

7133

Diag. Cht. No. 6156

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. WE- 1446 Office No. H-7133

LOCALITY

State OREGON - WASHINGTON

General locality COLUMBIA RIVER

Locality ONEONTA TO BONNEVILLE

194 7

CHIEF OF PARTY

E. H. Bernstein

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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 7133

Field No. WE 1446

State Oregon - Washington ✓

General locality Columbia River ✓

Locality Oneonta to Bonneville ✓

Scale 1/ 10 000 ✓ Date of survey Aug. 22 to Oct. 3 1947 ✓

Instructions dated May 14 and 31, 1946

Vessel Ship HODGSON

Chief of party E.H. Bernstein ✓

Surveyed by R.M. Stone ✓

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

Fathograms scaled by E. Altizer

Fathograms checked by Field party, Ship HODGSON

Protracted by James R. Wheeler

Soundings penciled by James R. Wheeler

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW Columbia River Datum ✓
(Mean Lower Low Water during lowest river stages)

REMARKS: Smooth sheet and plotting by
Seattle Processing Office

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheets

	<u>Field No.</u>	<u>Reg. No.</u>
	WE-1246	H-7131
	WE-1346	H-7132
Present survey →	WE-1446	H-7133 (1947)

Project CS-325

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 extends from Camas to Crown Pt.

Sheet (WE-1346) H-7132 extends from Crown Pt. to Oneonta.

Sheet (WE-1446) H-7133⁽¹⁹⁴⁷⁾ 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 (present survey)

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) 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 to present survey

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). } not applicable
to present
survey

Large gravel mining had been done on Pierce and Ives Islands, (Sheet ^{H-7133(1947)} WE-1446).

The area from the line COD-COW, Sheet ^{H-7133} 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 baring 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.

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 (1947)} 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. (*by 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 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: *See Review, par. 1.*

Shoreline and topography will be furnished by the photogrammetry sheets being compiled at the present time by the Photogrammetry Office 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
added in
Wash. Office*

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 -2550, and H-2574 can be compared in
No prior surveys cover area of present survey

a most general way only, because of extensive changes in the river bottom since 1900 - 1902.

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.

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.

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

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.

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.

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

Information on this page not applicable to present survey

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.

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.

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.

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. H-7132

or

C.Ltrs. 711 & 768 (1947)

There are no maintained ranges for navigation between Camas, Washington and Bonneville, Oregon.

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 C. Ltrs. 711 & 768 (1947)*

GEOGRAPHIC NAMES: *854*

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,

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 ^{H-7132} WE-1346 and ^{H-7133} WE-1446 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

Topographic Sheets: (con't)

(WE-H-46) T-7028b
 (WE-I-46) T-7029a
 (WE-J-46) T-7029b } applicable to H-7133 (1947)
 (WE-K-46) T-7030

Sheets "Landmarks for Charts":

4 sheets "List of Topographic Positions" T-7028a
 5 sheets " " " " T-7028b
 4 sheets " " " " T-7029a
 4 sheets " " " " T-7029b
 11 sheets " " " " T-7030

*filed with
H-7132*

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>
CL-106-32/7 Sheet No. 7	25-31 July 1944	1:5,000	Washougal, Wash. to point Reed Island.
CL-106-32/8 Sheet No. 8	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.
cover H-7133 (1947) CL-106-27/12 CL-106-12/12 Sheet No. 12 D.P. 37607-08-09	7 Sept. 1943	1:5,000	Multnomah Fall Front, Dike 30, to point west of Skamania at station CRIB U.S.E.
	7 Sept. 1943	1:5,000	Point west of Skamania at station CRIB U.S.E. to east end of Pierce Island.
	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 (NB-1146) - H-7133

Depths										Remarks
5.0	10.0	15.0	20.0	30.0	40A	40B	50A	50B	60B	
+1.0	+1.0	+0.5	0.0	-0.7	-0.9	+0.3				Vol. 1 "a" day
	+0.9	+0.2		-0.4	-0.7					(0830)
+0.5	+0.3	+0.1	0.0	-0.2	-0.9	+0.9				(1235)
	+0.2	0.0	0.0		-1.1					
			0.0							
+1.2	+1.0	+0.9	0.0	-0.2	-0.9	+0.8	-1.0	+1.0	+0.3	"b" day (1036)
	+1.0	+0.9	0.0	-0.2	-0.9	+0.8	-1.0	+1.0		Vol. 1
+0.6	+0.4	+0.3	0.0	-0.2						(1343)
	+0.4	+0.2	0.0							
			0.0							
+0.6	+0.4	+0.2	0.0	-1.0	-1.0	+0.7	-1.0	+0.4	-0.5	(1630)
	+0.3	0.0	0.0	-0.5	-1.0	+0.5	+1.2	0.0		
			0.0							
+0.8	+0.4	+0.2	0.0	-0.1	-0.6	0.0	-1.2	+0.1	0.0	"c" day (0825)
	+0.6	+0.2	0.0	0.0	-0.8	0.0	+1.0	0.0		Vol. 1
			0.0							
+0.8	+1.1	+0.8	0.0	-0.3	-1.0	+1.3	-1.1	+1.0		(1335)
	+0.5	+0.3	0.0	-0.3	-0.8	+1.0				
			0.0							
+0.6	+0.5	+0.2	0.0	-0.2	-1.0	+0.2	-1.0	+0.8	+0.2	(1555)
	+0.5	+0.1	0.0	-0.2	-1.0	+0.8	-1.0	+0.7		
			0.0	-0.2						
+0.6	+0.4	+0.1	0.0	-0.2	-0.8	+0.0	-1.0	-0.4	0.0	"a" day (0910)
	+0.4	+0.1	0.0	-0.5	-0.7	-0.1	-1.0	-0.8		Vol. 2
			0.0							
+0.3	+0.2	+0.2	0.0	-0.1	-0.2	+0.2		0.0		(1320)
	+0.2	+0.2	0.0	-0.4	-0.9	-0.1				
			0.0							
+0.6	+0.5	+0.2	0.0	-0.1	-0.7	+0.2	-0.2	0.0	0.0	(1615)
	+0.5	+0.2	0.0	0.0	0.0	+0.4	-0.3			
			0.0							
+0.5	+0.3	+0.1	0.0	-0.2	-0.8	+0.1	-1.0	0.0	-1.0	"b" day (0840)
	+0.5	+0.2	0.0	-0.3	-0.8	+0.2	-1.0	-0.8		Vol. 2
			0.0							
+0.4	+0.2	0.0	0.0	-1.0	-0.7	+1.0				(1130)
	+0.2	0.0	0.0	-0.2	-0.2					
			0.0	-0.1						
			0.0							
+0.5	+0.3	+0.2	0.0	0.0	-0.3	+1.0	-1.0	+0.1		(1437)
	+0.2	0.0	0.0	-0.5	-0.9	0.0				
			0.0							
+0.8	+0.6	+0.3	0.0	0.0	-0.4	+0.8	-0.8	+1.2		"a" day (1045)
	+0.5	+0.4	0.0	-0.5	-0.9	+0.8				Vol. 3
			0.0							
			0.0							
+0.4	+0.3	0.0	0.0	0.0	-0.3	+1.9	-0.3	+1.5		(1701)
	+0.3	+0.2	0.0	-0.7	-0.7					
			0.0							
+0.8	+0.3	+0.2	0.0	-0.3	-1.0	+0.7	-1.1	+1.0	0.0	Vol. 3 "e" day
	+0.3	+0.2	0.0	0.0	+1.2	+0.7	-1.0	0.0		(0804)
			0.0					+0.5		
+1.2	+1.0	0.0	0.0	-0.6	-0.7	+1.0	-1.0	+0.8	+0.3	(1306)
	+0.9	+0.5	0.0	-0.2	-0.8	+1.9	-1.2	+0.8		
			0.0							

Depths										Remarks
5.0	10.0	15.0	20.0	30.0	40A	40B	50A	50B	60B	
+1.2	+1.0	+0.6	0.0	-0.6	-1.3	+0.4	-1.0	0.0	-0.7	"e" day (1625)
	+1.0	+0.6	0.0	-0.7	-0.7	+1.5	-1.1	0.0		Vol. 3
			0.0							
+1.2	+0.8	+0.2	0.0	-0.5	-0.8	+0.9	-1.2	+0.1	-1.0	"f" day (0935)
	+0.9	+0.4	0.0	-0.5	-0.7	0.0	-1.2	0.0		Vol. 3
			0.0							
+0.9	+0.3	+0.2	0.0	-0.2	-0.8		-0.8	+0.4	-0.3	"g" day (0935)
	+0.4	+0.3	0.0	-0.3	-0.8		-1.2	+0.1		Vol. 3
			0.0							
+0.6	+0.1	+0.2	0.0	-0.7						
	+0.3	+0.2	0.0							
			0.0							
+0.9	+0.3	+0.1	0.0	-0.3	-1.0	+0.5	-1.6	0.0	-0.5	(1640)
	+0.6	+0.3	0.0	-0.7	-1.3	+0.1	-1.9	-0.3		
			0.0							
+0.7	+0.3	+0.2	0.0	-0.2	-0.3	+1.0	-1.0	+0.2	-0.2	"h" day (0856)
	+0.4	+0.2	0.0	-0.1	-0.7	+0.2	-1.2	0.0		
			0.0							
+0.8	+0.7	0.0	0.0	-1.0						
	+0.5	+0.2	0.0							
			0.0							
+0.7	+0.3	+0.1	0.0	-0.2	0.0	0.0	-2.2	-0.2	-1.2	
	+0.1	+0.3	0.0	-1.0	0.0	-1.3	-2.1	-1.0		
			0.0			0.0				
+19.2	+25.6	+12.5	0.0	-17.0	-35.0	+22.1	-36.9	+8.2	-0.2	TOTAL
26	52	52		50	46	43	34	35	27	15
+0.735	+0.492	+0.24	0.0	-0.34	.761	+0.514	-1.085	+0.41	-0.21	MEAN
								-1.97	-0.27	

A Scale
Vols. 1, 2, & 3

Correction Feet	Depth Feet
+1.0	1 $\frac{1}{2}$
+0.8	5 $\frac{1}{2}$
+0.6	9 $\frac{1}{2}$
+0.4	14
+0.2	18
0.0	23
-0.2	28 $\frac{1}{2}$
-0.4	33 $\frac{1}{2}$
-0.6	38 $\frac{1}{2}$
-0.8	41 $\frac{1}{2}$
-1.0	43
-1.2	45
-1.4	47
-1.6	48 $\frac{1}{2}$
-1.8	50 $\frac{1}{2}$
-2.0	52
-2.2	54
-2.4	56

A - Scale
For afternoon of "a" day Launch
No. 111 use the following:

Correction Feet	Depth Feet
+1.4	2
+1.2	7
+1.0	12 $\frac{1}{2}$
+0.8	18
+0.6	24
+0.4	30
+0.2	39 $\frac{1}{2}$
0.0	49

B - Scale
All Days

Correction Feet	Depth Feet	Correction Feet	Depth Feet
+0.8	33 $\frac{1}{2}$	-0.6	71
+0.6	40	-0.8	75 $\frac{1}{2}$
+0.4	47	-1.0	80
+0.2	53	-1.2	84 $\frac{1}{2}$
0.0	57 $\frac{1}{2}$	-1.4	89
-0.2	62	-1.6	93 $\frac{1}{2}$
-0.4	66 $\frac{1}{2}$	-1.8	98
		-2.0	102 $\frac{1}{2}$
		-2.2	107

Depths									Remarks	
5.0	10.0	15.0	20.0	30.0	40A	40B	50A	50B	60B	
+0.4	+1.0	+0.8	+0.6	+0.3	0.0	+1.7				"a" day (1619)
+1.1	+1.0	+0.8	+0.7	+0.3	+0.2					Vol. 1

FATHOMETER CORRECTIONS
Sheet (WE-1146) - H-7133

B - Scale
("a" & "b" days Vol. 2 Launch 114)

Correction Feet	Depth Feet
+0.6	33 $\frac{1}{2}$
+0.4	37 $\frac{1}{2}$
+0.2	42
0.0	46 $\frac{1}{2}$
-0.2	51
-0.4	55 $\frac{1}{2}$
-0.6	60
-0.8	64

C - Scale

Correction Feet	Depth Feet
+0.4	69
+0.2	74
0.0	78
-0.2	82 $\frac{1}{2}$
-0.4	87
-0.6	91 $\frac{1}{2}$
-0.8	96

STATISTICS

for

HYDROGRAPHIC SURVEY (WE-1146) H-7133

PROJECT CS-325

Ship HODGSON

Vol. No.	Day Letter	date	No. of Pos.	No. of H.L. Sounding	Stat. Miles Sounding	Launch No.
1	a	8/22/47	114		24.3	111
1	b	8/26/47	103		16.9	111
1	c	8/27/47	123		16.4	111
3	d	9/8/47	45		1.6	111
3	e	9/11/47	115		18.8	111
3	f	9/19/47	13		2.2	111
3	g	9/23/47	115		5.9	111
3	h	9/24/47	76		5.1	111
5	i	11/12/47	71		6.0	111
5	j	11/17/47	71		1.6	111
2	a	8/28/47	126		16.6	111
2	b	8/29/47	85		9.5	111
4	a	9/25/47	101	296	5.0	Catamaran
4	b	9/26/47	116	260	5.0	Catamaran
4	c	10/3/47	83	120	0.9	Catamaran
TOTAL			1305	666	128.2	
			1413		135.8	

Area, in square statute miles - - - - -2.18

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.

APPROVAL SHEET

Hydrographic Sheet

Columbia River

Camas, Washington to Bonneville Dam

Sheet (WE-1246) - H-7131
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

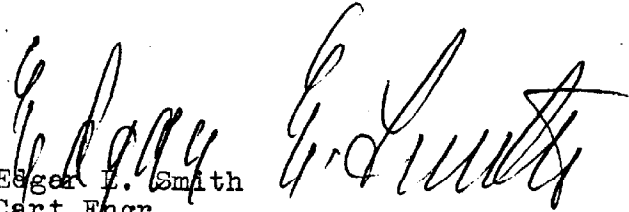
E. H. Bernstein
Lt. Comdr., USC&GS
Commanding Ship HODGSON
Chief of Party

H 7133
We 1446

Columbia River.

Projection.

The projection was made by hand on
Whatman paper. The shoreline was not added because of distortion in prints of T 8607 and T 8878. *shore line added in Washington office*


Egger L. Smith
Cart. Engr.
Seattle Processing Office

3/28/50

H 7133
We 1446

Columbia River.
Oneonta to Bonneville.

List of geographic names
penciled on smooth sheet.

Columbia River

Oregon

Multnomah County

Washington

Skamania County

Pierce Island

Ives Island

Hamilton Island

GEOGRAPHIC NAMES

Survey No. H-7133

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Oregon</u>										USGB	1
<u>Multnomah County</u>											2
<u>Washington</u>										USGB	3
<u>Stamania County</u>											4
<u>Columbia River</u>										USGB	5
<u>Bonnerville</u>											6
<u>Hamilton Island</u>											7
<u>Ives Island</u>											8
<u>Pierce Island</u>											9
<u>Oneonta</u>											10
											11
											12
											13
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											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red are approved
6-1-50. L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ^{H-7133}

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		141 ³
Number of positions checked		..73..
Number of positions revised		...!..
Number of soundings revised (refers to depth only)		..21..
Number of soundings erroneously spaced		..72..
Number of signals erroneously plotted or transferred		...0..
Topographic details	Time	..20..
Junctions	Time	..6..
Verification of soundings from graphic record	Time	..20..

Verification by *Robert C. Richard*..... Total time *105*..... Date *3/29/50*.....

Reviewed by *J.A. Dinsmore*..... Time *24 hrs.*..... Date *15 Mar. 1951*.....

Junction with H-7132 by A.J. Hoffman 3/28/51

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7133

FIELD NO. WE-1446

Oregon-Washington, Columbia River, Oneonta to Bonneville
Surveyed in August - October, 1947 Scale 1:10,000
Project No. CS-325

Soundings:

808 Fathometer
Hand lead

Control:

Sextant fixes on shore signals

Chief of Party - E. H. Bernstein
Surveyed by - R. M. Stone
Protracted by - J. R. Wheeler
Soundings plotted by - J. R. Wheeler
Verified and inked by - R. C. Richard
Reviewed by - T. A. Dinsmore, 15 March 1951
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline originates with air-photographic surveys T-8607, T-8877 and T-8878 of 1948.

The signals are from graphic control surveys T-7029b (1946-47) and T-7030a & b (1947).

2. Sounding Line Crossings

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

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

The bottom is generally irregular. There are numerous boulders and pinnacles throughout the area.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7123 (1947) on the east. The junction with H-7132 (1947) on the west will be considered in the review of that survey.

5. Comparison with Prior Surveys

There are no prior surveys of the area by this Bureau.

6. Comparison with Chart 6156 (Latest print date 2/19/51)

A. Hydrography

The charted hydrography originates with the present survey subsequent to verification but prior to review. No revisions are recommended.

B. Aids to Navigation

Present survey positions of fixed aids to navigation are in agreement with their charted positions and adequately mark the features intended.

There are no floating aids to navigation within the limits of the present survey.

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 depth of 15.5 ft. originates with a Corps of Engineers survey of December 1948 (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.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is a basic survey and no additional field work is required. Because of changeable bottom conditions, the Corps of Engineers makes periodic surveys of the river channel.

Examined and approved:

H. R. Edmonston

H. R. Edmonston
Chief, Nautical Chart Branch

H. Arnold Karo

H. Arnold Karo
~~Acting~~ Chief, Division of Charts

L. S. Hubbard

L. S. Hubbard
Chief, Section of Hydrography

W. M. Scaife

W. M. Scaife
Chief, Division of Coastal Surveys

RHG

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

24 May 1950

Division of Charts: R. H. Carstens

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 7133

Locality Oneonta to Bonneville Dam, Columbia River

Chief of Party: E. H. Bernstein in 1947
Plane of reference is Columbia River Datum, reading
1.4 ft. on tide staff at Prindle, Washington
38.4 ft. below B. M. 1 (1940)

-0.3 ft. on tide staff at Warrendale, Oregon
42.3 ft. below B. M. 1 (1940)

8.2 ft. on tide staff (downstream) at Bonneville Dam
47.4 ft. below B. M. G485

Condition of records satisfactory except as noted below:

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

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7133

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
19 Sept 50	6156	Nichols	<u>Before</u> After Verification and Review Complete application
12/17/50	6156	C.R. Wittman	Before After Verification and Review (OK) complete
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review
			Before After 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.