

7776

Diag. Cht. No. 6157

325

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. Ho-05249 Office No. H-7776

LOCALITY

State Oregon - Washington

General locality Columbia River

Locality The Dalles to Big Eddy, ~~Oregon~~

194 9

CHIEF OF PARTY

H.J. Healy

LIBRARY & ARCHIVES

DATE June 19 - 1950

024222

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. H-7776

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-7776

Field No. Ho-05249

State Oregon - Washington

General locality Columbia River

Locality The Dalles to Big Eddy, ~~Oregon~~

Scale 1:5000 Date of survey 26 april to 21 May 1949

Instructions dated 7 May 1947

Vessel Ship HODGSON

Chief of party Henry J. Healy

Surveyed by John O. Boyer

Soundings taken by ~~an aneroid~~, graphic recorder, ~~hand level, wire~~

Fathograms scaled by Ship personnel

Fathograms checked by Ship personnel

Protracted by C.E. Pedersen

Soundings penciled by C.E. Pedersen

Soundings in ~~feet~~ feet at ~~MSL~~ Columbia River Datum

REMARKS: Columbia River Datum for this area is normal pool level,
72.0 feet above mean sea level.

Verifier: See instructions for
prel. verif. in back
of this report

DESCRIPTIVE REPORT

to accompany

Hydrographic Surveys

7776

Field Nos. HO-05249 & HO-10149

Columbia River

Big Eddy to Klickitat Light, Oregon

1949

Ship HODGSON

Henry J. Healy,
Chief of Party

A. PROJECT:

This survey was made in accordance with instructions dated 7 May 1949, Reference No. 22/MEK; S-2-HO, Project No. CS-325.

These instructions cover new basic surveys of the Columbia River from Bonneville, Oregon to The Dalles, Oregon.

B. SURVEY LIMITS AND DATES:

H-7776 (1949)

Sheet HO-05249 extends from Big Eddy, at the foot of Fivemile Rapids, to 0.5 mile northwest of The Dalles. Sheet HO-10149 joins

H-7777 (1949)

sheet HO-05249 and extends to Klickitat Light where it joins sheet

H-7776 (1949)

H-7655 executed by the Ship HODGSON in October 1948.

Hydrography was begun 26 April 1949 and ended 21 May 1949.

Unusually good weather permitted field work every day except one. A fresh breeze blowing against the current often came up in the afternoons. Sometimes the choppy water caused by this breeze made it possible to do hydrography in only one direction.

The river was at flood stage during this survey. The fast water made hydrography difficult, and in some places dangerous. If this area

is ever resurveyed it is recommended that it be done during the low water period, especially the areas known as Threemile Rapids and Big Eddy.

C. VESSELS AND EQUIPMENT:

One day of hydrography was done with the Ship HODGSON. 808-A type depth recorder No. 62S was used with the transmitter and receiver units mounted in a well in the ship's hull. Hydrography with the ship proved very practical in a large unrestricted area. These areas get very choppy on windy days making launch hydrography difficult even at reduced speeds.

All other hydrography was done with Launch No. 141, a 36 foot landing barge (LCPR). 808-A type depth recorder No. 77S was used with an outboard fish. The squat and settlement for this launch were accurately determined in 1946 and found to be negligible.

D. TIDE AND CURRENT STATIONS:

The readings from two tide staffs and two portable automatic tide gages were used for this survey. (See discussion under TIDE NOTE attached.)

No current stations were occupied.

E. SMOOTH SHEET:

The smooth sheet ^{was} will be prepared at a later date by the Seattle Processing Office.

F. CONTROL STATIONS:

The positions of signals used to control hydrography were obtained from four topographic sheets ^{* Graphic Control} (Field Nos. ~~HO-A-19~~, HO-B-19, HO-C-19, and HO-D-19). These topographic sheets were controlled by second order triangulation executed by W. M. Scaife, Chief of Party, 1939.

G. SHORELINE AND TOPOGRAPHY:

The shoreline appearing on the boat sheets was obtained from various sources and was put on only as a guide for the hydrographer. It should not be used for charting purposes. The Port of The Dalles dock appear-

To be destroyed after application to H-7776 8c
Air-photo graphic surveys.

* filed in DR H-7777 (1944)

H-7776(1949)

ing as a 1:1250 overlay on sheet HO-05249 was measured with a steel tape and drawn accurately on the boat sheet.

H. SOUNDINGS:

All soundings were recorded by 808-A type portable depth recorders. Most depths were recorded in feet and scaled to the nearest 0.2 of a foot. The fathom scale was used in areas that were too deep for the foot scale, and also in a few places where the depths changed very rapidly making it difficult to keep track of the fast changing soundings in feet.

Bar checks were not made in the usual manner. The strong river currents make it difficult to keep the bar directly under the transceivers. The new method for making comparisons described by Commander Henry J. Healy in a letter to The Director dated 31 August 1948 was used. For this method a unit from an 808 fish is suspended directly under the fish, this unit is connected directly to the 808 fathometer. The sound is transmitted from the regular unit in the fish and received by the other unit lowered to various depths. Thus, the sound travels only one distance, from the transmitter to the receiver, or 1/2 the distance the sound wave travels using the standard bar. The scaled value multiplied by two, minus the initial setting of the fathometer, is the fathometer reading for the particular depth checked. This method for obtaining fathometer corrections has proven far superior to the standard bar method, especially in strong currents.

This method of computing is correct. KAC

The difficulty with this method is that it is impossible to get a check on deep soundings on the scale that they will be recorded on. For example, "D" scale ranges between 105 and 160 feet. To get recordings on this scale the unit would have to be lowered between 210 and 320 feet. Corrections for "C" and "D" scales were obtained from curves.

For example, the curve for "D" scale was drawn similar to the curve obtained from the correction for 105 to 160 feet. These soundings were recorded on the fathogram as 52 to 80 feet on "B" scale. The phase correction between the various scales was determined and the curve shifted by the amount of this phase correction.

The phase correction between the various scales was determined by soundings in depths that could be recorded on two scales. The depth was recorded several times on two scales while trying to hold the launch in the same position. This was done a number of times. Additional comparisons were obtained from changes in scales on the sounding lines.

Some soundings in the record book were reduced in the field. These soundings were corrected only for tide and were used on the boat sheet. They are not the final corrected soundings and should not be used on the smooth sheet. *soundings now or improperly reduced.*

Handlead soundings were difficult to obtain accurately because of the strong current. The only recorded handlead soundings appear with the bottom specimens. In all cases a fathometer sounding was recorded also. The fathometer sounding should be accepted as correct where it differs from the handlead sounding.

I. CONTROL OF HYDROGRAPHY:

All horizontal control of hydrography was done by the three-point fix method except that done around The Port of The Dalles dock. This area was done on a 1:1250 scale and was controlled by ranges established by taped distances. It was not practical to use a tag-line because of the strong current.

J. ADEQUACY OF SURVEY:

This survey is complete and adequate and should supersede all prior surveys.

The junction with sheet H-7655 is satisfactory and the depth curves can be drawn. *Not verified, curves left in pencil on H7776*

K. CROSSLINES:

Eight percent of crosslines were run.

No discrepancies were noted except for a portion of one line off the Port of The Dalles dock which was done on a 1:1250 scale. This area has a very soft bottom over a harder bottom. The fathogram for this area was difficult to interpret and should be examined carefully by the Processing Office.

Discrepancies in depths adjusted.

L. COMPARISON WITH PRIOR SURVEYS:

The soundings in the area between The Dalles and Big Eddy were compared with a survey made by the U. S. Engineer Office, 2nd Portland District, in 1934-5-6. In general the surveys agree very well. It appears that the soundings on the chart in this area were taken from their survey. Discrepancies between the two surveys will be discussed in Comparison with Chart. The Engineer survey was done on 1:2000 scale, and in some places has more development than on our 1:5000 survey. Also, their work was not done during the flood stage of the river, making it possible for them to get soundings in a few small areas that were too dangerous to go into during extreme high water. It is believed that a combination of these two surveys should be used for charting this area.

See TP 6 of Review

M. COMPARISON WITH CHART:

The following discrepancies were noted in comparing this survey with U. S. C. & G. S. Chart No. 6157, dated July 19, 1948.

1. At the entrance to the Klickitat River the chart shows a 22 foot channel. The boat sheet shows a controlling depth of 1 foot.
2. 0.25 miles ESE of Rowena Front Range the chart shows a 29 foot shoal. The boat sheet has 36 feet in this area.

Sheet line

Does not fall in limits of present survey

3. At Latitude 45° 40:9, Longitude 121° 16:1, the chart shows 45 feet. The boat sheet shows 36 feet.

4. At Latitude 45° 40:8, Longitude 121° 16:0 the chart shows an 18 foot shoal. The boat sheet has a least depth of 33 feet. ^{21 smooth sheet}

5. 0.9 miles NW of Squally Point Light the chart shows a wreck. The fathogram for this area were inspected carefully and no indication of the wreck was noted. A local fisherman stated that the wreck is completely covered by sand and no part of the vessel protrudes.

6. Between Squally Point and the above mentioned wreck the boat sheet shows that the charted 30 foot curve should be moved about 0.1 mile more offshore.

7. At Latitude 45° 39:5, Longitude 121° 12' the boat sheet shows the 18 foot curve to be in the approximate location of the charted 30 foot curve.

8. 0:15 mile NE of Crates Point Light the chart shows a 16 foot sounding. The boat sheet has a 2 foot sounding there. ^{1/2 smooth sheet}

9. At Latitude 45° 36:4, Longitude 121° 10:1 the chart has 21 feet as the least depth on a shoal. The boat sheet has 24 feet. ^{24 ft. subsequently charted.} _{chart has been corrected.}

10. Latitude 45° 36:26, Longitude 121° 10:4 on the chart is outside the 30 foot curve. The boat sheet shows 24 feet here. Barges are and have been for over a year anchored in this area. They probably cause the bottom to change constantly. ^{50 meters S.W of} _{an} ^{No conflicts between charted and boat sheet depths here.}

11. Depths SE of the Port of The Dalles dock have changed due to dredging. A yacht basin is being built in this area.

N. DANGERS AND SHOALS:

All newly found dangers and shoals are described above under Comparison with Chart.

O. COAST PILOT INFORMATION:

This information will be submitted as a separate report.

Does not fall in limits of present survey

P. AIDS TO NAVIGATION:

All aids to navigation were checked on topographic sheets, Nos. HO-A-49, HO-B-49, HO-C-49, and HO-D-49. A discussion of the aids will be found in the Descriptive Report for these topographic sheets. *(Graphic Control)* * Will be destroyed.

It was noted on the boat sheet that the channel is about 100 meters SE of the line determined by the Threemile Rapid Range. *See TP6B of Review*

Q. LANDMARKS FOR CHARTS:

Landmarks for charts will be submitted on Form 567, a copy of which is made a part of the Topographic Descriptive Report.

R. GEOGRAPHIC NAMES:

Geographic names are discussed in the Topographic Descriptive Report.

S. SILTED AREAS:

According to local fisherman the area around the ship wreck NW of Squally Point changes frequently. At the present time the shoal extends further offshore than it did a few years ago. *H-7777*

ENE of The Port of The Dalles dock four barges have been anchored for over a year in the center of the river. The bottom in this area is very irregular at the present time. In some places the bottom is very soft. Currents around these barges have probably caused silting and scouring of the bottom.

The bottom in front of the Port of The Dalles dock is very soft in some parts. The depths probably change from year to year.

T. TABULATION OF APPLICABLE DATA:

1. Leveling Record Books; sent to Washington Office
2. Tide Record Books; sent to Seattle Processing Office
3. Tide marigrams; sent to Seattle Processing Office
4. Hourly Heights; sent to Seattle Processing Office
5. Daily Bar Checks; sent to Seattle Processing Office
6. Abstract of Bar Checks; sent to Seattle Processing Office
7. Graph of Bar Checks; sent to Seattle Processing Office
8. Descriptive Report for Graphic Control Sheets NOs. HO-A-49, HO-B-49, HO-C-49, HO-D-49; sent to Seattle Processing Office.

Respectfully submitted,

John O. Boyer
John O. Boyer,
Lieut. (j.g.), USC&GS
Jr. H. & G. Engineer

Approved:

Henry W. Healy
Henry W. Healy,
Commander, USC&GS
Chief of Party

TIDE NOTE

to accompany

7776

Hydrographic Survey Field No. HO-05249

Columbia River

Project CS-325

The Dalles, Oregon to the Big Eddy

1949

The section of the Columbia River covered by this survey is part of the pool formed by Bonneville Dam. The datum for this pool, as determined by the U. S. Engineers, is 72.0 feet above mean sea level. All soundings were reduced to this datum.

The reducers were determined from hourly readings on staffs at The Dalles and the Big Eddy. The sheet was divided into seven zones to take care of the river's surface gradient. Each zone is clearly marked on the boat sheet.

Hourly heights are submitted on form No. 362 under separate cover.

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Staff reading corresponding to pool datum</u>
The Dalles	45° 36'.25	121° 10'.85	25.1
Big Eddy	45° 37'.22	121° 06'.86	71.9

STATISTICS

for 7776

Hydrographic Survey Field No. HO-05249

Project CS-325
Columbia River

Year 1949
Ship HODGSON

For Launch No. 141:

<u>Date</u>	<u>Day</u>	<u>Volume</u>	<u>Handlead Soundings</u>	<u>Positions</u>	<u>Stat. miles of sounding</u>
4/26/49	a	1	---	121	8.2
4/27/49	b	2	---	125	7.9
4/28/49	c	1 & 3	---	164	12.6
4/29/49	d	2	---	98	8.5
5/3/49	e	3	---	152	15.4
5/4/49	f	2 & 4	---	164	12.2
5/5/49	g	3 & 5	6	130	6.9
5/6/49	h	4	---	109	3.7
5/7/49	j	5	---	53	2.5
5/21/49	k	5	<u>2</u>	<u>31</u>	<u>1.6</u>
Totals for Sheet - - - - 8				1147	79.5

Total area of hydrography - - - 1.1 Sq. statute miles

H 7776
Ho 05249
Columbia River
The Dalles to Big Eddy.

List of geographic names
pencil on smooth sheet.

Columbia River

Klickitat County

Washington

Wasco County

Oregon

The Dalles

Three Mile Rapids

Big Eddy

Abstracts of River Level Corrections

Hydrographic Sheet HO-05249

7776

(To be entered in Tide Reducer Column in hydro record books)

Date	Time	Zone Big Eddy	Zone A	Zone B	Zone C	Time	Zone D	Zone E	Zone Dallies
4/26/49	0800 - 1200	11.6	11.1	10.6	10.1	0800 - 1200	9.6	9.1	8.6
	1201 - end	11.8	11.3	10.8	10.3	1201 - end	9.8	9.1	8.7
4/27/49	0800 - 1130	12.1	11.6	11.1	10.6	0800 - 1400	10.1	9.6	9.1
	1131 - 1430	12.2	11.7	11.2	10.7	1401 - end	10.2	9.7	9.2
	1431 - end	12.3	11.8	11.3	10.8				
4/28/49	0800 - 1430	12.2	11.7	11.2	10.7	0800 - 0830	10.1	9.6	9.1
	1431 - end	12.5	12.0	11.5	11.0	0831 - 1600	10.2	9.7	9.2
4/29/49	0800 - 1130	12.5	12.0	11.5	11.0	1601 - end	10.4	9.8	9.3
	1131 - end	12.6	12.1	11.6	11.1	all day	10.4	9.8	9.3
	0800 - 1330	14.7							
5/3/49	1331 - end	14.8				0800 - 0930	12.5	12.0	11.5
						0931 - 1000	12.6	12.1	11.6
5/4/49	0800 - 1130	15.7				1001 - end	12.7	12.2	11.7
	1131 - 1300	15.8				0800 - 1000	12.5	12.5	11.9
	1301 - 1320	15.9				1001 - 1130	12.6	12.6	12.0
	1321 - 1340	16.0				1131 - 1430	12.7	12.7	12.1
	1341 - 1430	16.1				1431 - 1615	12.9	12.9	12.2
	1431 - 1630	16.2				1616 - end	13.0	13.0	12.3
	1631 - 1700	16.3							
5/5/49					all day	12.5		12.0	
5/6/49					all day			11.5	
5/7/49					0700 - 0730			11.2	
					0731 - 0900			11.1	
					0901 - end			11.3	
5/21/49					all day			18.9	

Velocity Corrections and list of
signals removed and entered in vol. 1
of each sheet, H-7776 & H-7777. of 1949.

NON-FLOATING LANDMARKS FOR CHARTS

TO BE CHARTED
~~TO BE CHARTED~~

STRIKE OUT ONE

Longview, Washington

16 June, 1949

I recommend that the following objects which have ~~(been)~~ been inspected from seaward to determine their value as landmarks be charted on ~~(charts)~~ the charts indicated.
The positions given have been checked after listing by Adam M. Legako

Henry J. Healy

Chief of Party

STATE Columbia River, Oregon - Washington

CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION		DATUM	METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
			LATITUDE D.M. METERS	LONGITUDE D.P. METERS							
AERO	PORTLAND-SPOKANE AIRWAY BEACON NO. 7B (WASH) Fl. ev. 10 sec.	---	45-39	341.9	121-10	91.3	NA 1927	Triang.	1939	X	6157
AERO	PORTLAND-SPOKANE AIRWAY BEACON NO. 7A (WASH) Fl. G ev. 2 sec.	---	45-36	1686.3	121-10	1069.9	"	"	1939	X	6157
Overhead 18 ft. (195 max.)	Center of spotlight on transmission line poles, E side river, Grates Pt. Center of 2 poles supporting transmission line, midstream, Grates Pt.	POT *	45-38	1740.4	121-11	764.0	"	Topo HO-B-19	1949	X	6157
"	Centerline of 2 poles supporting transmission line, West side of river	MID *	45-38	1694.0	121-11	1071.2	"	"	1949	X	6157
"	THE DALLES, ST. PETER'S CHURCH SPIRE,	ACE *	45-38	(204.5)	121-12	(1236.2)	"	"	1949	X	6157
SPIRE	THE DALLES, WASCO WAREHOUSE AND MILLING CO. TANK	SPIRE H-7776	45-36	315.6	121-11	233.6	"	Triang.	1939	X	6157
TANK		H-7776	45-35	1612.8	121-10	367.2	"	"	1939	X	6157

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

* Benchmark physical not used in charting? 7 poles as noted. One benchmark & light at this point should be re-surveyed.

++ - This is old position. Aerial photo used since for mainland chart files.

HTC

HTC

APPROVAL SHEET

Hydrographic Survey H-7777(1949)
(Field Nos. HO-05249 & HO-10149)
H-7776(1949)
Columbia River

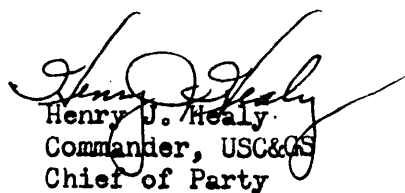
Big Eddy to Klickitat Light, Oregon

Project CS-325

The records for this hydrographic survey have been examined and found complete.

The smooth sheet will be plotted at a later date by the Seattle Processing Office.

This survey is complete, adequate in detail and is approved.


Henry J. Healy
Commander, USC&GS
Chief of Party

H 7776
Ho 05249

Columbia River
The Dalles to Big Eddy.

Processing Office Notes.

Smooth sheet.

The projection was made by hand on Whatman paper. The GP's were taken from Pages 509, 510, 546, 7, 8, & 9 of the Adjusted Triangulation for Washington. No shoreline was put on the sheet as no recent topography was available. Topographic signals are from Graphic Control sheets Ho-B-49 and Ho-C&D-49.

Discrepancy.

On the sub-plan, the soundings for positions 6j to 12j were not plotted. It is possible that differences at crossings may be caused by weak fixes or a method of control which depended on one angle at the outer ends of the lines. As the river was in flood with current perpendicular to the range lines it was probably difficult to hold the vessel exactly on the ranges all the time. We note that tag line could not be used on account of this current. We do not think that "soft bottom over hard bottom" cause misreading of the fathogram to explain the difference.

Range lines
adjusted -
crossings
adequate.

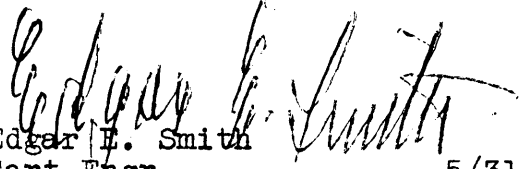
Boatsheet.

The divisions between the tide zones are marked on the boatsheet. It is also noted thereon that barges have been moored for more than a year at the positions following:

φ 45	36.36	λ 121	10.00
	36.33		10.20
	36.27		10.15
	36.26		10.30

See remarks in paragraph "S" page 7 of the report by the field party.

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


Edgar E. Smith
Cart. Engr.

5/31/50

141
133
142.134
130
132
130
135
133
12.142
144

SECTION OF
H-7777 (1949)
1:10,000
UNVERIFIED

JUNCTIONS WITH
H-7776

37' 00"

Mac (SP&SRR sema. No. 928)(d)

Cuba (USED 1940)(dm)

(d) Flu
cor. 1336
Sec
(dm)

143
143
142
139
138
139
127
98
130
130
132
138
110
153
147
7
125
126
105
123
112
112
31

Lime (USED 1940) (dm)

PORTLAND BEACON NO. 7A
SPOKANE AIRWAY
Egg (temp)
139 (landmark)

LES LIGHT
139

Steel
(USED 1940) (dm)

DALLESPORT

Tax
(center of 3 cable
crossing poles) (d)

JOINS H-7776 (1949)

Ray
(chimney) (d)

45° 36' 30"

121° 11' 00"

12' 00"

30"

30"

GEOGRAPHIC NAMES

Survey No.

H-7776

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
<u>Oregon</u>										USGB	1
<u>Wasco County</u>											2
<u>Washington</u>										USGB	3
<u>Klickitat County</u>											4
<u>Columbia River</u> ✓										USGB	5
<u>The Dalles</u> ✓											6
<u>Dallesport</u> ✓										USGB	7
<u>Threemile Rapids</u> ✓											8
<u>Covington Point</u> ✓											9
<u>Big Eddy</u>											10
											11
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											26
											27

Names underlined in red are approved. 6-21-50
L. HECK

NAUTICAL CHARTS BRANCH

HO-05249 } Report split for
 SURVEY NO. HO-10149 } surveys (H-7776
 (H-7777)

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
2 Dec 49	6157	Tuehols	Before After Verification and Review <i>applied</i> <i>only critical data from boat sheets.</i>
11/5/52	"	GHE per HPS	Before After Verification and Review <i>partial from</i> <i>smooth sheet.</i>
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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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.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7776

FIELD NO. HO-05249

Oregon - Washington, Columbia River, The Dalles to Big Eddy

Project No. CS-325

Surveyed - April - May 1949

Scale 1:5,000

Soundings:

Control:

808 Fathometer

Sextant fixes on shore signals

Chief of Party - H. J. Healy

Surveyed by - J. O. Boyer

Protracted by - C. E. Pedersen

Soundings plotted by - C. E. Pedersen

Preliminary verification - A. J. Hoffman

Verified and inked by -

Reviewed by - I. M. Zeskind, 24 October 1952

Inspected by - R. H. Carstens

1. Shoreline and Control

No contemporary shoreline for the present survey is available at this time. Sections of shoreline shown on the smooth sheet are from graphic control surveys HO-B-49 and HO-C-49 which are indicated for destruction.

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated, except in foul areas or where the swiftness of the current made development of the areas dangerous.

The bottom is very irregular. Submarine features such as shoals, deeps, ridges and foul areas contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7777 (1949) on the west. On the east the survey extends to the Dalles - Celilo Canal and to the westerly end of Fivemile Rapids. These are the limits of both the Project and the charted hydrography.

5. Comparison with Prior Surveys

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

6. Comparison with Chart 6157 (Latest print date 4/10/50)

A. Hydrography

The charted hydrography originates principally with the U. S. Corps of Engineers' surveys of 1934-35 (Bps. 32113, 32157, 32158, 32159 and 32160) and 1948-49 (Bp. 45326), with House Document 79-1-89, with Chart Letter 544 (1949) and supplemental information from boat sheets of the present survey.

A comparison between the chart and the present survey reveals, in general, good agreement in depths, except as follows:

- (1) A 19-ft. sounding was obtained on the present survey in lat. $45^{\circ} 36.50'$, long. $121^{\circ} 08.95'$ on the 17-ft. shoal charted from a Corps of Engineers' survey (Bp. 32158). The shoaler sounding from the blueprint is not considered disproved, and should be retained on the chart.
- (2) The 5-ft. sounding charted in lat. $45^{\circ} 36.10'$, long. $121^{\circ} 10.43'$, originates with a stray on a fathogram of the present survey and should actually be 11 ft. The 5-ft. sounding should be disregarded.

The present survey is adequate to supersede the charted hydrography within the common area, except in several unsurveyed areas and as noted above where the U. S. Corps of Engineers' surveys should be used to supplement the present survey.

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, except that the Rear Range Light for Threemile Rapids was moved north-eastward subsequent to the survey and is charted in accordance with Chart Letter 379 (1951). Depths of 12-13 ft. fall on this range. However, if the azimuth of the

range were decreased seven degrees, depths available along the range would be greater than 18 ft.

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

7. Condition of Survey

- a. The survey has been given only a preliminary verification in accordance with recently adopted procedure. A complete statement concerning the condition of the survey will be made after the survey has been verified.
- b. Several areas were not surveyed because of conditions dangerous to navigation.

8. Compliance with Project Instructions


The present survey adequately complies with the Project Instructions, except as noted in paragraph 7b above.

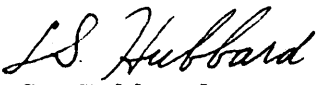
9. Additional Field Work Recommended

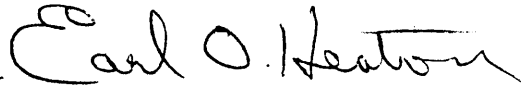
Except in the unsurveyed areas mentioned in paragraph 7b above, this is a basic survey and no additional work is recommended. Corps of Engineers' surveys are adequate for charting purposes in the areas not covered by the present survey.

Examined and approved:


H. R. Edmonston
Chief, Nautical Chart Branch


H. Arnold Karo
Chief, Division of Charts


L. S. Hubbard
Chief, Section of Hydrography


Earl O. Heaton
Chief, Division of Coastal Surveys

Hydrographic Surveys (Chart Division)

H-7776

HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

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

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

Number of positions on sheet 1147
 Number of positions checked 140
 Number of positions revised 30
 Number of soundings revised (refers to depth only) 84
 Number of soundings erroneously spaced 85
 Number of signals erroneously plotted or transferred ✓

Topographic details Time None
 Junctions Time 1

Verification of soundings from graphic record Time 4

Preliminary Inspect 10/17 by G.F. Jordan

Preliminary

TL JANSON

A. S. Hoffman

Verification by *See above* Total time 89

Inspected by A.R. Stirni 4 hrs

6 hrs
32
89
Date 10-12-51
9/3/52
11/5/51

Reviewed by *Indeskuid* Time 32 Date 10-24-52

See next page for AMC verification statistics.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7776
HO-05249

Records accompanying survey: Smooth sheets ...!...;
boat sheets; ^{1+2 overlays} sounding vols. ...5...; wire drag vols. ...0...;
Descriptive Reports ...!...; graphic recorder envelopes ...A...;
special reports, etc.
.....

The following statistics will be submitted with the cartog-
rapher's report on the sheet:

Number of positions on sheet	..1147..
Number of positions checked	..316..
Number of positions revised	..2..
Number of positions revised (refers to depth only)	..15..
Number of soundings/erroneously spaced	..11..
Number of signals erroneously plotted or transferred	..0..
Topographic details	Time ..12..
Junctions	Time ..2..
Verification of soundings from graphic record	Time ..80..
Special adjustments	Time

Verification by Robert G. Roberson... Total time 300. Date 25 August 1972
Bernie T. Davis..... 30
410
Reviewed by Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-7776
HO-05249

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

- ✓1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
- ✓2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
- ✓3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
- ✓4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
- ✓5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
- ✓6. All positions verified instrumentally were check marked in the sounding records.
- ✓7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.
- ✓8. The metal protractor has been checked within the last three months.
- ✓9. The protracting and plotting of all bad crossings were verified.
- ✓10. All detached positions locating critical soundings, rocks or buoys were verified.
- ✓11. The boat sheet was compared with the smooth sheet.

- ✓12. The spacing of soundings as recorded in the records was closely followed.
- ✓13. The bottom characteristics were shown on outstanding shoals.
- ✓14. The reduction and plotting of doubtful soundings were checked.
- ✓15. The transfer of contemporary topographic information was carefully examined. *The only available topographic information was from photos flown ten (10) years after the survey's completion. Only shoals that would have been applicable at the time of the survey ~~were~~ ^{was} applied.*
- ✓16. All junctions were transferred and overlapping curves made identical.
- ✓17. The notation "JOINS H- (1922)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
- ✓18. The depth curves have been inspected before inking. by G. F. T. & W. L. J.
B. T. D
- ✓19. All triangulation stations and transfer of topographic and hydrographic signals were checked. *Control manuscript not available*
- ✓20. Heights of rocks were checked against range of tide.
- ✓21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
- ✓22. Unnecessary pencil notes have been removed.
- ✓23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
- ✓24. The low water line and delineation of shoal areas have been properly shown.
- ✓25. Degree and minutes values and symbols have been checked.
- ✓26. Questionable soundings have been checked on the fathograms.

- ✓27. Source of shoreline and signals (when not given in report).
T-10850, T-10852, T-10854
- ✓28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
- ✓29. All aids located, with those on contemporary topographic sheets, have been shown on survey. *None on sheet (floating)*
- ✓30. Depth curves were satisfactory except as follows: *Depth curves were not shown in some areas due to insufficient information to adequately delineate bottom configuration.*
- ✓31. Sounding line crossings were satisfactory except as follows:
- ✓32. Junctions with contemporary surveys were satisfactory except as follows: *Some junction ^{used} was unverified.*
- ✓33. Condition of sounding records was satisfactory except as follows: *Poor notation in location of rock (Vol. 2, page 12). Noted "close to rock"; it was felt that this was insufficient information to plot the rock.*
- ✓34. The protracting was satisfactory except as follows:
- ✓35. The field plotting of soundings was satisfactory except as follows:
- 36. Notes to reviewer:

Verified by Robert G. Roberson

Date ~~7/72~~ 8/24/72

AMC VERIFICATION NOTES
SURVEY H-7776

GENERAL

Within the limitations caused by strong currents and flood stage conditions on the river, this appears to be an excellent basic surveys.

SHORELINE


Inconsistencies in the shoreline exist because air-photo compilations, compiled at 1:10,000 and expanded to 1:5,000 scale, were made from photos taken about 10 years after the hydrographic survey was made. Natural and man-made changes were evident in all areas and shoreline was not transferred at all on the North bank from Long. 121-08'-30" to the Eastward where the Dalles dam was constructed. Contemporary shoreline was already transferred to the smooth sheet from the graphic control sheets mentioned in paragraph P. of this report, and in paragraph no. 1 of the Review Section report. Since the G.C. sheets were indicated for destruction the shoreline limits transferred were marked with penciled notes on the smooth sheet. Enlarged copies of the air-photo compilations are being forwarded with the smooth sheet.

Hydrography was contained within the shoreline applied, except at the locations mentioned below where minus soundings were left in light pencil.

Lat. 45-36.1'	Long. 121-10.0'
45-36.3'	121-11.0'
45-36.4'	121-08.3'

Near Port of the Dalles several piles and a pier were not transferred from the air-photo compilations as the hydro records did not mention their existence at the time of the survey.

Norfolk, Va.
August 29, 1972


Hugh L. Proffitt
Chief, Verification Br., AMC

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RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

20 December 1950

Division of Charts: R. H. Carstens

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 7776

Locality Columbia River, The Dalles to Big Eddy

Chief of Party: H. J. Healy in 1949

Plane of reference is Columbia River (Pool) Datum or 72.0 ft. above Sea-level
25.1 ft. on tide staff at The Dalles Datum of 1929, reading
16.2 ft. below B. M. B 25 (1921)

71.9 ft. on tide staff at Big Eddy

64.5 ft. below B. M. G 25 (1921)

Condition of records satisfactory except as noted below:

E. C. McKay
Section

Chief, ~~Division of Tides and Currents.~~

