

7895

Diag. Cht. Nos. 6153 & 6154

25-339

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. HC-1451 Office No. 4-7895

LOCALITY

State WASHINGTON - OREGON

General locality COLUMBIA RIVER

Locality ST. HELENS AND COLUMBIA CITY, OREGON

1945

CHIEF OF PARTY

H. G. Conerly

LIBRARY & ARCHIVES

DATE Oct 9 - 1951

7895

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-7895

Field No. HO-1451

State Washington - Oregon ✓

General locality Columbia River ✓

Locality St. Helens and Columbia City, Oregon ✓

Scale 1:10,000 ✓ Date of survey May 1951 ✓

Instructions dated 23 Sept. 1950 ✓

Vessel HODGSON ✓

Chief of party Horace G. Conerly ✓

Surveyed by J. O. Boyer ✓

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

Fathograms scaled by Ship's personnel

Fathograms checked by Ship's personnel

Protracted by L. R. Whitney

Soundings penciled by D. E. Fisher

Soundings in ~~fathoms~~ feet at ~~MEAN LOWER LOW WATER~~ Columbia River Datum ✓  
(Mean Lower Low Water during Lowest River Stages)

REMARKS:  
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DESCRIPTIVE REPORT

to accompany

- Hydrographic Survey No. H-7892, (HO-11518)
- No. H-7893, (HO-1251)
- ~~No. H-7894, (HO-1351)~~
- No. H-7895, (HO-1451) *present survey*
- No. H-7901, (HO-1551)
- No. H-7902, (HO-1651)
- No. H-7903, (HO-1751)

Columbia River  
Longview, Washington to Vancouver, Washington

Ship HODGSON  
Horace G. Conerly  
Chief of Party

A. PROJECT:

Project CS-339

This hydrographic survey was made in accordance with the following instructions.

1. Original instructions, 22/MEK, S-2-HO dated 24 May, 1949
2. Supplemental instructions, 22/MEK, S-2-HO dated 21 Sept., 1950
3. Related letter - Letter from Director 22/MEK, S-1-HO, dated 22 May, 1951.

B. SURVEY LIMITS AND DATES:

Sheet H-7892 extends from the mouth of Cowlitz River to coffin rock. Hydrography was begun 20 April, 1951 and ended 30 April 1951.

Sheet H-7893 extends from coffin rock to the downstream tip of Deer Island. Hydrography was begun 17 April 1951, and ended 19 April 1951.

Sheet H-7894 <sup>Combined with H-7893</sup> extends from the downstream tip of Deer Island to the upstream tip of Deer Island. Hydrography was begun 1 May 1951, and ended 18 May 1951.

*Present survey* → Sheet H-7895 extends from the upstream tip of Deer Island to Bachelor Shoal. Hydrography was begun 22 May 1951, and ended 13 June 1951.

Sheet H-7901 extends from Bachelor Shoal to Willow Point. Hydrography was begun 11 June 1951, and ended 22 June 1951.

Sheet H-7902 extends from Willow River to the mouth of the Willamette River. Hydrography was begun 28 June 1951, and ended 23 July 1951.

Sheet H-7903 extends from the mouth of the Willamette River to the Interstate Bridge, Vancouver Washington. Hydrography was begun 27 July 1951, and ended 17 August 1951.

B. CONT.:

Junction is made with prior surveys, H-7129 1946, H-7121 1946, H-7742 1949, H-7743 1949, and H-7744 1949, H-7129 is 1:8000 scale the remaining surveys are 1:5000 scale. See Review, par. 4.

C. VESSEL AND EQUIPMENT:

Hydrography was done with launch No. 160, a 36 foot landing craft (L.C.P.R.). 808-A type depth recorder No.77 was used with the fish mounted on the keel.

The launch returned to the Ship HODGSON at the end of each working day.

D. TIDES AND CURRENTS:

See discussion under tide note attached.

Three 75 hour current observations were made at the following locations:

- (1) St. Helens, Oregon  
Latitude 45 52.2' ✓ Verifier - add this station  
Longitude 122 47.7'
- (2) Downstream from Willow Point  
Latitude 45 46.1'  
Longitude 122 45.9'
- (3) Mouth of the Willamette River  
Latitude 45 38.6'  
Longitude 122 46.4'

One current station was occupied for 27 hours upstream from Hewlett Point at Latitude 45 40.5' Longitude 122 46.1'

Current observations in the mouth of the Willamette River were made when the Columbia River had about 15½ feet of flood water. The current was flowing upstream in the Willamette River at a velocity of about one knot to flow down the Multnomah Slough.

E. SMOOTH SHEETS: processed by field party

The projections were made by hand on the Ship HODGSON. ✓

F. CONTROL STATIONS: (Located By)

- 1, Triangulation observed through 1949.
- 2, Triangulation observed by H. G. Conerly in 1951.
- 3, Topographic and photo stations located in 1949.
- 4, Army Engineer triangulation observed through 1950. This was converted from lambert coordinates to Geographic Positions.
- 5, Stations located by hydrographic methods.

↑  
see H-7901

G. SHORELINE AND TOPOGRAPHY:

Part of the shoreline and topography was done by photogrammetry and is to be added to the sheets later. The rest is from photogrammetry done in previous years. *Review, par. 1.*

The low water line was determined wherever possible. Its entire delineation was prevented by steep banks, log rafts, and docks.

H. SOUNDINGS:

Soundings were measured with an 808 A type portable depth recorder, with a few leadline soundings added.

See fathometer report under separate cover *filed with H-7901* for method of obtaining corrections to be applied to fathometer readings.

I. CONTROL OF HYDROGRAPHY:

Hydrography was controlled by three point fixes taken with sextants to shore objects.

J. ADEQUACY OF SURVEY:

The survey is considered to be adequate.

K. CROSSLINES:

About 8% of crosslines were ran.

Soundings on the Vancouver upper range line which was a crossline do not check, as the Army Engineers dredge was working in this area during the survey. A copy of their survey, made after dredging, will be furnished the Supervisor M W District.

L. COMPARISON WITH PRIOR SURVEYS:

Prior surveys are H-6245 1937, H-6246 1937, *covers present survey* ~~H-6247 (1937)~~, H-6332 1938, and H-6333 1938. During the lapse of time between prior surveys and the present survey many changes have occurred from spring freshets and dredging. This survey should supesede all prior surveys.

Satisfactory junction was made with surveys *H-7893 and H-7901 (1951)* ~~H-7744 1949, H-7743 1949, H-7742 1949, H-7129 1946, and H-7121 1946.~~

M. COMPARISON WITH CHART:

Comparison with chart 6153, print date Sept. 18, 1950.

All following survey depths reduced for river level corrections only and are not those shown on the Smooth Sheet.

Latitude 46-03-31", Longitude 122 53' 07" 21 foot depth charts shows 30 feet.

Latitude 46 04' 15", Longitude 122 53' 33" 14 foot depth chart shows 18 feet.

*Not within limits of present survey*

M. CONT.:

Latitude 46 03' 06", Longitude 122 53' 07" dock now in ruins.  
 Latitude 46 02' 35", Longitude 122 52' 58" small boat float.  
 Latitude 46 01' 58", Longitude 122 52' 10" chart shows dolphin,  
 only stub remains.  
 Latitude 46 01' 29", Longitude 122 51' 55" chart shows dolphin,  
 dolphin no longer exists.  
 Latitude 46 01' 21", Longitude 122 51' 45" chart shows dolphin,  
 dolphin no longer exists.  
 Latitude 46 00' 57", Longitude 122 51' 17" least depth 34 feet.  
 Latitude 46 00' 18", Longitude 122 50' 43" dock now in ruins  
 only stub piles remain.  
 Latitude 45 57' 30", Longitude 122 49' 14" chart shows dolphin  
 only stub remains.  
 Latitude 45 57' 17", Longitude 122 49' 12" chart shows dolphin,  
 only stub remains.  
 Latitude 45 55' 51", Longitude 122 48' 46" chart shows dolphin,  
 dolphin no longer exists.  
 Latitude 45 55' 24", Longitude 122 48' 32" 15 feet depth chart  
 shows 20 feet.  
 Latitude 45 56' 03", Longitude 122 48' 15" 29 feet depth in  
 middle of dredged channel. Channel was dredged by the Army Engineers  
 after survey.  
 Latitude 45 55' 03", Longitude 122 48' 27" 26 feet depth near  
 dredged channel, chart shows 31 feet depth.

Not within limits of present survey

Comparison with chart 6154, print Sept. 4, 1950.

Latitude 45 51' 08", Longitude 122 46' 56" shoalest depth <sup>smooth sheet - 26</sup> 24 1/2 feet. Depth is near dredged channel.

Latitude 45 41' 15", Longitude 122 45' 15" channel 6 feet shoaler than channel depth shown on chart. This area was being dredged by the Army Engineers during Sept., 1951. This is a area of large amount of dredging in spite of strong currents.

Not within limits of present survey

The area from Latitude 45 38.9', Longitude 122 45.5' to Latitude 45 38.3', Longitude 122 44.6' is a log mooring area. An attempt was made to show the offshore dolphins and piles, but there are numerous ones inside, that were not located. The area on both sides of the northwestern tip of Hayden Island is the same.

N. DANGERS AND SHOALS:

All newly found dangers and shoals are discussed above under comparison with chart, or are clearly shown on the sheet.

O. COAST PILOT INFORMATION:

This information was submitted as a separate report.

P. AIDS TO NAVIGATION:

All aids to navigation are listed on form 567 which is a part of this report. See C.L. 678 (1951)

The geographic positions of the following lights do not agree with

P. CONT.:

the positions shown in the 1951 Light List: Willow Light 23, light list No. 1136; Reeder Point Light 28, light list No. 1139; Knapp Point Light, light list No. 1133; Bachelor Point Light 13, light list No. 1130; and St. Helens Jetty Light 79, light list No. 1112.

Termini of two cable crossings are not shown on latest edition of chart 6153. (see smooth sheet) H-7892 (1951)

Latitude 46 02' 20"	Longitude 122 52' 22"
Latitude 46 02' 10"	Longitude 122 52' 54"
Latitude 46 02' 20"	Longitude 122 52' 22"
Latitude 46 02' 17"	Longitude 122 52' 52"

Q. LANDMARKS FOR CHARTS:

All landmarks for charts are listed on form 567 which is a part of this report. *filed with H-7903 (1951)*

R. BY-PRODUCT INFORMATION:

In areas near Vancouver, Wash. the river bottom is very rough. In these areas the water apparently moves the sand like wind driven sand dunes, since the steep side is almost invariably downstream.

T. TABULATION OF APPLICABLE DATA:

1. Tidal records for Longview, Kalama, Columbia City, Henrici, Knapp Point, Kelly Point, and Vancouver, forwarded to Washington.
2. Triangulation previous to 1951, and triangulation done by HODGSON in 1951.
3. Fathometer report forwarded to Washington. *See H-7901 (1951)*
4. List of Geographic Positions of stations computed from coordinates furnished by U. S. E.D. *See H-7901 (1951)*

Respectively submitted,  
*Dan L. Wheeler*  
Dan L. Wheeler  
Ensign, USC&GS

Approved and Forwarded  
*Horace G. Conerly*  
Horace G. Conerly  
Lt. Comdr., USC&GS

STATISTICS

FOR

HYDROGRAPHIC SURVEY FIELD NO. HO-1451  
REGISTRY NO. H-7895

LAUNCH NO. 160

DATE	DAY	VOL.	HANDLEAD SOUNDINGS	POSITIONS	STAT. MILES OF SOUNDINGS
5/22/51	a	1	--	62	9.2
5/23/51	b	2&3	--	258	44.4
5/24/51	c	3	--	171	25.4
5/25/51	d	1	--	164	26.8
5/30/51	e	3&4	--	84	15.5
5/31/51	f	4&5	--	259	46.6
6/5/51	g	5	11	177	20.8
6/6/51	h	6	--	184	22.4
6/7/51	j	5&7	54	147	10.3
6/8/51	k	6	8	3	0.1
6/13/51	l	6	17	18	0.6
Total for Sheet - - -			90	1527	222.1

Total area of hydrography - 4.1 sq. stat. miles



## TIDE NOTE

Hydrographic Sheets: H-7892, H-7893, ~~H-7894~~, H-7895,  
H-7901, H-7902, H-7903

The tides were recorded by portable automatic tide gages. The staffs were connected to USC&GS bench marks and referred to the Columbia River Datum.

The tide gages were established so that two gages could be used to determine the river level corrections on all but one sheet. Hydrographic sheet H-7893 was a small sheet and the Kalama tide gage was used directly for river level corrections. The remaining sheets were zoned for a 0.2 foot differences between adjacent zones. This difference however was as much as 0.4 foot on a few occasions.

During April and early part of May some tide action was noted, but as the river rose this action became less, and the tide curves approached horizontal lines during June and July. In early August some tide action was again becoming apparent.

Daylight Saving Time, or the 105 meridian west, was used from 1600 April 29, 1951 to 2400 September 29, 1951. Prior to and succeeding the above dates Pacific Standard Time or the 120 meridian west was used.

Tide stations were maintained at the following locations during the time of work in each area:

Station	Latitude	Longitude	Staff Reading in Feet Corresponding to C.R.D.
Longview, Wash.	46 06.5'	122 57.6'	-2.8
Kalama, Wash.	46 00.6'	122 57.4'	0.0
Columbia City, Or.	45 43' 32"	122 48' 19"	-3.5
Henrici Landing	45 48.7'	122 47.8'	-4.75
Knapp Landing	45 44' 31"	122 45' 22"	-10.75
Kelley Point	45 39.1'	122 45.8'	-9.55
Vancouver, Wash.	45 37.6'	122 40.5'	-0.90

## ABSTRACTS OF RIVER LEVEL CORRECTIONS

Hydrographic Sheet Field HO-1451  
Registry H-7895

DATE	TIME 105M.W.	ZONE COLUMBIA CITY	TIME 105M.W.	ZONE A	Time 105M.W.	ZONE B
5/22/51	0700-end	17.0	0700-end	17.2	0700-1500 1501-end	17.4 17.2
5/23/51						
5 3/51	0700-1500 1501-end	17.0 16.8	0700-1500 1500-end	17.2 17.0	0700-1500 1501-end	17.4 17.2
5/24/51	0700-end	17.0	0700-end	17.2	0700-1600 1601-end	17.4 17.2
5/25/51	0700-0910 0911-end	17.0 17.2	0700-0915 0916-end	17.2 17.4	0700-0935 0936-end	17.4 17.6
5/30/51	0700-0900 0901-1400 1401-end	17.2 17.0 17.2	0700-0900 0901-1400 1401-end	17.4 17.2 17.4	0700-end	17.6
5/31/51	0700-1230 1231-end	17.2 17.0	0700-1230 1231-end	17.4 17.2	0700-1200 1201-end	17.6 17.4
6/5/51	0700-1200 1201-1600 1601-end	15.0 14.8 14.6	0700-1430 1431-end	15.0 14.8	0700-1300 1301-end	15.2 15.0
6/6/51	0700-1200 1201-1600 1601-end	14.6 14.4 14.2	0700-1000 1001-1430 1431-end	14.8 14.6 14.4	0700-1300 1301-end	14.8 14.6
6/7/51	0700-1200 1201-end	14.2 14.0	0700-1440 1441-end	14.4 14.2	0700-1450 1451-end	14.4 14.2
6/8/51	0700-1230 1231-end	14.0 13.8	0700-end	14.0	0700-end	14.2
6/13/51			0800-1100	12.4		

Fathometer Corrections

H-7895  
Sheet Field HO-1151

Fathometer No. 77

Launch CS-160

"A" Scale		"B" Scale	
Fath-Depth Feet	Correction Feet	Fath-Depth Feet	Correction Feet
0.0 - 3.0	+1.6	32.5 - 38.2	+1.4
3.1 - 7.1	+1.4	38.3 - 43.9	+1.2
7.2 - 11.1	+1.2	44.0 - 49.7	+1.0
11.2 - 15.6	+1.0	49.8 - 55.4	+0.8
15.7 - 21.0	+0.8	55.5 - 61.1	+0.6
21.1 - 26.7	+0.6	61.2 - 66.8	+0.4
26.8 - 32.5	+0.4	66.9 - 72.5	+0.2
32.6 - 38.2	+0.2	72.6 - 78.2	0.0
38.3 - 43.9	0.0	78.3 - 84.0	-0.2
44.0 - 49.7	-0.2		
49.8 - 55.4	-0.4		
55.5 - 61.1	-0.6		
"C" Scale			
66.8 - 72.5	+0.8		
72.6 - 78.2	+0.6		
78.3 - 84.0	+0.4		
84.1 - -	+0.2		

Note: Corrections between "A" Scale and "B" Scale taken from Fathometer Corrections for Sheet HO-1151, HO-1251 and HO-1351.

APPROVAL SHEET

Hydrographic Survey No.	H-7892	HO-1151
	H-7893	HO-1251
	H-7894	HO-1361
	H-7895	HO-1451 ✓
	H-7901	HO-1551
	H-7902	HO-1651
	H-7903	HO-1751

Columbia River

Longview, Washington to Vancouver, Washington

Project CS-339

The records for these hydrographic sheets have been examined and found to be complete.

The smooth sheets have been examined and found to be complete.

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

*Horace G. Conerly*  
Horace G. Conerly  
Lt. Comdr., USC&GS  
Commanding Ship HODGSON

Name Used in Hydro- graphic Survey	Source of Station
ABE ✓	Volume ①-3
BAN	Volume ①-3
BOY ✓	Volume 1
CAL ✓	Reg. No. H-789①-3
CAP ✓	Caples Dike Lt., Reg. No. H-789①-3
CAR ✓	Volume 1
CEM	1949 (USE)
CITY	Columbia City Light 76, 1949 (U.S.E.)
COW ✓	Volume ①-3
--	Columbia City Range Rear, 1949 (U.S.E.)
CRU	Volume ①-3
DIKE	Dike 27.9 Dolphin, 4th Order Triang. 1951
DOCK	1949 (U.S.E.)
DOG ✓	Volume ①-3
DOL 1	4th Order Triang. 1951
DOL 2	4th Order Triang. 1951
DOL 3	4th Order Triang. 1951
DOL 4	4th Order Triang. 1951
DOL 5	4th Order Triang. 1951
DOL 6	4th Order Triang. 1951
DOL 7	4th Order Triang. 1951
DUCK	Duck Club 6 Lt., 4th Order Triang. 1951
EAT	Dike 27.7 Dolphin, 4th Order Triang. 1951
EEL ✓	Volume ①-3 <i>cuts to Eel Vol. 4, Pg. 12</i>
EYE ✓	Volume ①-3 <i>" " " Eye " " " "</i>
FAT	Dike 27.8 Dolphin, 4th Order Triang. 1951
FIR	ST. HELENS FIRTEX STACK (OREG.), 1937
FISH ✓	Volume 1
5 Lt.	St. Helens Channel 5 Lt., 4th Order Triang. 1951
FLAG	ST. HELENS, COLUMBIA COUNTY COURTHOUSE CUPOLA FLAGSTAFF, 1913
FRONT	Columbia City Range Front, 4th Order Triang. 1951
GAL ✓	Volume ①-3
GAS ✓	Volume 1
GIL ✓	Volume ①-3
--	H-12 RM No. 3 (U.S.E.), 1951
--	H-62 (U.S.E.) (OREG.), 1912
HAM ✓	Volume ①-3
IKE	Dike 27.3 Dolphin, 4th Order Triang. 1951
JAP	Volume 1-3
JET	St. Helens Jetty Lower No. 77 Lt., 4th Order Triang. 1951
LEM	Lemonts Lt., 1949 (U.S.E.)
LOW	4th Order Triang. 1951
MAN ✓	Volume ①-3
MUD ✓	Volume ①
--	Multnomah Channel North Entrance Range Front, 1949 (U.S.E.)
--	Multnomah Channel North Entrance Range Rear, 1949 (U.S.E.)
NED ✓	Volume 1 - <i>Dol.</i>
NET ✓	Volume ①-3
NO. 78	St. Helens Jetty Lt. No. 78, 4th Order Triang. 1951
NO. 79	St. Helens Jetty Lt. No. 79, 4th Order Triang. 1951
NO. 80	St. Helens Dike Light No. 80, 4th Order Triang. 1951
N.W. ✓	Volume 1

--		Old Front Range, 4th Order Triang. 1951
1 LT.		St. Helens Channel 1 Lt., 4th Order Triang. 1951
OUT	✓	Volume 1-3
PAR	✓	Volume 1
PER		Reg. No. 7894, Deer Island Upper Dike Lt.
POLE	✓	Volume 1-3
RAG	✓	Volume 1
RAM		St. Helens Range Front, 4th Order Triang. 1951
--		Rap, 1949 (U.S.E.)
REAR	REAR	Warrior Rock Range Rear, 4th Order Triang. 1951
D	✓ RED	Volume 1-3
ROCK		Warrior Rock Range Front, 4th Order Triang. 1951
ROCKY		1949 (U.S.E.)
--		St. Helens Range Rear, 4th Order Triang. 1951
SAW	✓	Volume 1
S.E.	✓	Volume 1
SIGN	✓	Volume 1-3
6 LT.		Multnomah Channel 6 Lt., Volume 1
SLO		Deer Island Slough Dolphin, 1949 (U.S.E.)
--		Store Gable, 1949 (U.S.E.)
TALL		ST. HELENS TALL STACK, 1937
TANK		St. Helens Tank, 4th Order Triang. 1951
TEE	✓	Volume 1-3
--		TEMPO, 1951
3 LT.		St. Helens Channel 3 Lt., 4th Order Triang. 1951
--		TOPO, 1951
TOW		Dike 27.1 Dolphin, 4th Order Triang. 1951
VENT	✓	Volume 1-3
WAR		Warrior Rock 2 Lt., 4th Order Triang. 1951
--		Warrior Aux., (U.S.E.), 4th Order Triang. 1951
WAS		1949 (U.S.E.)
WATER		1949 (U.S.E.)

NOTE: Stations not having a hydro name were used in control only.

R4C

# TIDE NOTE FOR HYDROGRAPHIC SHEET

~~XX~~

11 October 1951

Division of Charts: R. H. Carstens

Plane of reference approved in 7  
volumes of sounding records for

HYDROGRAPHIC SHEET 7895

Locality St. Helens - Columbia City, Columbia River

Chief of Party: H. G. Conerly in 1951  
Plane of reference is Columbia River Datum, reading  
-3.5 ft. on tide staff at Columbia City  
77.8 ft. below B. M. J30 = 78(USGS) (1898)  
  
-4.7 ft. on tide staff at Henrici Landing  
20.8 ft. below BM 2(1938)

Condition of records satisfactory except as noted below:

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

GEOGRAPHIC NAMES

Survey No. H-7895

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Oregon</u>										BTX	1
<u>Washington</u>										"	2
<u>Columbia River</u>										"	3
<u>Multnomah Channel</u>										"	4
<u>Lewis River</u>										"	5
<u>Lake River</u>											6
<u>St. Helens</u>											7
<u>Columbia City</u>											8
											9
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											M 234

Names underlined  
in red are approved  
10-10-51  
L.H.C.



Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7895....

Records accompanying survey:

Boat sheets .....; sounding vols. ..7...; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls 3 env.;  
 special reports, etc. 1 Smooth Sheet; 1 Title Sheet;.....  
 .....

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

	Final Verification	PRELIMINARY
Number of positions on sheet	1533	
Number of positions checked	131 9/8	100 ✓
Number of positions revised	13	15 ✓
Number of soundings revised (refers to depth only)	None	10 ✓
Number of soundings erroneously spaced	10	—
Number of signals erroneously plotted or transferred	10 hrs	✓
Topographic details	Time 32 hrs	✓
Junctions	Time 1 hr	✓
Verification of soundings from graphic record	Time 3 hrs	✓

Verification by *D. J. Kennon*..... Total time *230 hrs* Date *1-16-56*

Reviewed by *J. A. Dinsmore*..... Time *24 hrs* Date *25 July 1952*

<i>Stini - 10 hours</i>	<i>Pre - 60</i>
<i>PRELIMINARY - WERLING - 50 hr</i>	<i>final - 230</i>
<i>Curves - Thomas - 16 hrs</i>	<i>Curves 16</i>
	<i>Total 306</i>
<i>Addendum AR Stini 24 hrs</i>	

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

REGISTRY NO. H-7895

FIELD NO. HO-1451

Oregon-Washington, Columbia River, St. Helens and Columbia City

Project No. CS-339

Surveyed in May-- June 1951

Scale 1:10,000

Soundings:

Control:

808 Fathometer  
Hand lead

Sextant fixes on shore signals

Chief of Party - H. G. Conerly  
Surveyed by - J. O. Boyer  
Protracted by - L. R. Whitney  
Soundings plotted by - D. E. Fisher  
Preliminary Verification by - W. Werline  
Verified and inked by -  
Reviewed by - T. A. Dinsmore, 25 July 1952  
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline and topographic detail will be applied when the verification of the survey is completed. Air-photographic surveys T-8651, T-8652, T-8655 and T-8656 of 1945 cover the area of the present survey.

The origin of the signals is given in the Descriptive Report.

2. Sounding Line Crossings

Considering the irregularities in the river bottom, depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated. The irregularities in the river bottom are caused by dredging operations and current action.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7893 (1951) on the north and H-7901 (1951) on the south.

5. Comparison with Prior Surveys

a. H-1711 (1886) 1:10,000

This early survey has been compared with and is superseded by the survey of 1937 which is discussed in the succeeding paragraph. Further consideration of the early survey is, therefore, deemed unnecessary in the present review.

b. H-6247 (1937) 1:10,000

The present survey falls within the area covered by this prior survey. A comparison between the prior and present surveys reveals numerous changes in the river bottom.

Examples of appreciable changes in depth in the common area are shown in the following comparison:

<u>Latitude</u>	<u>Longitude</u>	<u>Prior Depth</u>	<u>Present Depth</u>
45°53.68'	122° 47.92'	30	17-18
45°52.08'	122° 46.96'	12	36-37
45°51.51'	122° 47.22'	23-29	9-11
45°51.12'	122° 47.03'	73	56-61
45°50.49'	122° 47.21'	75	38
45°50.17'	122° 47.28'	23	36

The main river channel is dredged periodically by the Corps of Engineers and the spoil is dumped in the shoal areas. This together with the spring freshets which cause a shifting of the bottom are the principal factors contributing to the changes that have taken place in the area.

The present survey is adequate to supersede the prior surveys within the common area.

6. Comparison with Charts 6153 and 6154 (Latest print date 5/12/52)

A. Hydrography

Charted hydrography originates principally with the present survey prior to verification and review. No important differences are noted between the charted depths and depths on the present survey.

B. Aids to Navigation

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

C. Dredged Channels

The project depth in the main river channel is 35 ft. The present survey shows numerous soundings ranging in depth from 27-34 ft. within the limits of the marked channel. Dredging accomplished since the present survey was made has probably restored the project depth.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was done by the field party. The preliminary verification of the smooth sheet indicates that the work was accurately plotted.
- c. The preliminary verification of this survey was confined to critical soundings, discrepancies at crossings and junctions, and an inspection for conflicts with topographic detail. Completion of the verification, inking and application of the shoreline is deferred until some future date, at which time the inspection of the junctions, curves and shoreline will be completed by the reviewer.


8. Compliance with Project Instructions


The survey adequately complies with the Project Instructions.


9. Additional Field Work

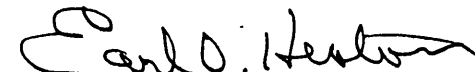
This is a very good basic survey and no additional field work is required.

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

Addendum to Review  
H-7895 (1951)

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Inked by - D. J. Kennon  
Review Addendum by - A. R. Stirni 4/13/56  
Inspected by - R. H. Carstens

The verification of this survey is now complete. The shoreline has been applied from reviewed air-photographic surveys T-8651 (1945-47), T-8652 (1945-47), T-8654 (1945-47), T-8655 (1945-47), T-9511-(1948-51) and revisions from minus soundings of the present survey.

Junctions with Contemporary Surveys

Complete junctions are deferred pending the reviews of surveys H-7893 (1951) on the north and H-7901 (1951) on the south.

Comparison with Charts 6153 and 6154 (print date 3/19/56)

The charted hydrography originates principally with the present survey after preliminary verification and review, supplemented by surveys of the Corps of Engineers, made subsequent to the present survey. Numerous inshore dolphins on the present survey have never been charted. Attention is directed to the following:

<u>Latitude</u>	<u>Longitude</u>	<u>Chart</u>	<u>Present Survey</u>
45°50.76'	122°47.77'	not charted	dolphin
45°50.90'	122°47.72'	dolphin	not on survey
45°50.92'	122°47.88'	not charted	dolphin
45°50.56'	122°47.93'	not charted	4 dolphins
45°52.68'	122°48.03'	not charted	3 dolphins
45°53.03'	122°48.23'	not charted	2 wrecks
45°52.19'	122°47.60'	not charted	dolphin
45°50.96'	122°47.69'	not charted	piling
45°51.08'	122°47.27'	not charted	2 dolphins
45°51.20'	122°47.33'	not charted	dolphin

The rock awash charted in lat. 45°50.72', long. 122°47.28' from the present survey after preliminary verification and review has been revised to a 6-ft. sounding and should be disregarded.

Addendum to Review  
H-7895 (1951), page two

The positions of the aids to navigation located on the present survey are in substantial agreement with charted aids and adequately mark the features intended. St. Helen's Light No. 78 at lat.  $45^{\circ}52.90'$ , long.  $122^{\circ}47.80'$ , has been replaced by a red and black lighted buoy, as noted in H.O.N.M., 19, 1952 and other lights have been re-numbered in accord with H.O.N.M., 4, 1951.

Dredged channels are fully discussed in the original review.

Condition of Survey

Completion of the verification reveals that the smooth plotting was well done.

Approved:

Chief, Chart Division

# NAUTICAL CHARTS BRANCH

SURVEY NO. H-7895

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
10-15-51	6154	R.H. Andros	Before <del>After</del> Verification and Review <i>Completely applied</i>
11-8-51	6153	C.R. Wittmann	Before <del>After</del> Verification and Review
5/28/54	6153	J.F. Walker	<del>Before</del> <sup>Prelim.</sup> After Verification and Review <i>Completely (Review read)</i>
6/1/54	6154	J.F.W.	<del>Before</del> <sup>Prelim.</sup> After Verification and Review <i>Review read</i>
			Before After Verification and Review
			Before After Verification and Review
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			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.