

7635

Diag. Cht. No. 6154 (Insert)

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. HO-05148 Office No. H-7635

LOCALITY

State OREGON

General locality WILLAMETTE RIVER

Locality OREGON CITY TO ROCK ISLAND

194 8

CHIEF OF PARTY

W. H. Bainbridge

LIBRARY & ARCHIVES

DATE

July 31 - 1950

B-1870-1 (1)

7635

JUL 26 1950

Form 587
(Ed. Nov. 1941)

REG. NO.

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 7635

Field No. Ho 05148

State Oregon

General locality Willamette River

Locality Oregon City to ~~N~~end Rock Island.

Scale 1/ 5 000 Date of survey 19 Jan. - 10 Feb. 1948

Instructions dated 28 November 1945

Vessel Ship HODGSON

Chief of party W.H. Bainbridge

Surveyed by R.M. Stone

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

Protracted by John C. Couch

Soundings penciled by John C. Couch

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLW ~~MLW~~ Willamette River Datum

REMARKS: Fathograms scaled by ship's complement,
checked by E. Altizer.

DESCRIPTIVE REPORT

to accompany

Hydrographic Survey No. H-7635, (HO-05148)
No. H-7636, (HO-05248)
No. H-7637, (HO-05348)

Willamette River

Oregon City, Ore. to Vicinity South of Wilsonville, Ore.

Scale 1:5000
Jan. - April 1948

Ship HODGSON
W. H. Bainbridge
Chief of Party

PROJECT:

Project No. CS-323.

The hydrographic survey was made in accordance with the following instructions:

1. Original Instructions, 22/MEK, 1995-WE-1, dated 28 November 1945.
2. Supplemental Instructions, 22/MEK, S-2-HO, dated 12 October 1948.
3. Related letters:
 - (a) From Director to Commanding Officer, Ship WEST-DAHL and Lt. Comdr. R. A. Earle dated 26 February 1946, 70 Lmh. Subject: Surveys in the vicinity of Portland, Oregon.
 - (b) From Director to Commanding Officer, Ship HODGSON, 22/MEK, S-1-WE, dated 17 April 1946. Subject: Field Work, Project CS-323.
 - (c) From Director to Lt. Comdr. R. A. Earle, 711-rs, dated 24 October 1947. Subject: Preparation of boat sheets and smooth sheets for Willamette River hydrography.

(d) From Director to Commanding Officer, Ship HODGSON, 711-rs, dated 24 November 1947. Subject: Recovery and use of photo-hydro stations.

(e) From Director to Commanding Officer, Ship HODGSON, 22/MEK, S-1-HO, dated 6 February 1948. Subject: Hydrography, Willamette River.

(f) From Director to Commanding Officer, Ship HODGSON, 22/MEK, S-1-HO, dated 16 April 1948. Subject: Field work.

These instructions cover new basic hydrographic surveys of the Willamette River from Oregon City, Oregon to the vicinity of Ash Island, south of Newburg, Oregon.

SURVEY LIMITS AND DATES:

These surveys constitute a new basic hydrographic surveys of the Willamette River from Willamette Falls at Oregon City, Oregon to the Oregon Electric Railroad Bridge just south of Wilsonville, Oregon. (Refer to "Sheet Index Diagram" appended to this report).

Data pertaining to each hydrographic sheet is as follows:

Field Work

<u>Reg. No.</u>	<u>Field No.</u>	<u>Began</u>	<u>Ended</u>	<u>Surveyed by</u>	<u>Area Surveyed</u>
<u>H-7635</u>	HO-05148	1/19/48	2/10/48	R.M. Stone	Willamette Falls to D/S end of Rock Island
H-7636*	HO-05248	3/9/48	4/30/48	H.J. Healy A.M. Legako	D/S end of Rock Island to Old Canby Ferry Landing (Buchmans Landing)
H-7637*	HO-05348	4/12/48	4/30/48	H.J. Healy R.M. Stone	Old Canby Ferry Landing to Oregon-Electric-Railroad Bridge.

On Hydrographic Sheet H-7636, (HO-05248), the section of the Willamette in the vicinity of the Rock Island area between Latitude 45° 18.70' and 45° 19.50', was surveyed by the Corps of Engineers at Portland, Oregon, during December 1947 on a scale of 1:2000. (Refer to U. S. E. Print No. WR-29-7, dated December 1947, titled "Rock Island Survey, Willamette River, Oregon"). A copy of this print is made a part of the field records. Authority has been granted to substitute the hydrographic survey executed by the Corps of Engineers for the identical area on Hydrographic Sheet H-7636, -)Refer to Director's letter, 22/MEK, S-1-HO, dated 6 February 1948).

On Hydrographic Sheet H-7635, (HO-05148), the section of the river between parallel 45° 21.0' and the Willamette Falls was surveyed by the Corps of Engineers during the year 1945 on a scale of 1 inch = 100 feet. (Refer to U. S. E. Print No. WL-13-1, dated Sept. 1939, Dec. 1945, Apr. 1945 and Sept. 1945, titled - "Willamette Falls & Vicinity". A copy of this print is made a part of the field records.

It is noted that the soundings on the U. S. E. survey are related to mean sea level. The datum of Hydrographic Sheet H-7635 in vicinity of Willamette Falls is 49.94 feet above mean sea level, (taken from the Low Water Profile), hence, all soundings will have to be corrected accordingly.

VESSELS AND EQUIPMENT:

Hydrography was accomplished with Launch No. 141, a 36 foot landing barge, (L.C.P.R).

808-A-type depth recorder No. 77 was used throughout the survey.

Not applicable to H-7635

Op 44685

Op. 47262

In areas occupied by log rafts, hand lead soundings were required, which were obtained by a log walking party using lead line; lines Nos. 2 and 4.

The launch operated from the small boat moorage at "Marina Mart", 2.0 miles south of Oregon City at Lat. 45° 20.4, Long. 122° 38.3' during the time hydrography was done on Sheets H-7635 and H-7636. When work was started on Sheet H -7637, the launch operated from a small boat house located on the south shore of the Willamette near the Boones Ferry Landing, at Lat. 45° 17.5', Long. 122° 46.5'.

The squat and settlement of Launch No. 141 was accurately determined on 11 October 1946 and found to be negligible. No change has taken place in the construction of the launch since that time.

A copy of the observations for squat and settlement is attached to this report on Page ¹² 18.

Corrections to the fathometer soundings were obtained from tables prepared from the data furnished by the three daily bar tests. These tests extended to a depth of 50 feet and were made for the various scale settings of the fathometer: (Refer to "Velocity Correction Abstract" appended to this report, - ~~pages 25 -- 29 incl.~~).

TIDES AND CURRENT STATIONS:

(See discussion under Tide Note attached, pages ¹⁴ ~~19-24~~ incl.).

No current stations were occupied during the time of this survey.

SMOOTH SHEET:

The projection for the smooth sheet was ~~not~~ made by the ~~field party~~. *Seattle Processing Office*

Refer to the report from the Processing Office on this survey.

CONTROL STATIONS:

The area is covered by second order triangulation surveyed by C. A. George, Chief of Party, Year 1946.

Hydrographic signals were located by photogrammetric methods by R. A. Earle, Chief of Party, Year 1946 & 1947, - in conjunction with following surveys:

** Used on H-7635*

Sheet No.	Scale	Title	Proj. No.	Date of Survey
T-8704*	1:8,000	Oregon City, Clackamas Co., Oregon	CS-322	Jan. 1946
T-8707*	1:8,000	Mt. Pleasant, Clackamas Co., Oregon	CS-322	Jan. 1946
T-8706*	1:8,000	Willamette, Clackamas Co., Oregon	CS-322	Jan. 1946
T-8708	1:8,000	Canby, Clackamas Co., Oregon	CS-322	Jan. 1946
T-8809	1:10,000	Willamette River, Oregon	PH-13(46)	May 1947

Additional hydrographic signals were located by means of sextant angles. Refer to "List of Stations" appended to this report, pages 13-~~17~~ ~~incl.~~

To correlate the U. S. E. Survey of the Rock Island area, (Print No. WR-29-7, December 1947), with that of the U.S.C.&G.S. survey on Hydrographic Sheet H-7636, (HO-05248), theodolite observations were made on the following U. S. E. control points in order to locate these stations on the hydrographic sheet.

Not applicable to H-7635

U. S. E. Triangulation Station 128

U. S. E. Triangulation Station 137A

Rock Island Upper Light, (to determine location of triangulation station 132).

The theodolite observations were recorded in Hydro Volume 1, page 16 of Hydrographic Sheet No. H-7636.

A round of sextant angles were observed at triangulation stations 128, 137A and hydrographic signal SPOT. The results were recorded in Hydrographic Vol. 1, pages 4 & 5.

Rock Island Upper Light and Rock Island Lower Light appear on both U. S. E. Print No. WR-29-7 and Hydrographic Sheet H-7636.

A U. S. E. Print of "Upper Willamette River Triangulation, Canemah to Coalca, Scale 1:5,000", No. WR-04-10/5 is made a part of the field records.

To correlate the U. S. E. survey of "Willamette Falls and Vicinity" to Hydrographic Sheet H-7635, control points appearing on both U. S. E. Print No. ^{SP 47262} WL-13-1 and U.S.C.&G.S. Print No. ⁽¹⁹²⁷⁾ T-8704 are used. Air photo control points, Nos. 37, 43 & 44 appear on both surveys.

The boat sheets for hydrography complete with shoreline and photo-hydro signals were prepared in the Washington Office on a scale of 1:5000. Refer to Director's letter of Lt. Comdr. R. A. Earle, dated 24 October 1947, Reference 711-rs.

SHORELINE AND TOPOGRAPHY:

The shoreline of the Willamette River appearing in ink on the boat sheet was transferred from air photo compilation prints ^(T-8704, T-8706, T-8707 of 1946)

Not applicable to H-7635

at the time the sheets were prepared in the Washington Office.

Information pertaining to the air-photo surveys is listed under paragraph heading "Control Stations".

SOUNDINGS:

Hydrography was done with the use of depth recorder No. 77 mounted in Launch No. 141.

Numerous hand lead soundings were taken over shoal areas and in areas containing log rafts.

Bottom specimens were obtained at frequent intervals.

Velocity corrections derived from the mean of the daily bar checks, and the reducers pertaining to the difference between the Willamette River Datum and the elevation of the river surface, have been entered and checked in all hydrographic records in increments of two-tenths of a foot.

An abstract of bar check comparisons and velocity corrections is attached to this report, - pages 25-²⁶~~29~~ incl.

Lead line corrections have been entered and checked in all hydrographic records.

An abstract of River Level Corrections for each hydrographic sheet is appended to this report, - pages 22-~~24~~ incl.

CONTROL OF HYDROGRAPHY:

All horizontal control was done by the three point fix method.

ADEQUACY OF SURVEY:

The survey is complete and should supersede all prior surveys for charting.

The junctions between the hydrographic sheets and the Corps of Engineers surveys (Print Nos. WR-29-7 and WL-13-1) are satisfactory. *(No comp. of junctions made by Reviewer)*

CROSSLINES:

Eight percent of crosslines were run. ✓

No discrepancies were noted in the crosslines. ✓✓

COMAPRISON WITH CHART:

For the
~~There are no existing~~ navigational charts of this portion *(H7635)* of the Willamette River, *see Chart 6171*

COMPARISON WITH PRIOR SURVEYS:

There have been no prior hydrographic surveys made by the U. S. Coast and Geodetic Survey in this area.

The comparison made with the following U. S. Engineer's Survey prints was in fair agreement:

(See Review H-7635 P 6A)

"Willamette River, Portland to Eugene, Oregon", Scale 1:5000.

Print No. 5 of 52, Revised to June 1940
Print No. 6 of 52, Revised to Oct. 1932
Print No. 7 of 52, Revised to July 1937
Print No. 8 of 52, dated - - -July 1932
Print No. 9 of 52, dated - - -July 1932

COAST PILOT INFORMATION:

All traffic through this area consists of small pleasure boats and small tugs used only in moving log rafts.

This portion of the Willamette should be navigated by steering generally a mid-channel course, except in the Rock Island area where the narrow channel is indicated by buoys.

AIDS TO NAVIGATION:

Data pertaining to floating aids to navigation is as follows:

Rock Island Channel Buoy #1 (3rd class spec Can)

H-7635

No Positions in Vols.

Established From Root Sheet

Type of Buoy	Located on Sheet No.	Lat.	Long.	Depth at Buoy	Located by Hydro		
					Vol.	Pg.	Pos.
Rook I. Chan. Buoy No. 2, 4th Cl. spar	<u>H-7635</u>	45°19'(82.8)	121°39' (1015.2) 291.3	4.0 ft.	1	19	1b
Rook I. Chan. Buoy No. 3, 3rd Cl. spar can	<u>H-7635</u>	45°19'(282.1)	121°39' (905.6) 401.0	8.0 ft.	1	19	2b
Rook I. Chan. Buoy No. 5, 3rd. Cl. spar can	<u>H-7635</u>	45°19'(343.8)	121°39' (881.1) 425.5	3.0 ft.	1	19	3b
Rook I. Chan. Buoy No. 7, 3rd. Cl. spar can	<u>H-7636</u>	45°19'(997.1)	121°39' (439.9) 866.6	11.0 ft.	3	60	6h
Rook I. Chan. Buoy No. 9, 3rd. Cl. spar can	<u>H-7636</u>	45°19'(1130.1)	121°39' (411.7) 894.6	11.0 ft.	3	59	5h
Rook I. Chan. Buoy No. 12, 4th Cl. spar	<u>H-7636</u>	45°19'(1331.1)	121°39' (282.9) 1023.7	-1.0 ft.	3	59	4h
Rook I. Chan. Buoy No. 14, 3rd. Cl. spar nun	<u>H-7636</u>	45°18'(549.1)	121°39' (246.8) 1059.8	8.6 ft.	3	57	7lg

Data pertaining to non-floating aids to navigation is as follows:

Description	Located on Sheet No.	Lat.	Long.	Located by Air Photo Comp.
Willamette Falls Light	<u>H-7635</u>	45°21' (1672.9) 178.4	122°39' (927.9) 378.1	T-8704
Rook Island Lower Light Stand (No light fixture)	H-7636	45°19' (1673.7) 178.6	122°39' (188.8) 1118.1	T-8706
Rook Island Upper Light Stand (No light fixture)	H-7636	45°18' (321.3) 1531.0	122°39' (208.3) 1098.7	T-8706

All of the above information on buoys and nonfloating aids was submitted to the Washington Office by W. H. Bainbridge, Comdr., USC&GS, in the form of a letter, dated 8 February 1949, Subject: "Aids to Navigation, Chart 6171". (Chart letter 142, 1949)

There are no ranges maintained for navigation within the limits of this survey.

The vertical clearance of the Oregon Electric Railroad Bridge located just south of Wilsonville, Oregon, was determined and recorded in hydrographic volume 3, page 56 for Hydrographic Sheet H-7637. Additional information in regards to this bridge is as follows:

<u>Determined by</u>	<u>Vert. Clearance</u>	<u>Horiz. Clearance</u>
The Hydrographic Survey	77.5	-----
The Air Photo Field Survey	75.0	192.0
Publication of "List of Bridges over Navigable Waters of U. S.", 1936 edition	75	192

A submerged telephone cable crossing was located on Sheet H-7637 (HO-05348) at Lat. 45° 17.85', Long. 122° 44.95'.

The Electric Low Power Line as shown on Air Photo Compilation Print No. T-8708 at Lat. 45° 18.0', Long. 122° 41.45' is no longer in place. (Refer to note in Hydro. Volume No. 3, Page 61 for sheet H-7637).

In regards to vertical clearance of existing power lines and ferry cables within the limits of this survey, refer to Vol. 3, Page 56 for Sheet H-7637.

An overhead cable, erected during the summer of 1948, was located at Lat. 45° 17.8', Long. 122° 44.95' on 15 March 1949. The results were originally recorded in Vol. 1, Pages 7 & 8 for

Not applicable to ~~sheet~~ H-7635

Sheet HO-05149, and transferred to Vol. 3, Pages 64 & 65 for Sheet H-7637 (HO-05348). The vertical clearance of this cable is 101 feet above the river datum. The cable is part of a river gaging station maintained by the U. S. Geological Survey.

Not applicable to H-7637

LANDMARKS FOR CHARTS:

Data relative to landmarks for charts was prepared and submitted by the U. S. C. & G. S. Photogrammetric Office, R. A. Earle, Chief of Party, during 1946 and 1947. (Chart letter 310, 1947)

GEOGRAPHIC NAMES:

There are no additional names other than those submitted by the Photogrammetric Office and what are shown on the air-photo compilation prints. (T-8704-06-07)

11 October 1946

OBSERVATION FOR SQUAT
Launch No. 141

Willamette River, Vicinity of Hawthorne Bridge, Portland,
Oregon.

Weather: Calm

River: Calm

Launch Fuel tanks approximately half full.

Observations taken with Wye Level set up on east shore of
river - time 09.00 a.m.

Observations taken with launch idle, running slow speed
(as used when sounding downstream), running about 2/3 speed
(as used when sounding up stream).

	<u>Idle</u>	<u>Slow Speed</u>	<u>Squat</u>	<u>Fast Speed</u>	<u>Squat</u>				
		Going	Approach	Mean	Going	Approach	Mean		
		Away			Away				
1st Obs.	1.27	1.30	1.32	1.31	0.04	1.35	1.38	1.36	0.09
2nd Obs.	4.87	4.92	4.88	4.90	0.03	5.03	5.04	5.04	0.17
3rd Obs.	4.67	4.70	4.72	4.71	0.04	4.82	4.79	4.80	0.13
				MEAN	0.04		MEAN	0.13	

LIST OF STATIONS ON SHEET NO. H-7635 (HO-05148)

NAME USED IN HYDRO*	GRAPHIC SURVEY	ORIGIN OF STATION
ACE		Hydro Vol. 1, Page 4
BON		T-8706, Sig. # 3
BAG		Hydro Vol. 1, Page 4
CAR		T-8706, Sig. # 2
COW		Hydro Vol. 1, Page 4
DAY		T-8707, Sig. # 20
DOT		Hydro Vol. 1, Page 4
EAR		T-8707, Sig. #19
ELF		T-8707, (ELF, 1946)
FAT		T-8707, Sig. # 18
FOG		T-8706, Sig. # 24
GAS		T-8707, Sig. # 29
GIN		T-8707, Sig. # 17
HUT		T-8707, Sig. # 16
ICE		T-8707, Sig. # 15
JAP		T-8707, Sig. # 14
JOY		Hydro Vol. 1, Page 5
KID		T-8707, Sig. # 13
LAX		T-8707, Sig. # 26
LEG		T-8707, Sig. # 12
MIX		T-8706 (MIX USE 1936-1946)
MAN		Hydro Vol. 1, Page 5
MUG		T-8707, Sig. # 24
NOR		T-8707, Sig. # 23
NEO		T-8707, Sig. # 10
OBI		T-8707, Sig. # 22
OFF		T-8707, Sig. # 9
SOW		T-8704, Sig. # 45
SAX		T-8707, Sig. # 6
VIA		T-8707, Sig. # 3
WIT		T-8704, Sig. # 42
YET		T-8704 & Hydro Vol. 2, Pg. 13
YAM		T-8704, Sig. # 43
ZIG		T-8704, Sig. # — (Trans. Tower)
ZOO		T-8704, Sig. # 41
Hydro Signal No.11		T-8707
Hydro Signal No.27		T-8707
WILLAMETTE FALLS LT.		T-8704

Automatic recording gages, (ordinarily called tide gages), were established at Marina Mart and Upper Pulp Siding. Staff readings were obtained at the remaining locations during the period of hydrography.

Each hydrographic sheet was divided into zones in order that the river level corrections could be applied to all soundings in increments of 0.2 ft. All zones have been clearly indicated on the boat sheets.

An abstract of the river level corrections for each hydrographic sheet is attached to this report, - page# 22-~~24~~
~~incl.~~

VELOCITY CORRECTION ABSTRACT:

Tabulations of the three daily bar checks for Launch No. 141 are shown on pages, - 25 & ~~29~~²⁶ incl.

Velocity corrections were derived from the mean of the daily bar checks and are listed separately.

MISCELLANEOUS:

It will be noted that a small area at the west of Hydrographic Sheet H-7637 was surveyed on an insert. A standard size sheet, however, will obviate the necessity of this insert on the smooth plot.

Not applicable to H-7637

APPLICABLE DATA

<u>Date Forwarded to:</u>	
<u>Washington D. C. Office</u>	<u>Seattle Proc. Office</u>

- 3 - Hydrographic Sheets, (HO-05148), H-7635
(HO-05248), H-7636
(HO-05348), H-7637 3/21/49
- 4 - Volumes, Sounding Records, Form 275 (Sheet H-7635) 3/18/49
- 5 - Volumes, Sounding Records, Form 275 (Sheet H-7636) 3/18/49
- 4 - Volumes, Sounding Records, Form 275 (Sheet H-7637) 3/18/49
- 9 - Fathograms for Sheet H-7635- - - - - 3/18/49
- 10 - Fathograms for Sheet H-7636- - - - - 3/18/49
- 7 - Fathograms for Sheet H-7637- - - - - 3/18/49
- 1 - Progress Sketch, Hydrography - - - - - (monthly)
- 1 - Sketch, Sheet Layout - - - - - 1/ /48
- 1 - Season's Report (Jan. - April, 1948) - - - 6/21/48
- 5 - Prints, U. S. Engineers Survey, Scale 1:5000 3/21/49
 "Willamette River, Portland to Eugene, Oregon"
 Sheet No. 5 of 52, Revised to June 1940
 Sheet No. 6 of 52, Revised to Oct. 1932
 Sheet No. 7 of 52, Revised to July 1937
 Sheet No. 8 of 52, dated - - July 1932
 Sheet No. 9 of 52, dated - - July 1932
- 1 - Print, U. S. Engineers Survey Scale 1 inch = 100 feet 3/21/49
 "Willamette Falls & Vicinity", Print No. WL-13-1, dated - Sept. 1945

Sp 47262

Date Forwarded to:
 Washington D. C. Office Seattle Proc. Office

- 1 - Print, U. S. Engineers Survey, Scale 1:2000
 "Willamette River, Rock Island Survey", Print
 No. WR-29-7, dated December 1947- - - - - 3/21/49

- 1 - Print, U. S. Engineers Triangulation,
 "Willamette River, Canemah to Coaloa,
 Oregon".- - - - - 3/21/49
 Print No. WR-04-10/5

- 1 - Print, U. S. Engineers, "Low Water Profile,
 Mouth of Willamette to Newburg, Oregon, 1929
 Datum, 1940 Low Water".- - - - - 3/21/49

- Data used in determining difference between river
 datum and elevation of the water surface: 3/18/49

Gage or Staff Locations	Report of Tide Sta. Form 681	Level Record Form 258	Marigrams	Record Staff Readings Form 277
Marina Mart	1		10	} 2 /
Upper Pulp Siding	1	3	5	
Coaloa	1	1		
Wilson (Fish Eddy)	1	1		
Crown-Zellerbach	1	1		
Wilsonville (Boones Ferry)	1	1		

Respectfully submitted,

/s/ R. M. Stone
 R. M. Stone, Lieut., USC&GS
 H. & G. Engr.

Approved:

/s/ Henry J. Healy
 Henry J. Healy, Lt. Comdr., USC&GS
 Commanding Ship HODGSON

HODGSON

APPROVAL SHEET

Hydrographic Survey No. H-7635, (HO-05148)
H-7636, (HO-05248)
H-7637, (HO-05348)

Willamette River

Oregon City to vicinity of S. of Wilsonville, Oregon

Project OS - 325

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

The smooth sheets have not been plotted at the time of writing this report.

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

/s/ Henry J. Healy,
Lt. Comdr., USCG
Commanding Ship HODGSON

H 7635
Ho 05148

Willamette River, Ore.

List of geographic names
penciled on smooth sheet.

Oregon City

Oregon

Willamette River

Willamette Falls

Clackamas County

Rock Island

Tualatin River

Weiss Bridge

West Linn

H 7635
Ho 05148

Willamette River, Ore.
Oregon City to Wilsonville.

Processing Office Notes.

Smooth sheet.

The projection was ruled by hand on Whatman paper.
Topographic signals are from T 8704, T 8706 and T 8707 of 1946
The shoreline was transferred from the same sheets.
It was not inked because the soundings crowded the shore in several places and slightly over-ran it in one or two instances. Blue signals were plotted from sextant angles recorded in the sounding records. *Hydrog. adjusted to shoreline; shoreline inked in Nash. Off.*

Controlling depth.

Except in the approach to the lock at thenfalls, the controlling depth in this reach of the river is 8 feet at ϕ 45 19.02 λ 122 39.28. *4*

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

Edgar E. Smith
Edgar E. Smith
Capt. Engr.

7/13/50

GEOGRAPHIC NAMES

Survey No. H-7635

Name on Survey	Source									
	A	B	C	D	E	F	G	H	K	
<u>Oregon</u>									USGB	1
<u>Clackamas County</u>										2
<u>Willamette River</u>									USGB	3
<u>Oregon City</u>										4
<u>West Linn</u>										5
<u>Willamette Falls</u>										6
<u>Tualatin River</u>										7
<u>Weiss Bridge</u>										8
<u>Rock Island</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. 8-1-50

L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7635

Records accompanying survey:

Boat sheets .1...; sounding vols. 4...; wire drag vols.;
 bomb vols.; graphic recorder rolls 3 envel.;
 special reports, etc.

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

Number of positions on sheet			.728
Number of positions checked			* 246
Number of positions revised			4
Number of soundings revised (refers to depth only)			.26
Number of soundings erroneously spaced			.12
Number of signals erroneously plotted or transferred		
Topographic details	Proposed to be submitted H-7128 (STATIONS)	Time	1.0 hrs
Junctions	H-7128 (STATIONS)	Time	.2 hrs
Verification of soundings from graphic record * Verifiers first sheet.		Time	* .45 hrs
Verification by <i>Ewert E. Thomas</i>	Total time	.119..
		Date	4/5/51
Reviewed by <i>Luigi Jeskud</i>	Time	.19...
		Date	1/31/51

Stini 1.8 hrs

STATISTICS

for

HYDROGRAPHIC SURVEY, (HO-05148), H-7635

Project CS-323
Willamette River

Year 1948
Ship HODGSON

Vol. No.	Day Letter	DATE	No. of Pos.	No. of H.L. Soundings	Launch No.	Stat. Miles of Sounding
1	a	1/19/48	79		141	8.9
1	b	1/20/48	112	3	141	10.4
1	c	1/21/48	19		141	2.1
1	d	1/23/48	80		141	7.8
1	e	1/26/48	11		141	0.6
1	f	1/27/48	83	3	141	5.1
1	g	1/28/48	42	4	141	2.4
4	h	2/5/48	48		141	3.7
4	j	2/10/48	20	7	141	0.3
Total for Launch No. 141 - - -			494	17		41.3

2	a	1/21/48	17	62	Log Walking	1.0
2	b	1/23/48	15	47	Log Walking	0.8
2	c	1/26/48	40	123	Log Walking	1.9
3	d	1/26/48	29	132	Log Walking	1.9
3	e	1/27/48	46	126	Log Walking	1.9
2	f	1/27/48	9	27	Log Walking	0.4
3	g	1/28/48	33	80	Log Walking	0.9
2	h	1/28/48	5	12	Log Walking	0.2
2	j	2/2/48	20	60	Dinghy	0.7
2	k	2/3/48	20	81	Dinghy	1.5
Total for Log Walking & Dinghy 234				750		11.2

Total (Sheet H-7635) - - - - - 728 667 52.5

Total area of hydrography - - - - - 0.5 sq. statute miles

Copy - Amb.

4-7635

ABSTRACT OF RIVER LEVEL CORRECTIONS (SHEET HO-05148)

(To be entered in Tide Reducer Column in Hydro Record Books)

DATE	TIME	MARINA MART	UPPER PULP SIDING
1/19/48	0900 - 1700	6.0 ft.	6.2 ft.
1/20/48	0900 - 1200	5.7 ft.	6.0 ft.
	1201 - 1700	5.7 ft.	5.9 ft.
1/21/48	0900 - 1100	5.5 ft.	5.6 ft.
	1101 - 1700	5.4 ft.	5.5 ft.
1/23/48	0900 - 1700	4.9 ft.	5.0 ft.
1/26/48	0900 - 1300	4.5 ft.	4.5 ft.
	1301 - 1700	4.4 ft.	4.4 ft.
1/27/48	0900 - 1700	4.3 ft.	4.3 ft.
1/28/48	0900 - 1300	4.1 ft.	4.2 ft.
	1301 - 1700	4.1 ft.	4.1 ft.
2/2/48	1100 - 1700	3.4 ft.	
2/3/48	0900 - 1200	3.3 ft.	
	1201 - 1300	3.4 ft.	
	1301 - 1500	3.5 ft.	
	1501 - 1700	3.4 ft.	
2/5/48	0900 - 1700	3.3 ft.	3.3 ft.
2/10/48	0900 - 1300	4.9 ft.	5.1 ft.
	1301 - 1500	5.0 ft.	
	1501 - 1700	5.1 ft.	

Copy - Rms

FATHOMETER CORRECTIONS

H-763 JE35
SHEET (HO-05148)

5 ft.	10 ft.	15 ft.	20 ft.	30 ft.	40A	40B	50A	50B	DAY	DATE
+0.9	+0.7	+0.1	-0.3	-0.9	-1.6	-0.9	-2.3	-1.3	"a"	1-19-48
	+0.6	0.0	-0.3	-1.4	-1.6	-0.9	-2.3	-1.1		
+1.1	+0.8	+0.5	-0.1	-0.4	-0.8	+0.3R	-1.9	-0.6		
	+0.8	+0.5	+0.4R	-0.4	-0.8					
+1.0	+0.6	0.0	-0.3	-1.4	-2.4	-1.4	-2.9	-2.3	"e"	1-26-48
	+0.4	0.0	-0.3	-1.2	-2.2	-0.9				
+0.9	+0.6	+0.3	-0.3	-0.8	-1.4	-0.4	-2.3	-1.2		
	+0.7	+0.1	-0.3	-0.8	-1.5	-0.5				
+1.0	+0.3	0.0	-0.3	-0.9	-1.5	-1.1	-2.7	-2.0	"f"	1-27-48
	+0.3	-0.1	-0.3	-0.9	-1.9	-0.9				
+1.1	+0.6	0.0	-0.3	-0.9	-1.6	-0.6	-2.3	-1.3		
	+0.5	+0.2	-0.3	-0.9	-1.9	-0.7				
+0.9	+0.2	0.0	-0.3	-0.9	-1.9	-1.1			"h"	2-5-48
	+0.3	0.0	-0.3	-1.4						
+0.7	+0.3	0.0	-0.3	-0.9						
	+0.3	-0.1	-0.3							
+7.6	+8.0	+1.5	-5.3	-14.1	-21.1	-9.4	-16.7	-10.0	SUM	
+0.9	+0.5	+0.1	-0.3	-0.9	-1.6	-0.8	-2.4	-1.5	MEAN	

FATHOMETER CORRECTIONS

A & B Scale

a, e, f & h days

Sheet HO-05148

0.0 to 5.0 = +1.0
 5.1 to 7.5 = +0.8
 7.6 to 10.0 = +0.6
 10.1 to 12.5 = +0.4
 12.6 to 15.0 = +0.2
 15.1 to 17.5 = 0.0
 17.6 to 20.0 = -0.2
 20.1 to 23.5 = -0.4
 23.6 to 27.0 = -0.6
 27.1 to 30.0 = -0.8
 30.1 to 33.5 = -1.0
 33.6 to 36.5 = -1.2
 36.6 to 39.0 = -1.4
 39.1 to 41.5 = -1.6
 41.6 to 44.4 = -1.8
 44.5 to 46.7 = -2.0
 46.8 to 49.0 = -2.2

B Scale

to 41.5 = -0.8
 41.6 to 44.5 = -1.0
 44.6 to 47.0 = -1.2
 47.1 to 50.0 = -1.4
 50.1 to 53.0 = -1.6
 53.1 to 55.5 = -1.8
 55.6 to 58.5 = -2.0

✓ 763m

FATHOMETER CORRECTIONS

H-7634-7635
SHEET (HO-05148)

Feet									DAY	DATE
5.0	10.0	15.0	20.0	30.0	40.0	40.0B	50.0A	50.0B		
+0.7	+0.1	-0.1	-0.3	-0.9	-1.4	-1.0	-1.8	-1.1	"b"	1-20-48
	+0.1	-0.1	-0.3	-1.2	-1.7	-0.8				
+0.8	+0.2	-0.1	-0.3	-0.9	-1.4	-0.4	-1.8	-0.5		
	+0.2	0.0	-0.3	-0.9	-1.4	-0.4				
+0.6	+0.2	-0.2	-0.4	-1.0	-1.4	-0.4	-1.5	-0.3		
	+0.2	-0.1	-0.3	-1.0	-1.4	-0.4				
+0.7	0.0	-0.1	-0.3	-0.8	-1.0	-0.4	-1.5	-0.4	"c"	1-21-48
	0.0	-0.1	-0.3	-0.6	-1.4	-0.5				
+0.9	+0.3	0.0	-0.3	-1.1	-1.4	-0.5	-1.7	-0.5		
	+0.2	0.0	-0.3	-0.8	-1.4	-0.4				
+0.5	+0.1	-0.2	-0.3	-0.9	-1.5	-0.8	-1.4	-0.7	"d"	1-23-48
	0.0	-0.2	-0.3	-0.8	-1.3	-0.4				
+0.7	+0.5	+0.1	-0.3		-1.4	-0.4	-1.3	-0.4		
	+0.4	0.0	-0.3	-0.7	-1.3	-0.4				
+0.8	+0.2	-0.1	-0.3	-0.9	-1.8R	-0.8R			"g"	1-28-48
	+0.1	0.0	-0.3	-1.3	-2.3R	-1.4R				
+0.7	+0.1	-0.1	-0.3	-1.4	-2.4R	-1.2R				
	+0.1	-0.1	-0.3	-1.6						
+0.5	+0.3	-0.1	-0.3	-1.0					"j"	2-10-48
	+0.1	-0.2	-0.3							
+6.9	+3.2	-17.0	-6.1	-17.8	-19.4	-7.2	-11.0	-3.9	SUM	
+0.7	+0.2	-0.1	-0.3	-1.0	-1.4	-0.5	-1.6	-0.6	MEAN	

FATHOMETER CORRECTIONS

A & B Scales

b, c, d, g, & j days

Sheet HO-05148

0.0 to 3.0 = +1.0
 3.1 to 5.0 = +0.8
 5.1 to 7.0 = +0.6
 7.1 to 9.0 = +0.4
 9.1 to 12.0 = +0.2
 12.1 to 15.0 = 0.0
 15.1 to 20.0 = -0.2
 20.1 to 23.0 = -0.4
 23.1 to 26.0 = -0.6
 26.1 to 29.0 = -0.8
 29.1 to 32.5 = -1.0
 32.6 to 38.0 = -1.2
 38.1 to 45.0 = -1.4
 45.1 to end = -1.6

B Scale

to 43.0 = -0.4
 43.1 to end = -0.6

✓XB m

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7635

FIELD NO. HO-05148

Oregon, Willamette River, Oregon City to Rock Island
Surveyed in January - February, 1948 Scale 1:5,000
Project No. CS-323

Soundings:

808 Fathometer
Hand lead

Control:

Sextant fixes on shore signals

Chief of Party - W. H. Bainbridge
Surveyed by - R. M. Stone
Protracted by - J. C. Couch
Soundings plotted by - J. C. Couch
Verified and inked by - E. E. Thomas
Reviewed by - I. M. Zeskind, 31 January 1951
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline of the present survey originates with air photographic surveys T-8704, T-8706 and T-8707 of 1946.

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

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Bottom Configuration and Depth Curves

The usual depth curves are adequately delineated.

Shoals, pinnacles, gravel bars and deeps contribute to the marked irregularity of the bottom west of Tualatin River. East of this river, the bottom is less irregular and generally slopes abruptly from shore to depths of 20 to 40 ft.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7636 (1948) on the south. On the north, the present survey extends to the dam at Oregon City.

5. Comparison with Prior Surveys

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

6. Comparison with Chart 6171 (Latest print date 3/21/49)

A. Hydrography

The charted hydrography originates with the U. S. Corps of Engineers' surveys of 1932 (Bp. 39790), 1940 (Bp. 40292), 1941 (Bp. 44684) and 1947 (Bps. 43245 and 44685). A comparison between the charted and present depths indicates differences as great as 8 ft., particularly in the area of irregular bottom southwest of Tualatin River.

The following differences in depths are specifically noted:

1. The 28-ft. sounding charted in lat. $42^{\circ} 20.38'$, long. $122^{\circ} 38.6'$, from the U. S. Corps of Engineers' survey of 1932 (Bp. 39790), falls in present depths of 38-40 ft. The charted 28-ft. sounding is considered to be recorded 10-ft. too shoal and should, therefore, be disregarded.
2. The 3 rocks awash charted in the vicinity of lat. $45^{\circ} 19.95'$, long. $122^{\circ} 39.50'$, originate with soundings of 1.9 ft. on the U. S. Corps of Engineers' survey of 1941 (Bp. 44684). Present depths of 1 ft. adequately delineate the area for charting purposes.
3. The rock awash charted in lat. $45^{\circ} 19.81'$, long. $122^{\circ} 39.32'$, originates with a 1.4 ft. sounding on the U. S. Corps of Engineers' survey of 1941 (Bp. 44684). The present development revealing depths of 3-4 ft. in this vicinity is not adequate to disprove the rock and the rock awash symbol should, therefore, be retained on the chart.

The present survey is adequate to supersede the charted hydrography within the common area, except as noted in paragraph 6A-3 above.

B. Aids to Navigation

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

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was accurately done.
- c. The area of the present survey in which the charted rock awash mentioned in paragraph 6A-3 above falls, has not been adequately developed.

8. Comparison with Project Instructions

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

9. Additional Field Work Recommended

This is an excellent survey, except for the development of the area of the present survey in which the charted rock mentioned in paragraphs 6A-3 and 7c above falls. Additional development of this area should be accomplished to verify or disprove the existence of the charted rock awash.

Examined and approved:


H. R. Edmonston

Chief, Nautical Chart Branch, Acting



H. Arnold Karo

Chief, Division of Charts



L. S. Hubbard

Chief, Section of Hydrography



W. M. Scaife

Chief, Division of Coastal Surveys

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF HYDROGRAPHY AND TOPOGRAPHY~~

24 August 1960

Division of Charts: R. H. Carstens

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 7635

Locality Oregon City to Rock Island, Willamette River

Chief of Party: W. H. Bainbridge in 1948
Plane of reference is Willamette River Datum, reading
0.0 ft. on tide staff at Marina Mart
29.6 ft. below B. M. IAT (1935)

-1.2 ft. on tide staff at Upper Pulp Siding
29.6 ft. below B. M. IAT (1935)

Condition of records satisfactory except as noted below:

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

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7635

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6/23/52	6171	N.W. Burgoyne	Before After Verification and Review completely applied
			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
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			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.