

7746

Diag. Cnt. No. 6153

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. HO-05549 Office No. H-7746

LOCALITY

State Washington - Oregon

General locality Columbia River

Locality Longview to Walker Island

194 9

CHIEF OF PARTY

H.J.Healy

LIBRARY & ARCHIVES

DATE April 9 - 1950

7746

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 7746

Field No. Ho 05549

State Washington-Oregon ✓

General locality Columbia River ✓

Locality Longview to Barlow Point ✓
Walker Island

Scale 1/ 5 000 ✓ Date of survey Aug. 8 to 17, 1949 ✓

Instructions dated May 24, 1949

Vessel Launch 141 attached to Ship HODGSON

Chief of party Henry J. Healy ✓

Surveyed by J.O. Boyer ✓

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

Fathograms scaled by Ship personnel

Fathograms checked by Ship personnel

Protracted by Thos. G. Taxelius

Soundings penciled by Thos. G. Taxelius

Soundings in ~~fathoms~~ feet at ~~XXXXXXXXXX~~ Columbia River datum. ✓
(Mean Lower Low Water at Lowest River Stages)

REMARKS: Smooth sheet and plotting by
Seattle Processing Office. ↑
use in title

DESCRIPTIVE REPORT

to Accompany Hydrographic Survey

Field Nos. HO-05149, HO-05249, HO-05349, HO-05449, HO-05549, HO-05649, and HO-05749 H-7746(1949)

Columbia River

Sandy Island to Ormas Island

Scale 1:5,000

1949

SHIP HODGSON

Henry J. Healy,
Chief of Party.

A. Project:

This survey was made in accordance with instructions dated 24 May 1949, Project No. OS-339; and letter from Acting Director dated 16 June 1949, Subject: Bar Check

These instructions cover new basic hydrographic surveys in the Columbia River from Sandy Island to Cathlamet Bay, as requested (in part) by the U. S. Navy.

B. Survey Limits and Dates:

Sheet HO-05149 extends from Dike 36.3, thru the Sandy Island West Channel, to 0.5 mile downstream from Coffin Rock. Hydrography was begun 22 June and ended 21 July 1949.

Sheet HO-05249 covers the upstream half of Carroll Channel and its south entrance. Hydrography was begun 18 July 1949.

Sheet HO-05349 joins sheet HO-05249 and extends to Rainier, Oregon. Hydrography was begun 25 July and ended 2 August 1949.

} other project surveys }

Sheet HO-05449 joins sheet HO-05349 and covers the river from bank to bank to Dibbles Dike. Hydrography was begun 2 August and ended 15 September 1949. } other project surveys

H-7746(1949) H-7745(1949)

Sheet HO-05549 joins sheet HO-05449 and covers the river from bank to bank to 0.5 mile downstream from Barlow Pt. Hydrography was begun 8 August and ended 17 August 1949.

H-7747(1949) H-7746(1949)

Sheet HO-05649 joins sheet HO-05549 and covers the river from bank to bank to the downstream end of Fisher Island. Hydrography was begun 6 September and ended 14 September 1949.

Sheet HO-05749 joins sheet HO-05649 and covers the river from bank to bank to Bunker Hill Light. Hydrography was begun 23 August and ended 1 September 1949. } other project surveys

C. Vessel and Equipment:

Hydrography was accomplished with Launch No. 141, a 36-foot landing barge (LCPR). 808-A type depth recorder No. 778 was used with an outboard fish. The squat and settlement for this launch were accurately determined in 1946 and found to be negligible.

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

D. Tides and Currents:

Tides were recorded on portable automatic tide gages installed at Kalama, Longview, and Stella. (See discussion under TIDE NOTE attached.)

A 75-hour series of current observations were made at each of the following three locations:

- (1) Vicinity of Deer Island Point:
Latitude 45° 58' 48"
Longitude 122° 50' 05"

(2) Near Longview Bridge:

Latitude 46° 06' 32"
Longitude 122° 57' 58"

(3) Downstream from Oak Point:

Latitude 46° 10' 57"
Longitude 123° 11' 08"

E. Smooth Sheet:

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

F. Control Stations:

The position of signals used to control sheets HO-05149, HO-05249, and HO-05349 were obtained from topographic sheets HO-J-49, HO-K-49, HO-L-49, HO-M-49, HO-N-49. These topographic sheets are controlled primarily by triangulation executed by Scife in 1937, Healy in 1949, and the U. S. Army Engineers.

not applicable to present survey

The positions of signals for sheets HO-05449, HO-05549, HO-05649, and HO-05749 were obtained from photographs. The positions were put on the boat sheets by the Portland Photogrammetric Office.

H-7746(1949)

Review, par. 1.

The planetable sheets were necessary due to the late arrival of the photographs. They delayed progress for several weeks because it was necessary to get triangulation into Carroll Channel to control the topo sheets. Nearly the entire ship's force was used on this triangulation for a period of two weeks. Progress was slow because towers were necessary. This delay probably would not have been necessary if photographs had been available.

not applicable to present survey

G. Shoreline and Topography:

The shoreline and topography will be obtained from photographs by the Portland Photogrammetric Office. Review, par. 1.

H. Soundings:

Soundings were measured with an 808-A type portable depth recorder. The depths were measured in feet and scaled from the fathograms to the nearest 0.2 of a foot. A few soundings were measured from a skiff with a pole. A few soundings on shoals were obtained with a leadline.

The fathometer corrections were obtained by lowering a unit instead of the conventional bar. This method was approved by the Acting Director in a letter dated 16 June 1949. The method is described in detail in the Descriptive Report for Klickitat Light, Oregon to the Big Eddy submitted in June 1949. (Desc. Report for H-7776, 1949)

It will be noted that the fathometer corrections fell into three groups. This is due to the fact that the fathometer was worked on between these periods. The corrections for each group were determined and used.

I. Control of Hydrography:

All horizontal control of hydrography was done by the three-point fix method^{*} (except a small area around the dock of the Port of Longview.) This area was done on a 1:2,500 scale and controlled by ranges and a tag-line. * falls on H-7745 (1949)

Signals located from photographs proved satisfactory for the control of hydrography on this 1:5,000 scale as no "jumps" were noticed on the best sheets.

J. Adequacy of Survey:

This survey is complete and adequate and should supersede all prior surveys. (except as noted in Review, par. 6 A.)

Indications of shoaling in some portions of the channel were not developed as it was known that the U. S. Army Engineers were to dredge the channel in the area. The areas to be dredged are clearly indicated on the boat sheets. Dredging operations are now in progress.

K. Crosslines:

Eight percent of crosslines were run and no discrepancies were noted on the boat sheets.

L. Comparison with Prior Surveys:

A hydrographic survey of the channel for this portion of the Columbia River was made by the U. S. Army Engineers in the spring of 1949 on the following 1:5,000 scale sheets:

	Kelama - - - - -	March 11, 1949	
	Debelower Bar - - - - -	March 14, 1949	
superseded by	Slaughters Bar - - - - -	March 17, 1949	(Bps. 45891 & 46473)
	Walker I. - La Du Bars - - - - -	March 18, 1949	(Bp. 45484)
	Stella - Fisher Bar - - - - -	March 22, 1949	

The U. S. Army Engineers' survey and this survey agree very closely.

A hydrographic survey of this area was made on a scale of 1:10,000 by H. W. Knox in 1937 on Sheet Nos. 6246, 6245, 6244 and 6243. It is noted that since this survey the shoals around islands have changed and generally speaking there is now less water in the back channels than in 1937.

Review,
par. 5 b.

M. Comparison with Chart No. 6153:

At Latitude 46° 00.43', Longitude 122° 52.33' chart shows 1 foot, boat sheet shows minus 1 foot.

At Latitude 46° 00.43', Longitude 122° 52.28' charts shows 51 feet, boat sheet shows 14 feet.

At Latitude 46° 03.65', Longitude 122° 52.05' chart shows piling. These piling still exist.

At Latitude 46° 05.3', Longitude 122° 52.7' chart shows 2 dolphin and row of piling. These piling and dolphins still exist.

At Latitude 46° 06.90', Longitude 122° 58.43' chart shows 17-foot shoal. A 27-foot sounding was obtained at the time hydrography was done in this area. At a later date a dredge worked in this area and now there is nothing shoaler than 30 feet.

At Latitude 46° 07.⁹⁰~~86~~', Longitude 122° 59.⁴~~75~~' chart shows 18 feet. The ^{smooth} ~~boat sheet~~ has ^{19-20 ft. depths} ~~a 22-foot sounding~~ here. This area is not completely developed on the boat sheet. The U. S. Army Engineer' show 18 feet here. It is recommended that the 18 foot sounding remain on the chart. (Concur)

At Latitude 46° 08.99', Longitude 123° 02.72' chart shows 9 feet, boat sheet shows 14 feet.

At Latitude 46° 09.8', Longitude 123° 03.5' chart shows large piling area. This area still exists.

At Latitude 46° 09.5', Longitude 123° 03.2' chart shows dolphin. This dolphin no longer exists.

At Latitude 46° 09.7', Longitude 123° 03.8' chart shows a lone pile.

other project surveys

Review, par. 6 A.

other project surveys

This pile no longer exists.

At Latitude 46° 10.8', Longitude 123° 06.2' chart shows a lone pile. This pile no longer exists.

At Latitude 46° 10.9', Longitude 123° 06.4' chart shows 12 feet, best sheet shows 11 feet.

N. Danger and Shoals:

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

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-attached
C.L. 859 (1949)
~~to this report.~~

Q. Landmarks for Charts:

All landmarks for charts are listed on Form 567-attached
C.L. 859 (1949)
~~to this report.~~

R. Geographic Names:

Geographic names are discussed in the Topographic Report for this area.

S. Silted Areas:

It was noted that the back channels are gradually being filled with sand. The bottom characteristic for these areas is hard fine sand in most instances.

T. Miscellaneous:

The western side of Cottenwood Island and the southern end of the dike at the eastern entrance to the back channel between Walker Island and Oregon are used as spoil areas for

other project surveys

the U. S. Army Engineers' dredge. Soundings in these areas will change frequently.

In this area divers are constantly clearing the river fishing lanes of snags. These snags are usually towed to a shoal area near the shore and left. Most shoal areas close to the shore are very foul because of this.

V. Tabulation of Applicable Data:

1. Descriptive Report for Graphic Control Sheets; sent to Seattle Processing Office.
2. Coast Pilot Report; sent to Washington Office.
3. Airphoto Report; sent to Seattle Processing Office.
4. Leveling Record Books; sent to Washington Office.
5. Tide Marigrams; sent to Washington Office.
6. Daily Bar Checks; sent to Seattle Processing Office.
7. Abstract of Bar Checks; sent to Seattle Processing Office.
8. Graphs of Bar Checks; sent to Seattle Processing Office.
9. Recovery Notes; sent to Seattle Processing Office.
10. Description of recoverable topographic stations; sent to Seattle Processing Office.

Respectfully submitted,

/s/ John G. Boyer,
Lieut. (j.g.), USCGCS
Jr. H&S, Engr.

Approved for Commander Henry J. Healy,
Chief of Party

by Paul Taylor,
Lt. Comdr., USCGCS
Exec. Officer, Ship HODGSON

APPROVAL SHEET
Columbia River
Sandy Island to Grims Island
Project GS-339
1949

The records for this hydrographic survey have been examined and found to be 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 for Commander Henry J. Healy, Chief of Party.

/s/ Paul Taylor

Paul Taylor
Lt. Comdr., USCGS
Exec. Officer, Ship RODGSON

TIDE NOTE

to accompany

Hydrographic Survey Field Nos. HO-05149, 05249,
05349, 05449, 05549, 05649, and 05749

Columbia River

Project GS-339

Sandy Island to Grims Island

1949

The tide reducers for this section of the Columbia River were determined from portable tide gage recordings at Kalama, near the upstream extremity of the work; Longview, near the center of the area; and Stella, near the downstream extremity of the work. The gages were referred to the Columbia River Datum as established by the U. S. Army Engineers'.

The area was divided into seven zones, one zone for each sheet. The small difference in heights and times between the various gages showed that additional zones were not necessary.

Comparison of Simultaneous Observations at Kalama(A), Longview(B), and Stella(C):

	HHW	LOW	HLW	LLW
Time Difference (A-B) hr.	0.30	0.25	0.48	0.82
Height Difference (A-B) ft.	-0.70	-0.55	0.14	0.28
Time Difference (C-B) hr.	-0.58	-0.53	-0.81	-0.98
Height Difference (C-B) ft.	0.20	0.16	-0.56	-0.57

The reducers for each sheet were determined graphically. Tide curves were drawn for the gage on either side of the work. The reducers were obtained from a third curve drawn between the two plotted curves. The distances between the third curve and the other two are proportionally the same as the distances between the center of the hydrographic sheet and the tide gages.

The reducers for Sheet HO-05149 were taken directly from the Kalama gage, 05449 directly from Longview gage and 05749 directly from Stella gage.

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Staff Reading Corresponding to Columbia River Datum</u>
Kalama	46° 00.5'	122° 50.8'	0.0
Longview	46° 06.5'	122° 57.5'	1.1
Stella	46° 11.4'	123° 07.6'	0.5

H-7745 Ho-05449
 → H-7746 (1944) Ho-05549
 H-7747 Ho-05649

Columbia River
 below Longview

Processing Office Notes

Smooth Sheets. The projections were made by hand on
 Whatman paper. The topography and topographic signals
 were transferred by reflecting projector from the
 sources shown below:

		present survey ↓	
	H-7745	H-7746	H-7747
Ho-N-49	X		
² T-9655			X
² 9656			X
² 9657			X
² 9658		X ✓	X
² 9659	X	X ✓	
² 9660	X	X ✓	
² 9661	X		

Hydrographic Sta. PIL. Located by strong sextant fix with
 check angle Vol. 2 Pg. 51. It plots near a pile located by
 air-photo. It may be a corrected location for the pile
 or a different object. (Presumed to be the pile shown 6 meters westward
 dolphin shown on T-6259)

Sand Ridges. Attention is called to sand ridges in the
 river bottom. They occur chiefly in the wider channels
 and lay across the river current. The fathograms give a
 fine record of these features. The variations in depth
 from trough to crest run up to ten feet.

Junctions. Good.

/s/ Edgar E. Smith
 Cart. Engr.
 Seattle Processing Office
 3/15/50

FATHOMETER CORRECTIONS

Sheet Nos. HO-05449
HO-05549

Depth (feet)	"A" Scale Correction (feet)
0 - 3.2	* 0.8
3.3 - 7.4	+ 0.6
7.5 - 19.0	+ 0.4
19.1 - 27.0	+ 0.2
27.1 - 33.0	0.0
33.1 - 41.0	- 0.2
41.1 - 55.0	- 0.4

Depth (feet)	"B" Scale Correction (feet)
35.0 - 38.5	+ 1.0
38.6 - 90.0	+ 0.8

Depth (feet)	"C" Scale Correction (feet)
70.0 - 87.0	+ 1.4
87.1 -	+ 1.2

LEAD LINE CORRECTION

Depth (feet)	Correction (feet)
0 - 10.0	0.0
10.1 - 16.6	- 0.2
16.7 - 110.0	- 0.4

BOTTOM SNAPPER CORRECTION

Depth (feet)	Correction (feet)
0 - 12.2	0.0
12.3 - 24.1	+0.2
24.2 - 33.2	+0.4
33.3 - 35.6	+0.6
35.7 - 53.8	+0.8
53.9 - 64.9	+1.0
65.0 - 90.6	+1.2

TIDE REDUCERS

Longview Gage
and Stella Gage

Sheet HO-05549

8 August 1949

2.2 ft. to 1336
 2.4 " " 1350
 2.6 " " 1402
 2.8 " " 1412
 3.0 " " 1421
 3.2 " " 1429
 3.4 " " 1438
 3.6 " " 1447
 3.8 " " 1457
 4.0 " " 1508
 4.2 " " 1518
 4.4 " " 1530
 4.6 " " 1542
 4.8 " " 1556
 5.0 " " 1611
 5.2 " " 1630
 5.4 " " 1654

9 August 1949

3.8 ft. to 0845
 3.6 " " 0909
 3.4 " " 0928
 3.2 " " 0951
 3.0 " " 1014
 2.8 " " 1037
 2.6 " " 1103
 2.4 " " 1126
 2.2 " " 1152
 2.0 " " 1236
 1.8 " " 1330
 2.0 " " 1358
 2.2 " " 1412
 2.4 " " 1422
 2.6 " " 1432
 2.8 " " 1441
 3.0 " " 1450
 3.2 " " 1459
 3.4 " " 1510
 3.6 " " 1521
 3.8 " " 1529
 4.0 " " 1538
 4.2 " " 1549
 4.4 " " 1559
 4.6 " " 1610
 4.8 " " 1621
 5.0 " " 1636
 5.2 " " 1652

10 August 1949

4.0 ft. to 0838
 3.8 " " 0858
 3.6 " " 0920
 3.4 " " 0942
 3.2 " " 1006
 3.0 " " 1032
 2.8 " " 1058
 2.6 " " 1123
 2.4 " " 1149
 2.2 " " 1215
 2.0 " " 1244
 1.8 " " 1400
 2.0 " " 1415
 2.2 " " 1427
 2.4 " " 1440
 2.6 " " 1451
 2.8 " " 1502
 3.0 " " 1510
 3.2 " " 1519
 3.4 " " 1528
 3.6 " " 1537
 3.8 " " 1546
 4.0 " " 1555
 4.2 " " 1605
 4.4 " " 1615
 4.6 " " 1628
 4.8 " " 1642

11 August 1949

4.2 ft. to 0843
 4.0 " " 0904
 3.8 " " 0926
 3.6 " " 0950
 3.4 " " 1012
 3.2 " " 1032
 3.0 " " 1058
 2.8 " " 1118
 2.6 " " 1145
 2.4 " " 1212
 2.2 " " 1257
 2.0 " " 1306
 1.8 " " 1412
 2.0 " " 1448
 2.2 " " 1504
 2.4 " " 1516
 2.6 " " 1526
 2.8 " " 1535
 3.0 " " 1545
 3.2 " " 1553
 3.4 " " 1602
 3.6 " " 1611
 3.8 " " 1620
 4.0 " " 1630
 4.2 " " 1639
 4.4 " " end

12 August 1949

4.6 ft. to 0830
 4.4 " " 0848
 4.2 " " 0905
 4.0 " " 0924
 3.8 " " 0942
 3.6 " " 1002
 3.4 " " 1023
 3.2 " " 1045
 3.0 " " 1106
 2.8 " " 1133
 2.6 " " 1200
 2.4 " " 1224
 2.2 " " 1252
 2.0 " " 1325
 1.8 " " 1445
 2.0 " " 1506
 2.2 " " 1518
 2.4 " " 1528
 2.6 " " 1538
 2.8 " " 1547
 3.0 " " 1557
 3.2 " " 1605
 3.4 " " 1613
 3.6 " " 1621
 3.8 " " 1628
 4.0 " " 1638

15 August 1949

3.8 ft. to 0935
 3.6 " " 1000
 3.4 " " 1026
 3.2 " " 1050
 3.0 " " 1115
 2.8 " " 1136
 2.6 " " 1158
 2.4 " " 1224
 2.2 " " 1255
 2.0 " " 1328
 1.8 " " 1412

16 August 1949

3.6 ft. to 1025
 3.4 " " 1058
 3.2 " " 1124
 3.0 " " 1153
 2.8 " " 1221
 2.6 " " 1251
 2.4 " " 1324
 2.2 " " 1400
 2.0 " " 1447

A.S.

TIDE REDUCERS

Sheet HO-05549

Longview Gage
and Stella Gage

17 August 1949

2.8 ft.	to	0947
3.0	" "	1112
2.8	" "	1200
2.6	" "	1230
2.4	" "	1306
2.2	" "	1345
2.0	" "	1426
1.8	" "	end

A.M.S.

H 7746
Ho 05549

Columbia River

List of geographic names
penciled on smooth sheet.

Columbia River

Washington

Cowlitz County

Oregon

Columbia County

Walker Island

Barlow Point

Dibblee Point

STATISTICS

FOR

Hydrographic Survey Field No. HO-05549

7746

Launch No. 141

DATE	DAY	VOL.	HANDLEAD SOUNDINGS	POSITIONS	STAT. MILES OF SOUNDINGS
8/8/49	a	1	--	108	9.2
8/9/49	b	1&2	--	216	28.0
8/10/49	c	2	81	209	12.9
8/11/49	d	2&3	28	205	27.1
8/12/49	e	3&4	--	275	31.0
8/15/49	f	4	3	113	9.1
8/16/49	g	5	10	132	11.2
8/17/49	h	5	1	124	11.2
Total for Sheet - - -			123	1382	139.7

Total area for hydrography - - - - 1.9 square miles.

GEOGRAPHIC NAMES

Survey No. H-7746

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
<u>Oregon</u>										USGB	1
<u>Columbia County</u>											2
<u>Washington</u>										USGB	3
<u>Cowlitz County</u>											4
<u>Columbia River</u>										USGB	5
<u>Dibblee Point</u>										"	6
<u>Walker Island</u>										"	7
<u>Barlow Point</u>										"	8
<u>Mt. Coffin</u>											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27
											M 234

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

L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7746

Records accompanying survey:

Boat sheets ¹.....; sounding vols. ⁶.....; wire drag vols.;
 bomb vols.; graphic recorder rolls ^{2 envel.}.....;
 special reports, etc.

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

Number of positions on sheet		1382	
		57	
Number of positions checked		2	
Number of positions revised		8	
Number of soundings revised (refers to depth only)		17	
Number of soundings erroneously spaced		0	
Number of signals erroneously plotted or transferred		36	
Topographic details	Time	30 1/2	
Junctions	Time	10	
Verification of soundings from graphic record	Time	16 1/2	Date Oct 13, 1950
Verification by <i>Arthur B. Marbois</i>	Total time	24 hrs.	Date 20 Dec. 1950
Reviewed by <i>J. A. Dinsmore</i>	Time		Date

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7746

FIELD NO. HO-05549

Oregon-Washington, Columbia River, Longview to Walker Island
Surveyed in August 1949 Scale 1:5,000
Project No. CS-339

Soundings:

808 Fathometer
Hand lead
Pole

Control:

Sextant fixes on shore signals

Chief of Party - H. J. Healy
Surveyed by - J. O. Boyer
Protracted by - T. G. Taxelius
Soundings plotted by - T. G. Taxelius
Verified and inked by - A. B. Markowitz
Reviewed by - T. A. Dinsmore, 20 December 1950
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline and signals originate with the ^{*}unreviewed manuscripts of air-photographic surveys T-~~8~~258, T-~~8~~259 and T-~~8~~260 of 1949. The fixes for supplementary hydrographic signals are recorded in the sounding volumes of the present survey.

2. Sounding Line Crossings

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

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated except where dolphins, piling and snags prevented the development of portions of the inshore depth curves.

Except in the shoal flats, the bottom is generally uneven. Marked irregularities occur in and adjacent to the channels. Depths along the axis of the main river channel range from 31 to 83 feet.

** Revised to agree with reviewed manuscript
on 6/30/53, by Gearhardt, ckh by Stirni
GFI.*

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7745 (1949) on the southeast (upstream) and H-7747 (1949) on the northwest (downstream).

5. Comparison with Prior Surveys

- a. H-1368 (1877) 1:10,000 H-1724 (1885) 1:10,000
H-1369 (1877) 1:10,000

These early surveys have been superseded by H-6244 (1937). Further comparison and consideration of the early surveys in the present review is deemed unnecessary.

- b. H-6244 (1937) 1:10,000

This prior survey covers the area of the present survey. A comparison between the prior and present surveys reveals many bottom changes.

The most conspicuous change in the main river has occurred in the shoal area off Mt. Coffin. Prior depths of 1-6 ft. on this shoal have since been dredged to depths of 17-36 ft.

Considerable shoaling has taken place throughout the back channel south of the river islands. Examples of major shoaling are indicated in the following comparison:

<u>Prior</u> <u>Depth</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Present</u> <u>Depth</u>
17	46° 07.20'	123° 00.04'	3
19	46° 07.57'	123° 01.23'	12
21	46° 07.68'	123° 01.95'	11
6	46° 08.32'	123° 02.48'	1-2

Extensive shoreline accretion is noted in the islands southeast of Walker Island. These islands have enlarged to almost twice their prior area.

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

Numerous Corps of Engineers surveys have since superseded the above prior survey in the charting of the greater portion of the area under consideration. Except for the rocks awash which have been retained in lat. 46° 07.5', long. 122° 59.9', from H-6244, the prior

survey contains no other information worthy of retention and is superseded by the present survey for charting purposes.

6. Comparison with Chart 6153 (Latest print date 9/18/50)

A. Hydrography

Charted hydrography originates with the previously discussed survey supplemented by various surveys by the Corps of Engineers, the latest of which are October and November 1949 (Bps. 45891 and 46473). Only a few soundings from the present survey were applied to the chart prior to verification and review.

Because of bottom changes, numerous discrepancies are noted between present depths and depths charted from the various other sources.

Attention is directed to the 18-ft. sounding (RK appended) charted in lat. $46^{\circ} 07.90'$, long. $122^{\circ} 59.74'$, from a prior survey by the Corps of Engineers which falls in depths of 19-20 ft. on the present survey. Inasmuch as the 18-ft. sounding has been carried forward to Corps of Engineers surveys subsequent to the present survey, the sounding should be retained as charted.

The present survey supersedes all charted information except that originating with Corps of Engineers' surveys which are subsequent to the present survey.

A comparison has also been made with Chart 3362 (1st Edition of July 1950). The charted information originates with the present survey prior to verification and review supplemented by subsequent surveys by the Corps of Engineers. No revisions to the charted information are recommended.

B. Dredged Channels

The project depth in the main river channel is 35 ft. The present survey shows numerous soundings ranging in depth from 30-34 ft. within the limits of the marked channel. Inasmuch as dredging has been accomplished since the time of the present survey, it is presumed that the project depth has been subsequently restored.

C. Aids to Navigation

The lighted buoy located in lat. $46^{\circ} 07.74'$, long. $122^{\circ} 59.63'$, on the present survey is charted about 70 meters northwest of the survey position. Either position appears to adequately serve the purpose intended.

The lighted buoy charted in lat. $46^{\circ} 07.18'$, long. $122^{\circ} 59.10'$, was located on the adjacent survey H-7645 (1949) about 200 meters SSW of the charted position. The review of H-7645 considers the relative merits of the survey and charted positions.

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

7. Condition of Survey

- a. The sounding records are complete; the Descriptive Report covers all matters of importance.
- b. The smooth plotting was well done.
- c. The topographic signals originating with air photographic surveys T-6258, T-6259 and T-6260 were erroneously inked in green instead of red at the Processing Office. The color of the signals has not been revised in the Washington Office.


8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

The survey is considered to be basic and no additional field work is recommended. This is a highly changeable area over which the Corps of Engineers make periodic surveys.

Examined and approved:



R. W. Knox

Chief, Division of Charts



H. R. Edmonston

Chief, Nautical Chart Branch



I. S. Hubbard

Chief, Section of Hydrography



W. M. Scaife

Chief, Division of Coastal Surveys

BHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

13 April 1950

Division of Charts: R. H. Carstens

Plane of reference approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 7746

Locality Walker Island, Columbia River

Chief of Party: H. J. Healy in 1949
Plane of reference is Columbia River Datum, reading
1.2 ft. on tide staff at Longview
25.2 ft. below B. M. W 317 (USE)

0.5 ft. on tide staff at Stella
22.4 ft. below B. M. 1 (1937)

Condition of records satisfactory except as noted below:

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

