
5	e	10/3/46	18	18		"
TOTAL - - - -			1643	1995	212.3	

Area, in square statute miles - - - - -4.60

APPROVAL SHEET

Hydrographic Sheet

Columbia River

Camas, Washington to Bonneville Dam

Sheet (WE-1246) - H-7131(1446) ✓
Sheet (WE-1346) - H-7132
Sheet (WE-1446) - H-7133

The boat sheets, sounding records, and all pertinent tide and level records have been examined and are approved by me. The smooth sheet had not been plotted at the time of writing this report. The survey is complete and adequate.

/s/ E. H. Bernstein

E. H. Bernstein
Lt. Comdr., USC&GS
Commanding Ship HODGSON
Chief of Party

H. 7131
We 1246

Columbia River

Processing Office Notes.

Smooth sheet.

The projection was made by hand on Whatman paper.
The shoreline and topography are from T 8709, T 8875 & T 8876. (1945-48)
Topographic signals are from graphic control plate T 7028. ✓
Triangulation stations are found in the lithographed sheets
of adjusted GP's for Oregon, Pages 446, 7, 8, 461, 2, 3, 4, 5,
506, 8, & 1176.

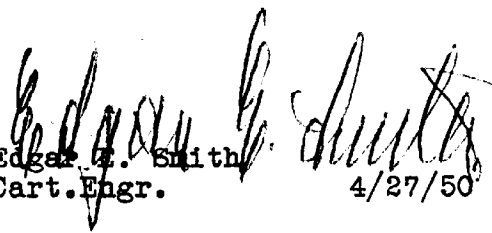
Crossings.

Good. ✓

Depth curves.

These are in agreement with H 7130 to westward and ✓
H 7132 to eastward.

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


Edgar E. Smith
Cart. Engr.

4/27/50

H 7131
We 1246

Columbia River

List of geographic names
penciled on smooth sheet.

Columbia River

Clark County

Washington

Multnomah County

Oregon

Reed Island

Gary Island

Sandy River

GEOGRAPHIC NAMES

Survey No. H-7131

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
<u>Washington</u>											USGB	1
<u>Clark County</u> X											"	2
<u>Oregon</u>											"	3
<u>Multnomah County</u> X												4
<u>Columbia River</u>											USGB	5
<u>Oregon:</u>												6
<u>Sandy River</u> ✓												7
<u>Gary Island</u> ✓												8
<u>Flag Island</u> ✓											USGB	9
<u>Tunnel Point</u> ✓												10
<u>Onion Rock</u> ✓												11
<u>Rooster Rock</u>												12
<u>Washington:</u>												13
<u>Mt. Pleasant</u> ✓												14
<u>Point Vancouver</u> ✓											USGB	15
<u>Reed Island</u> ✓												16
<u>Ough Reef</u> ✓												17
<u>Washougal</u> ✓												18
<u>Camas</u> ✓												19
												20
												21
												22
												23
												24
												25
												26
												27

Names underlined in red are approved. 6-6-50 L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7131

Records accompanying survey:

Boat sheets ¹.....; sounding vols. ⁵.....; wire drag vols.;
 bomb vols.; graphic recorder rolls ⁴ envel.;
 special reports, etc.

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

Number of positions on sheet	.....	1643
Number of positions checked	.....	99
Number of positions revised	.....	5
Number of soundings revised (refers to depth only)	.....	6
Number of soundings erroneously spaced	.....	0
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	.....19
Junctions	Time	.....40
Verification of soundings from graphic record	Time	.....20

Verification by *Otto Svendsen*..... Total time *286*..... Date *5 June 1951*

Reviewed by *J. A. Dinmore*..... Time *20*..... Date *29 June 1951*

DIVISION OF CHARTS
REVIEW SECTION - NAUTICAL CHART BRANCH
REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7131

FIELD NO. WE-1246

Oregon-Washington - Columbia River, Camas to Mt. Pleasant

Project No. CS-325

Surveyed in Sept. - Oct. 1946

Scale 1:10,000

Soundings:

Control:

808 Fathometer
Handlead

Sextant fixes on shore signals

Chief of Party - E. H. Bernstein
Surveyed by - M. E. Wennermark and A. M. Legako
Protracted by - J. C. Couch
Soundings plotted by - J. C. Couch
Verified and inked by - O. Svendsen
Reviewed by - T. A. Dinsmore, 29 June 1951
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline originates with T-8709 (1946), T-8875 and T-8876 (1945-48).

The signals are from graphic control survey T-7028a & b (1946).

2. Sounding Line Crossings

Considering the unevenness of much of the bottom, depths at crossings are in very good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

Offlying rocks, numerous shoals and deeps are found throughout the surveyed area. The bottom for the most part is irregular.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7132 (1946) on the east and H-7130 (1946) on the west.

5. Comparison with Prior Surveys

H-2550 (1901) 1:10,000

H-2574 (1901) 1:10,000

These prior surveys cover the area of the present survey. A comparison between the prior and present surveys reveals radical shoreline and bottom changes.

Reed Island has extended more than a mile westward over an area previously covered by depths up to 18 feet.

In the vicinity of lat. $45^{\circ} 53.4'$, long. $122^{\circ} 20.6'$, a dredged channel with maximum depths of 43 feet was formerly high ground as a part of Gary Island.

The natural and artificial changes that have taken place throughout the area are so extensive as to make a detailed comparison of little value. Portions of the river channel are dredged periodically by the Corps of Engineers and the spoil is dumped in the shoal areas surrounding the river islands. This together with the spring freshets which cause a shifting of the bottom are the principal factors contributing to the extensive changes that have taken place.

Numerous Corps of Engineers surveys have since superseded the above prior surveys in the charting of the greater portion of the area under consideration. The prior surveys contain no information in the common area which needs to be retained and are entirely superseded by the present survey for charting purposes.

6. Comparison with Chart 6156 (Latest print date 5/14/51)

A. Hydrography

The charted hydrography originates entirely with the present survey prior to verification and review. A few soundings have been revised in depth by 1-2 ft. during verification.

It is noted that two rocks awash falling outside the low-water line in the vicinity of lat. $45^{\circ} 34.62'$, long. $122^{\circ} 22.20'$, on the present survey do not appear on the chart.

The present survey supersedes the charted hydrography.

B. Aids to Navigation

The buoy located in lat. $45^{\circ} 34.34'$, long. $122^{\circ} 21.53'$, on the present survey is charted about 110 meters south-eastward in accordance with H.O.N. to M. 52, 1947 and its designation changed from C-1 to C-51 by authority of H.O.N. to M. 38, 1949.

The following charted range lights have been established subsequent to the present survey:

<u>Range Lights</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Source</u>
Front	$45^{\circ} 34.05'$	$122^{\circ} 20.57'$	H.O.N. to M. 1, 1951
Rear	$45^{\circ} 34.00'$	$122^{\circ} 20.28'$	" " "
Rear	$45^{\circ} 32.95'$	$122^{\circ} 20.22'$	H.O.N. to M. 36, 1949
Front	$45^{\circ} 32.58'$	$122^{\circ} 16.19'$	H.O.N. to M. 23, 1948
Rear	$45^{\circ} 32.53'$	$122^{\circ} 16.37'$	" " "
Rear	$45^{\circ} 32.50'$	$122^{\circ} 16.02'$	" " "
Rear	$45^{\circ} 32.63'$	$122^{\circ} 15.19'$	" " "

Except as noted, aids to navigation located on the present survey are in substantial agreement with the charted aids and adequately mark the features intended.

C. Controlling Depths

There are no conflicts between present survey depths and the charted controlling depths in the dredged portions of the river channel. The charted controlling depths of 14-15.5 ft. originate with a Corps of Engineers survey of November 1947 (Chart Letter 205, 1949).

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was accurately done.
- c. No information was recorded regarding the identity of signal PUP falling 120 meters offshore in lat. $45^{\circ} 33.51'$, long. $122^{\circ} 17.67'$. It is assumed that the signal is of a temporary nature.

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 required.

Examined and approved:


H. R. Edmonston

Chief, Neautical Chart Branch


L. S. Hubbard

Chief, Section of Hydrography


H. Arnold Karo

Chief, Division of Charts


W. M. Scaife

Chief, Division of Coastal Surveys

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

6 June 1950

Division of Charts: R. H. Carstens

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 7131

Locality Comas to Crown Point, Columbia River

Chief of Party: E. H. Bernstein in 1946-47
Plane of reference is Columbia River Datum, reading
1.4 ft. on tide staff at Prindle
38.4 ft. below B. M. 1 (1940)

2.6 ft. on tide staff at Washougal
25.6 ft. below B. M. 1 (1940)

Condition of records satisfactory except as noted below:

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

