7862

Diag. Cht. No. 6152

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. HO-1450 Office No. H-7862

LOCALITY

State OREGON—WASHINGTON

General locality LOWER COLUMBIA RIVER

Locality WALLACE ISLAND TO CRIMS ISLAND

1950

CHIEF OF PARTY

W. H. Bainbridge

LIBRARY & ARCHIVES

DATE Sept 27—1951

B-1870-1 (1)

7862

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-7862

Field No. HO-1450

State Oregon - Washington

General locality Lower Columbia River

Locality Wallace Island to Crims Island

Scale 1 : 10,000 Date of survey 17 October to 31 October 1950

Instructions dated 24 May 1949, 24 March 1950, 21 September 1950

Vessel Ship HODGSON

Chief of party W, H. Bainbridge

Surveyed by Paul Taylor, J. O. Boyer, R. F. Lanier

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

Fathograms scaled by Ship Personnel

Fathograms checked by Ship Personnel

Protracted by D.A.Langland & J.R.Wheeler

Soundings penciled by J.R.Wheeler

Soundings in ~~fathoms~~ feet at ~~MLW MLLW~~ Columbia River Datum
(Mean Lower Low Water During Lowest River Stages)

REMARKS: and are true depths

U. S. GOVERNMENT PRINTING OFFICE 693019

DESCRIPTIVE REPORT

to accompany

Hydrographic Survey Sheets H-7815, H-7816, H-7817 & H-7862

Columbia River

Project CS-339

Scale 1:10,000

Ship HODGSON

W. H. Bainbridge
Chief of Party

A. Project:

This survey was made in accordance with instructions dated 24 May 1949, 24 March 1950, and 21 September 1950, and letter from Acting Director dated 16 June 1949, Subject: Bar Check.

These instructions cover new basic hydrographic surveys in the Columbia River from Vancouver to Cathlamet Bay.

B. Survey Limits and Dates:

Sheet H-7815 joins Sheet H-7720 (1949) at the southeastern end of Hunting Island and 1 mile southeast of Bugby Hole and extends to Skamokawa, Washington and 1 mile northeast of Clifton, Oregon. Hydrography was begun on 29 May 1950 and ended 29 June 1950. In a small area off Skamokawa which was used as a dredge spoilage after hydrography was completed was resurveyed on 31 August 1950.

Sheet H-7816 joins Sheet H-7815 and extends to Jim Crow Pt., Washington. Hydrography was begun on 6 July 1950 and ended 3 August 1950.

Sheet H-7817 joins Sheet H-7816 and extends to Harrington Pt., Washington where it joins Sheet H-7180. Hydrography was begun 4 August 1950 and ended 1 September 1950.

Present survey →

Sheet H-7862 joins Sheet H-7748 at Bunker Hill Light and extends to the western end of Wallace Island where it joins Sheet H-7720. Hydrography was begun 17 October 1950 and ended 31 October 1950. During this time there was very little good hydrographic weather and some time was lost each day due to haze and fog. Part of the work was done in heavy rain.

C. Vessel and Equipment:

Hydrography on Sheets H-7815 and H-7816 was accomplished with Launch No. 141, a 36-foot landing barge (LCP)R. 808-A type portable 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.

Hydrography on Sheets H-7817 and H-7862 was done with Launch No. 141 and LaunchNo. 134. Launch No. 134 is a 24-foot Navy Plane Personnel Craft.

808-A type portable depth recorder No. 628 was used with the sound unit located in the after bilge. Launch No. 134 was used primarily for sounding the back sloughs and shoal water. Squat and settlement were negligible at the speed at which hydrography was done.

The launches returned to the Ship HODGSON anchored at various places on the working grounds, at the end of each day. The Ship HODGSON returned to the Port of Longview each weekend for water and supplies while hydrography was done on sheets H-7815 and 7862. While work was done on Sheets H-7816 and H-7817 water and supplies were obtained at the Port of Astoria.

D. Tides and Currents:

Tides were recorded on portable automatic tide gages installed at Stella, County Line, Cape Horn, Cathlamet, Skamokawa, Brookfield, and Altoona, Washington and Aldrich Point and Knappa, Oregon. See TIDE NOTE which is part of this report.

Two 75-hour series of current observations were made from the stern of the Ship HODGSON using a Price Current Meter, at 3 depths, and a current pole. Observations made at the following locations:

(1) Vicinity of Altoona:
Latitude 46° 15' 39"
Long. 123° 38' 51"

(2) Vicinity of Hunts Mill Point:
Latitude 46° 11' 41"
Long. 123° 25' 50"

} not on present survey

E. Smooth Sheet:

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

F. Control Stations:

Most hydrographic signals were located from air photographs and plotted on the boat sheet by the Portland Photogrammetric Office. The photographs were controlled primarily by 1913, 1935, 1936, and 1950 triangulation. Some additional signals were located with sextant fixes by the hydrographic party, and a few questionable signals plotted from the photos were relocated with sextant fixes. (See also Processing office addendum)

G. Shoreline and Topography:

The shoreline and topography will be obtained from Shoreline Manuscripts Nos. T-9266, T-9267, T-9268, T-9269, T-9272, and T-9510, (1949) prepared by the Portland Photogrammetric Office. T-9254

Note: Underscored sheets apply to pres. survey

H. Soundings:

Soundings were measured with two 808-A type portable depth recorders. 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. Areas containing log rafts were sounded with a leadline while walk-

ing the logs. Soundings taken by shoal-walking parties were estimated to the nearest 0.25 foot from marks on boots.

The fathometer comparisons were made for Launch No. 141 by lowering a unit as approved in letter from Acting Director dated 16 June 1949. The fathometer comparisons for Launch No. 134 were made in the conventional manner using a bar. Corrections were taken from a mean curve drawn for each launch for each sheet.

I. Control of Hydrography:

All horizontal control of hydrography was done by the three-point fix method. The signals located from photographs were satisfactory for the most part. However, some discrepancies were discovered, particularly on Sheets H-7817 and H-7862. Several signals on each of these sheets were relocated by sextant fixes. In relocating the signals the horizon was closed when possible; in the cases where this was not possible three point fixes with check angle were taken.

On Sheet H-7817 the original photo location of signals JAP and PEG were found to be in error after some hydrography had been done. Positions using JAP from "a" thru "h" day and positions using PEG from "a" thru "g" day are in error on the boat sheet by a small amount. Some of these positions were replotted to make certain the area was adequately covered.

J. Adequacy of Survey:

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

K. Crosslines:

About 10% of crosslines were run. No discrepancies were noted.

L. Comparison with Prior Surveys: *See Review, par. 5.*

Locality	1941. Smooth Sheet	1935 Survey
Elliot Pt. 46° 15!6 123° 36!9	65 foot deepest. Hole is filling in.	76 foot deepest.
Harrington Pt. 46° 15!75 123° 40'	Area S of Harrington Pt. has been completely changed due to dredging. Least depth 6 feet.	Least depth 12 ft.
Miller Sands 46° 15!3 123° 37!2	Least depth - 3 feet. (2' Smooth sheet) The size of this shoal area has increased.	Least depth 4 feet.
		1936 Survey
S of Pillar Rock 46° 15' 123° 35'	Sand bar bares. This area has shoaled considerably.	16 ft.
46° 14' 123° 35'	7 ft. This area has shoaled considerably.	17 ft. 1936 survey generally deeper in this vicinity.

Not within limits of H-7862

NW entrance to Cathlamet Channel 46° 13!3 123° 25!7	Least depth 5 ft. Shoal extends further N than shown by prior surveys	
46° 12!9 123° 24!75	Least depth 3 ft. Shoaling has increased in this area.	
Cathlamet Channel 46° 12!6 123° 24!1	Least depth 0.0 ft. Shoaling has increased in this area.	
Clifton Channel 46° 13!3 123° 27!8	Least depth 2 ft. General shoaling of Clifton Channel. Now difficult to carry more than 6 ft. downstream thru Clifton Channel past N 46°13'	Least depth 9 ft. Could carry 11 ft.
46° 12.7' 123° 27'	Least depth 1 ft.	Least depth 5 ft.
46° 12!5 123° 26'	Large sand spit covering N half of entrance to Clifton Channel & extending northward 1/2 mile. Is gradually increasing in size.	
46° 12' 123° 23!5	Shoal extending N & E from Puget Island is increasing in size.	
		1937 Survey
N of W end of Wallace Island 46° 08!6 123° 16!5	Sand bar building up; now bares several feet at low water. Water now shoal for several hundred meters N of Wallace Island.	Least depth 5 ft.
46° 09!7 123° 13!5	Eureka Bar built up & extending farther South. Area S of Eureka Bar generally shoaler.	
E of Gull Island 46° 11!2 123° 08!7	Sand bar built up. Area generally shoaler.	
NW entrance to Bradbury Slough 46° 10!7 123° 10!0	Sand bar has increased in size and extends further NE.	
46° 09' 123° 15'	Large sand bar now in this area.	

Not within limits of H-7862

46° 13.6 123° 36.0	Sandbar has increased in size	
NE end Snag Is. 46° 14.5 123° 36'	NE end of jetty has washed away and depths are generally greater.	
46° 12.6 123° 37.7 Seal Island Prairie Channel	Least depth 3½ ft. generally. (4½ smooth sheet.) This channel is generally shoaler than prior surveys indicate.	Least depth 14 ft.
Svenson Is. Prairie Channel 46° 10.9 123° 39.6	Mud bar building out into channel	
46° 15.8 123° 38.6	Least depth 6 ft. Shoal is building up downstream from Altoona Jetty.	
46° 15.3 (46 13.3?) C.H. 123° 36.7	Least depth 26 ft. Shoal near channel has been removed, probably by dredging.	Least depth 0.0 ft.
46° 15.5 123° 35.5	Least depth 22 ft. (23' smooth sheet) Shoal area is larger than before.	Least depth 26 ft.
46° 13.3 123° 38.0	General shoaling S of Snag Island.	
Vicinity of 46° 14' 123° 33'	Hole in this vicinity has shoaled to 14 ft.	Least depth 26 ft.
46° 14.2 123° 31.65	Least depth 4½ ft. Slight shoaling in this general area.	Least depth 8 ft.
46° 15.2 to 46° 15.5 123° 31.5	Shoal area has increased and extends much further downstream.	
Along face of Brookfield dock	Least depth 5½ ft.	
Below Skamokawa 46° 16.2 123° 29.3	Shoal in midstream extends farther downstream. This shoal is used as a dredge spoilage area.	
E entrance to Red Slough 46° 14.6 123° 26.9	Sand shoal built up. Bares 3 ft. at C.R.D. 1 ft. can be carried N or S of the center of the entrance.	6 ft.
46° 15' 123° 27'	Shoal area extending E from Welch and Tenasillahe Islands gradually increasing.	

Examples on this page do not fall within the limits of H-7862

Comparison with Chart 6152:

46° 10.0 123° 13.1	Fish trap extends S from Eureka Upper Dike. Trap not shown on chart.
46° 12.9 123° 25.2	Chart shows dolphin. No dolphin now.
46° 13.2 123° 28.4	Chart shows 2 rocks just offshore. Area was developed and no rocks found.
46° 13.0 123° 25.8	Chart shows fish trap. No trap now.
46° 13.2 123° 25.8	Chart shows fish trap. No trap now.
46° 14.0 123° 26.2	Chart shows dolphin. No dolphin now.
46° 14.6 123° 25.2	Chart shows pile. No pile now.
46° 14.7 123° 27.1	Chart shows fish trap. No trap now.
46° 15.2 123° 26.6	Chart shows pile. No pile now.
46° 15.5 123° 27.0	Chart shows pile. No pile now.
46° 16.1 123° 27.6	Chart shows pile. No pile now.
46° 16.4 123° 29.6	Chart shows rock near shoreline. Rock not found; however, area was not completely developed and shoal sounding on boat sheet indicates that rock may still be there. 17 ft. smooth sheet
46° 15.7 123° 32.9	Chart shows pile. No pile now.
46° 13.50 123° 36.25	Chart shows pile. No pile now.
46° 15.46 123° 35.05	Chart shows pile. No pile now.
46° 15.5 123° 35.4	24 foot sounding on H-6181 (1936-37) supported by 22 foot sounding in vicinity on H-7817 (1950). 25' smooth sheet
46° 15.4 123° 38.7	Miller Sands fish house now gone. Snag piles remain. Fish barn still remains.
46° 13.6 123° 38.5	Chart shows dolphin. Dolphin gone.

Not within the limits of H-7862

46° 13.1 123° 39.8	Green Island fish house gone. Snag piling still remains.
46° 13.5 123° 35.1	Chart shows wreck. No indication of wreck now.
46° 13.2 123° 36.8	Dike in poor repair.
46° 12.9 123° 39.0	Green Island jetty in poor repair.
46° 15.7 123° 39.5	Jetty in ruins still remains. Boat sheet shows lines run through gap in jetty.
46° 13.8 123° 36.9	Fish house and dolphins have been removed and relocated at 46° 13.7 N., 123° 37.3 W.
46° 14.4 123° 35.9	Snag Island Jetty in poor condition. Eastern end has washed away.
46° 15.5 123° 29.6	11 foot sounding shown on chart. Sounding no longer isolated due to general shoaling in this area.

Not within the limits of H-7562

N. Dangers and Shoals:

All newly found dangers and shoals have been discussed under Comparison with Prior Surveys.

O. Coast Pilot Information:

Coast pilot 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 Chart Letter 983 (1950)

Pillar Rock Upper Range was established by Photo-Topo, approximate azimuth 263° 38'. The first hydrographic line for "a" day, Sheet H-7816, was run on this range.

Pillar Rock Lower Channel Range was established by triangulation, approximate azimuth 93° 35'. Hydrographic line recorded in Volume 1, Page 30, Sheet H-7817, was run on this range.

Q. Landmarks for Charts:

All landmarks for charts are listed on Form 567 which is a part of this report. See C.L. 983 (1950)

R. Geographic Names:

A separate report on geographic names will be submitted.

S. Silted Areas:

Major changes due to silting are discussed under Comparison with

Prior Surveys. In general the back channels are subject to much silting. The small islands and bars are composed mostly of fine sand and change slightly with each flood season. Generally they tend to increase in size.

T. Tabulation of Applicable Data:

Forwarded to Washington Office:

10 - sheets, Form 681, Report-Tide Station (Aldrich Pt., Cathlamet, Tongue Point, Skamokawa, Brookfield, Altoona, Knappa, Cape Horn, County Line, and Stella.)

11 - volumes, Form 258, Leveling Records-Tide Stations (for above stations).

27 - marigrams, Aldrich Pt.

7 - marigrams, Cathlamet

19 - marigrams, Skamokawa

18 - marigrams, Brookfield

9 - marigrams, Altoona

10 - marigrams, Knappa

7 - marigrams, County Line

8 - magigrams, Stella

9 - marigrams, Cape Horn

4 - volumes, Form 270, Record of Current Observations (Hunts Mill and Altoona).

2 - volumes, Form 250, Horizontal Angles

4 - volumes, Form 251a, Horizontal Angles

4 - sheets, Form 28B, Geographic Positions

19 sheets , Form 21A, List of Directions

13 - sheets, Form 470, Abstract of Directions

1 - sheet, Form 382, Reduction to Center

18 - sheets, Form 25, Computation of Triangles

27 - sheets, Form 27, Position Computations

2 - sheets, Form 655, Computation of 3-pt. Problem

11 - sheets, Form 662, Inverse Position Computation

4 - cards, Form 525, Description of Triangulation Stations

21 - cards, Form 525b, Description of Triangulation Stations Intersection Stations

118 - cards, Form 526, Recovery Note, Triangulation Station

39 - cards, Form 685A, Recovery Note, Bench Marks

1 - Coast Pilot Notes

Forwarded to Seattle Processing Office:

7 - Map-manuscripts (photogrammetric) T-9266 to T-9269 inclusive, T-9510, T-9254(1949), and T-9272 (1949).

76 - Form M-2226-12, Control Station Identification Cards

162 - Pictures, single lens, field, scale 1:10,000

29 - Pictures, single lens, field, scale 1:5,000

167 - Pictures, single lens, office, scale 1:10,000

34 - Pictures, single lens, office, scale 1:5,000

8 - Film positives of 1936 Topographic Sheets, Nos. T-6384(b), T-6385(a) & (b), T-6386, T-6387 (a) & (b), and T-6522 (a) & (b)

1 - Field Inspection Report for Map Manuscripts Nos. T-9266 to T-9269 inclusive and T-9510.

1 - Descriptive Report for Manuscript (map) Nos. T-9266 - T-9269 incl.

1 - Descriptive Report for Map Manuscript No. T-9510.

89 - Form 524, Description of Recoverable Topographic Stations

22 - Fathograms, Sheet No. H-7815

20 - Fathograms, Sheet No. H7816

32 - Fathograms, Sheet No. H-7817

20 - Fathograms, Sheet No. 7862

4 - sheets, Form 28B, Geographic Positions

4 - cahiers, Tide Curves, Tide Reducers, Fathometer corrections See H-7817

1 - Geographic Names Report

1 - Season's Report

Respectfully submitted,

John O. Boyer

John O. Boyer
Lieut., USC&GS

LEADLINE CORRECTIONS

Sheets H-7815, H-7816, H-7817, & H-7862 (1950)

Leadline No. 4 (snapper)

Leadline Reading	Correction Feet
0.0 to 12.0	0.0
12.1 to 21.0	-0.2
21.1 to 32.0	-0.4
32.1 to 45.0	-0.6
45.1 to 58.0	-0.8
58.1 to 110.0	-1.0

Leadline No. 3 (snapper)

Leadline Reading	Correction Feet
0.0 to 80.0	0.0

Leadline No. 1

Leadline Reading	Correction Feet
0.0 to 09.0	0.0
9.1 to 14.0	-0.2
14.1 to 22.0	-0.4
22.1 to 27.0	-0.6
27.1 to 37.0	-0.8
37.1 to 46.0	-1.0

Leadline No. 2 (snapper)

Leadline Reading	Correction Feet
0.0 to 18.0	0.2
18.1 to 23.0	0.4
23.1 to 34.0	0.6
34.1 to 42.0	0.8
42.1 to 54.0	1.0
54.1 to 118.0	1.2

Leadline No. 6

Leadline Reading	Correction Feet
0.0 to 3.0	0.0
3.1 to 53.0	0.2

TIDE NOTE

Hydrographic Sheets H-7815, H-7816, H-7817, & H-7862 (1950)

The tides were recorded by portable automatic tide gages. The Tide Staffs were connected to U. S. C. & G. S. bench marks and referred to the Columbia River Datum as determined by the U. S. Army Engineers.

The boat sheets were divided into tidal zones, which are clearly marked on the sheets. Tide curves were drawn for each zone by interpolation for the duration of the hydrography in each zone. The zoning attempts to hold the difference in tides between adjoining zones to about 0.2 feet, but the differences at low water, which were greatest, sometimes were as much as but not more than 0.5 feet. Tide reducers were taken from these curves and entered in the sounding volumes to the nearest 0.2 foot.

Sheet No.	No. of Zones	Controlled by Tide Gages at	CRD on Staff	Geo. Pos. of Tide Gage Latitude	Longitude
H-7815	7	Cathlamet	0.0ft.	46°12'1	123° 23'1
		Skamokawa	-0.01 ft.	46°12'2	123° 27'3
		Aldrich Pt.	+4.57 ft.	46°14'2	123° 30'7
H-7816	7	Skamokawa	-0.01 ft.	46°12'2	123° 27'3
		Aldrich Pt.	+4.57 ft.	46°14'2	123° 30'7
		Brookfield	+0.05 ft.	46°15'8	123° 33'6
H-7817	5	Brookfield	+0.05 ft.	46°15'8	123° 33'6
		Altoona	+1.0 ft.	46°16'0	123° 39'2
		Knappa	+2.0 ft.	46°11'3	123° 35'3
H-7862	4	Stella	+1.0	46° 11'3	123° 07'6
		County Line	+1.0	46° 11'0	123° 11'4
		Cape Horn	+1.6	46° 09'1	123° 17'4

A comparison of the tides at Brookfield with Aldrich Point and Skamokawa indicate that the Columbia River Datum at Brookfield may be relatively too high by about 1/2 foot. The following is a portion of a letter from the Acting Director dated 31 October 1950. "However the series of observations at Brookfield is too short to give conclusive results and the indicated discrepancy, if real, is too small to be of practical significance in determining tide reducers. It is recommended that the tide reducers be entered in the sounding records on the assumption that the Columbia River Datum at Brookfield has been correctly determined as the available observational data do not disclose any positive evidence of appreciable error." As recommended above, the field party applied no correction to the tide readings obtained at Brookfield.

J. O. Boyer,
Lieut., USC&GS

APPROVAL SHEET

for

Hydrographic Survey Sheets H-7815, H-7816, H-7817, H-7862 (1950)

Field work on these sheets was done under the immediate supervision of W. H. Bainbridge, Chief of Party. Commander Bainbridge was transferred from the Ship HODGSON prior to the writing of this report.

The records have been examined and found to be complete.

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

Fair J. Bryant,
Acting Commanding Officer
Ship HODGSON

Lower Columbia River.

Sheets H 7815 No 1150
7816 1250
7817 1350
H-7862 (1950 1450 (Present survey)

Processing Office Notes.

Smooth sheets.

The four projections were made by hand; the first three on cut sheets, brand not known; the last on Mylar paper.

	H 7815 No 1150	H 7816 No 1250	H 7817 No 1350	H-7862 (1949) No 1450
Shoreline and topographic signals.	T 9269 9269	T 9268 9268	T 9268	T 9272 (1949) 9310
Triangulation from adjusted GP's on pages here listed.	335 334 336 345 346 367 368 370 901 907 910	335 334 345 346 367 368 370 901 902 1113	335 335 336 346 368 1167 1160	343 330 331 369 370

Other GP's for all four sheets are found in the field computations of Fairbridge 1950.

Any features requiring special mention have been noted on the face of the smooth sheets, or in the sounding records.

E. A. Gray E. Smith

Dept. Engr. 11/19/51

FATHOMETER CORRECTION

Launch No. 134 Sheet H-7862 Fathometer No. 62S

Fath. Depth Feet	Correction Feet
"A" Scale	
0.0 to 1.2	+1.0
1.3 to 1.8	+0.8
1.9 to 2.8	+0.6
2.9 to 4.0	+0.4
4.1 to 6.2	+0.2
6.3 to 19.0	0.0
19.1 to 27.5	-0.2
27.6 to 47.0	-0.4
47.1 to 55.0	-0.6

Fath. Depth Feet	Correction Feet
"B" Scale	
35.0 to 48.0	0.0
48.1 to 90.0	-0.2

Launch No. 141 Sheet H-7862 Fathometer No. 77

"A" Scale	
0.0 to 1.4	+1.6
1.5 to 3.3	+1.4
3.4 to 5.3	+1.2
5.4 to 7.4	+1.0
7.5 to 10.1	+0.8
10.2 to 13.4	+0.6
13.5 to 17.1	+0.4
17.2 to 22.0	+0.2
22.1 to 28.0	0.0
28.1 to 34.5	-0.2
34.6 to 41.6	-0.4
41.7 to 48.7	-0.6
48.8 to 54.2	-0.8
54.3 to 58.9	-1.0

"B" Scale	
35.0 to 38.7	+0.8
38.8 to 44.6	+0.6
44.7 to 50.3	+0.4
50.4 to 55.2	+0.2
55.3 to 59.3	0.0
59.4 to 63.0	-0.2
63.1 to 66.6	-0.4
66.7 to 70.4	-0.6
70.5 to 74.0	-0.8
74.1 to 77.9	-1.0
78.0 to 82.4	-1.2
82.5 to 87.3	-1.4
87.4 to 90.0	-1.6

"C" Scale	
70.0 to 74.1	+1.0
74.2 to 79.0	+0.8
79.1 to 83.7	+0.6
83.8 to 88.6	+0.4
88.7 to 93.4	+0.2
93.5 to 98.2	0.0
98.3 to 103.0	-0.2
103.1 to 108.0	-0.4
108.1 to 113.0	-0.6
113.1 to 118.0	-0.8
118.1 to 122.6	-1.0
122.7 to 125.0	-1.2

"D" Scale	
105.0 to 105.5	+0.8
105.6 to 111.9	+0.6
112.0 to 118.0	+0.4
118.1 to 124.1	+0.2
124.2 to 130.4	0.0
130.5 to 136.5	-0.2
136.6 to 142.7	-0.4
142.8 to 148.4	-0.6
148.5 to 154.8	-0.8

Hydrographic Signals

Sheet H-7862(HO-1450 Field)

Hydro Name	Type	Source
ABE	Trig.	ABERNETHY POINT LIGHT, 1936
ACE	Photo-Hydro	T-9272 (266)
ADD	Hydro-Sextant	Vol. 1, page 4 (262)
ALE	Hydro-Sextant	Vol. 1, page 10 (see D.R. T-9510, p 16. See also Review Rept T-9272)
AMMO	Photo-Topo	Ammo, 1950 (Form 524)
ARM	Hydro-Sextant	Vol. 1, page 5
ASH	Photo-Hydro	T-9272(270)
BAG	Hydro-Sextant	Vol. 1, page 5
BIL	Photo-Topo	Bil, 1937, 1950 (Form 524)
~~BOB~~ BOX	Trig.	COOPERPOINT FRONT LIGHT, 1936, 1950
BUNK	Photo-Topo	Bunker Hill Light, 1949
BUT	Photo-Hydro	T-9272 (286)
CAB	Hydro-Sextant	Vol. 1, page 4
CAT	Photo-Topo	Cathlamet Channel Dike N. End Lt., 1949, T-9272(1949)
CON	Hydro-Sextant	Vol. 7, page 23
COOP	Trig.	COOPER POINT LIGHT, 1950
CUP	Photo-Topo	Wallace Slough Red Barn 1949, T-9272 (1949)
CUT	Photo-Hydro	T-9272(271)
DAY	Photo-Hydro	T-9272 (263)
DEW	Hydro-Sextant	Vol. 7, page 23
DIP	Hydro-Sextant	Vol. 1, page 5
DOT	Trig.	DOT (USE) 1950
DUD	Photo-Hydro	T-9272 (272)
DUN	Photo-Hydro	T-9510 (242)
EAR	Hydro-Sextant	Vol. 8, page 4
ELF	Photo-Hydro	T-9272 (264)
EVA	Photo-Hydro	T-9272 (273)
FAT	Hydro-Sextant	Vol. 1, page 10
FIR	Photo-Hydro	T-9272 ~~(273)~~ (280)
FORD	Trig.	FORD, 1950
GAB	Photo-Topo	Gab, 1937 (USE), 1950 (Form 524)
GAD	Photo-Hydro	T-9272 (261)
GAM	Photo-Hydro	T-9272 (269)
GOT	Photo-Hydro	T-9510 (316)
GUY	Photo-Hydro	T-9272 (279)
HAT	Photo-Topo	Tank, Elevated, 1949, 1950 (Form 524)
HID	Photo-Hydro	T-9272 (259) 7 rock inshore
HOT	Trig.	HOTCHKISS DIKE LIGHT, 1950
HOW	Photo-Hydro	T-9510 (314)
HUB	Hydro-Sextant	Vol. 7, page 23
HUM	Photo-Hydro	T-9272 (276)
HUT	Hydro-Sextant	Vol. 1, page 5
IKE	Photo-Topo	Dike 66.0 Dolphin South End, 1949 (T-9272(1949)
IRK	Hydro-Sextant	Vol. 1, page 5
JET	Photo-Topo	Jet, 1950 (Form 524)
JUG	Photo-Hydro	T-9510 (313)
KIM	Photo-Hydro	T-9510 (312)
LOG	Photo-Hydro	T-9510 (234)
LOP	Hydro-Sextant	Vol. 1, page 6
LOW	Trig.	EUREKA DIKE LOWER LIGHT, 1950

LUG	Photo-Hydro	T-9510 (311)
MAC	Photo-Topo	Mac, 1937, 1950 (Form 524)
MAG	Photo-Hydro	T-9510 (309)
MAL	Photo-Hydro	T-9272 (275)
MAN	Photo-Hydro	T-9510 (235)
MID	Trig.	MIDWAY TREE (USE), 1936
NED	Photo-Topo	Tank,Elevated, 1949, 1950 (Form 524)
NEW	Trig.	EUREKA LOWER DIKE LIGHT, 1950
NIG	Photo-Hydro	T-9510 (293)
NIP	Photo-Hydro	T-9510 (308)
NOD	Hydro-Sextant	Vol. 1, page 4
OAK	Photo-Topo	Oak Pt. Lt. (USE), 1950 (Form 524)
OFF	Trig.	EUREKA LIGHT, 1950
OLD	Trig	DIKE 62.5 DOLPHIN E. END, 1936
OLE	Trig.	H&B FISHOUSE FLAGPOLE, 1936
ORE	Photo-Topo	Ore, 1937, 1950 (Form 524)
PIN	Photo-Topo	Pin, 1950 (Form 524)
PIPE	Photo-Topo	Pipe Tree (USE), 1950 (Form 524)
PUG	Photo-Hydro	T-9272 (277)
PUP	Photo-Hydro	T-9510 (294)
PUT	Photo-Hydro	T-9510 (307)
RAM	Photo-Hydro	T-9510 (295)
REKA	Trig.	REKA, 1950
REST	Photo-Topo	Rest, 1950 (Form 524)
RIM	Photo-Hydro	T-9510 (244)
RIB	Photo-Hydro	T-9272 (278)
RUM	Photo-Hydro	T-9510 (306)
SAD	Photo-Hydro	T-9510 (296)
SHAD	Trig.	SHAD 2, 1950
STEL	Trig.	STELLA REAR RANGE LIGHT, 1936
STRU	Trig.	STRU, 1950
SUE	Photo-Hydro	T-9510 (305)
TAN	Photo-Topo	Beaver Tank, 1950
TUB	Photo-Hydro	T-9510 (304)
UP	Trig.	EUREKA DIKE UPPER LIGHT, 1950
VAL	Photo-Hydro	T-9510 (303)
VET	Photo-Hydro	T-9510 (252)
VIM	Photo-Hydro	T-9272 (258) Ph.T. 48 PV Sextant fix data (plots 2.3 mm NE of VIM) LTS 5/52
WAD	Photo-Hydro	T-9272 (274)
WAL	Trig.	WALLACE ISLAND LIGHT, 1950
WAT	Trig.	WATERFORD LIGHT, 1950
WIN	Photo-Hydro	T-9510 (302)
WIT	Photo-Hydro	T-9510 (299)
YAM	Photo-Hydro	T-9510 (301)
ZOO	Photo-Hydro	T-9510 (300)
BOB	Hydro-Sextant	Vol. 1, page 4

STATISTICS

Sheet No. H-7862 (1950)

Launch 141

Date	Day	No. of H.L.	No. of Pos.	Stat. Miles	Vol. Nos.
10/17/50	a	4	15	1.0	1
10/18/50	b	1	93	10.2	1
10/19/50	c	5	159	25.9	2
10/20/50	d	2	87	17.5	1
10/23/50	e	0	120	17.4	2&3
10/24/50	f	41	151	19.7	4
10/25/50	g	50	194	15.0	3
10/26/50	h	0	220	27.9	4&5
10/27/50	j	0	96	9.1	3&5
10/30/50	k	0	102	15.7	5
10/31/50	l	1	206	29.0	6
TOTALS - - - - -		104	1443	188.4	

Launch 134

10/19/50	a	0	59	5.0	7
10/20/50	b	0	85	8.7	7
10/23/50	c	0	143	13.5	7
10/24/50	d	0	194	18.9	7&8
10/25/50	e	0	116	10.0	9
10/26/50	f	0	189	23.6	9&10
10/27/50	g	0	7	1.1	8
10/31/50	h	44	44	0.0	8
TOTALS		44	837	80.8	

Totals for sheet	148	2280	269.2

Launch No. 141 area - 5.17 sq. stat. miles
Launch No. 134 area - 1.69 sq. stat. miles
Total area - 6.86 sq. stat. miles

RHC

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Hydrography and Topography 28 September 1951

Division of Charts: R. H. Carstens

Plane of reference approved in 10
volumes of sounding records for

HYDROGRAPHIC SHEET 7862

Locality Wallace Island - Crims Island, Lower Columbia River

Chief of Party: W. H. Bainbridge in 1950
Plane of reference is Columbia River Datum, reading
2.0 ft. on tide staff at Cape Horn
9.7 ft. below B. M. 1 (1937)

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

1.0 ft. on tide staff at Oak Point (County Line)
30.5 ft. below B. M. R 63 (1934)

Condition of records satisfactory except as noted below:

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

U. S. GOVERNMENT PRINTING OFFICE 756675

GEOGRAPHIC NAMES

Survey No. H-7862

FL

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Washington									BFH	1
Oregon									"	2
Columbia River									"	3
Crims Island									"	4
Gull Island										5
Abernethy Point			(not Abernathy)						"	6
Beaver Slough										7
Wallace Slough									"	8
Wallace Island									"	9
Bradbury Slough										10
										11
				Names underlined in red are approved. 9-28-51 L Heck						12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7862

Records accompanying survey:

Boat sheets 2; sounding vols. 10; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 9 env.;

special reports, etc. 1 Smooth Sheet.

.....

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

Number of positions on sheet		2280	2280
Number of positions checked			130
Number of positions revised			2
Number of soundings revised (refers to depth only)			NONE
Number of soundings erroneously spaced			NONE
Number of signals erroneously plotted or transferred			NONE
Topographic details	Time		40 hrs.
Junctions	Time	1 hr	24 hrs.
Verification of soundings from graphic record	Time	2 hr.	2 hrs.

Preliminary verification by R. E. Elkins ..... *Total time* ..... 20 hr *10-3-51*

Verification by F.P. SAULSBURY ..... Total time 214 ..... Date 4-15-53

Reviewed by J.A. Winsmore ..... Time 24 ..... Date 6 May 1952

Review Addendum - 8 " 13 May 1953

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7862 FIELD NO. HO-1450

Oregon-Washington, Columbia River, Wallace Island to Crims Island

Project No. CS-339

Surveyed in October 1950 Scale 1:10,000

Soundings:

808 Fathometer
Handlead
Pole

Control:

Sextant fixes on shore signals

Chief of Party - W. H. Bainbridge
Surveyed by - P. Taylor, J. O. Boyer & R. F. Lanier
Protracted by - D. A. Langland & J. R. Wheeler
Soundings plotted by - J. R. Wheeler
Preliminary Verification by - R. E. Elkins
Verified and inked by - F. P. Saulsbury 15 April 1953
Reviewed by - T. A. Dinsmore, 6 May 1952
Inspected by - R. H. Carstens

1. Shoreline and Signals

The origin of the shoreline and signals is given in the Descriptive Report. *See Review Addendum*

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 except in a few foul inshore areas or where log dumps and other obstructions prevented the running of the regular system of sounding lines.

Prominent sand bars uncovering several feet at the datum plane together with numerous deeps and shoals contribute to the general uneveness of the river bottom. Sharp irregularities such as those occurring in the main river channel are sand waves apparently caused by the rippling effect of the current on the sandy bottom. The sand waves characteristically lie normal to the flow of the river current. Depths along the

axis of the main river channel generally range from 30 to 60 feet.

4. Junctions with Contemporary Surveys

The present survey joins H-7748 (1949) on the east and H-7720 (1949) on the west. On the east, present depths and depths on H-7748 are in good agreement. On the west, depths on H-7720 and the present survey are in good agreement in the main channel. However, in the area adjacent to the western end of Wallace Island, differences in depths of 2 to 9 ft. are noted. Sand bars and channels have shifted appreciably in the latter area. Such differences are to be expected in an area of so changeable bottom. *see Review Addendum*

5. Comparison with Prior Surveys

a. H-1336 (1876) 1:10,000

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

b. H-6242 and H-6243 (1937) 1:10,000

These prior surveys cover the area of the present survey. Radical bottom changes are noted throughout the area. Most of the large sand bars in the area have shifted several hundred meters in position. In such localities, prior and present depths differ as much as 15 feet. Examples of some of the most noticeable differences between prior and present depths are given in the following comparison:

Prior Depth	Latitude	Longitude	Present Depth
46	46° 10.18'	123° 08.57'	28
7-8	46° 10.73'	123° 09.65'	Uncov. 8
63	46° 10.51'	123° 12.48'	40
10-15	46° 09.00'	123° 15.00'	Uncov. 5
5-6	46° 09.15'	123° 15.25'	13-18
8-13	46° 08.20'	123° 16.60'	Uncov. 4

Conspicuous evidence of both erosion and accretion is noticed in the shoreline of the several river islands in the surveyed 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 the area.

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

6. Comparison with Chart 6152 (Latest print date 7/16/51)

A. Hydrography

Charted hydrography originates with the previously discussed surveys supplemented by various surveys by the Corps of Engineers, the latest of which are blueprint 46471 (1950), 47376 and 47400 (1951). Numerous differences are noted between the charted depths and depths on the present survey. *See Review Addendum*

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

A comparison has also been made with Chart 3361 (1st Edition of July 1950). Charted hydrography originates principally with the prior surveys supplemented by Corps of Engineers surveys to 1949. The charted information is entirely superseded by the present survey and subsequent Corps of Engineers surveys. *See Review Addendum*

B. Dredged Channels

The project depth in that portion of the main channel covered by the present survey is 35 feet. The present survey shows a 28-ft. sounding in lat. 46° 10.31', long. 123° 13.04', and many soundings less than 35 ft. within the limits of the marked channel. Inasmuch as portions of the main channel are dredged periodically by the Corps of Engineers it is presumed that the project depth has been subsequently restored.

C. Aids to Navigation

The lighted buoy located in lat. 46° 09.07', long. 123° 15.37', on the present survey has been discontinued and the fixed light (charted) in the immediate vicinity has been rebuilt. The foregoing information is reported in H.O. Notice to Mariners No. 3 (1951).

Except as noted, the aids to navigation located 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 and Descriptive Report are complete and comprehensive.

b. The preliminary verification indicates that the smooth plotting was well done.

c. Offlying piles from the air photographic surveys will be added when the verification is completed. *See Review Addendum*

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is an excellent basic survey of the area covered 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:

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

REVIEW ADDENDUM

(after complete verification and inking)

H-7862 (1950)

Shoreline

The shoreline originates with the * unreviewed manuscripts of air-photographic surveys T-9254, T-9272 and T-9510 of 1949.

Junctions with Contemporary Surveys

In the vicinity of lat. 46° 08.35', long. 123° 17.20', a butt junction was made between H-7720 (1949) and the present survey. Differences in depth of 2-9 ft. occurring in the overlapping area of the two surveys are attributed to bottom changes. Sand bars and channels have shifted appreciably in this area. Within the common area, depths on H-7720 are superseded by the depths on the present survey.

Comparison with Chart 6152 (Drawing of 1953 Edition)

Charted hydrography originates principally with the present survey after preliminary verification and review. No important changes were made during the final verification to soundings charted from the present survey. Supplemental information is charted from subsequent surveys by the Corps of Engineers, the latest of which are shown on blueprints 49941, 49942 and 49944 of February 1953.

It is noted that the present survey has not been applied to Chart 3361.

Condition of Survey

Offlying dolphins, piling and other topographic detail have been added to the smooth sheet from the air-photographic surveys while completing the verification. The survey is considered to be complete and adequate.

T. A. Dinsmore
13 May 1953

Inspected by: R. H. Carstens

* Revised to agree with reviewed manuscript on 6/30/53, by Gearhardt, Ck'd by Stirni GFd

Signal positions revised by the photogrammetric review are shown as dashed red circles. R.E.E. 4-18-55 No revisions were made in the hydrography.

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7862

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
5/20/52	Reconstr 6152	GHE	Prelim Verif. & 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
			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

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.