

7120

Diag'd. on Diag. Ch. No. 6154

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. WE-1116 Office No. H-7120

LOCALITY

State Washington

General locality Columbia River

Locality Vancouver Lake, Washington

194 6

CHIEF OF PARTY

E. H. Bernstein

LIBRARY & ARCHIVES

DATE MAR 31 1947

B-1870-1 (11)

7120

MAR 31 1947

Form 537  
(Ed. Nov. 1941)

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

H7120

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-7120

Field No. WE 1146

State Washington

General locality Columbia River

Locality Vancouver Lake

Scale 1:10,000 Date of survey June, 1946

Instructions dated November 28, 1945; May 16, 1946

Vessel WESTDAHL

Chief of party E. H. Bernstein

Surveyed by M. E. Wennermark

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

Protracted by R. D. Broad

Soundings penciled by R. D. Broad

Soundings in ~~fathoms~~ feet at ~~MLW~~ ~~MLLW~~ COLUMBIA RIVER DATUM

REMARKS: Processed in the Seattle Processing Office

Descriptive Report

to accompany

Hydrographic Survey No. H-7120

Field No. WE - 1146

Vancouver Lake, Wash.

June, 1946

Ship WESTDAHL

E. H. Bernstein,  
Commanding.  
M. E. "ennermark,"  
Hydrographer

Project:

This survey was made under Project CS-323, Instructions dated 28 November 1945 and telegraphic authorization to Supervisor, Midwestern District dated 16 May 1946, at the request of the Maritime Commission, District Engineer and harbor authorities of Vancouver, Washington. ✓

Survey Limits and Dates:

The survey covers Vancouver Lake, Washington and was done during the period June 6 - 11, 1946, both dates inclusive. ✓

Vessel and Equipment:

All the sounding was done with the ARS No. 7, a 36 foot landing barge (LPCR), Launch No. 141. The launch was moved up to the lake on June 3rd and was moored at a small boat mooring near Felida Station, Washington, when not in use during the course of the survey. ✓

The 808 Depth Recorder No. 77 was used throughout and functioned very satisfactorily. ✓

Tide Station:

Two tide staffs were installed. Tide Staff No. 1 located near the SW corner of the lake was connected to B. M. "MATT" (22.41 feet above Columbia River Datum) on north shore of the Columbia River by spirit levels. Tide Staff No. 2, located near Vancouver Junction, was connected to B. M. No. 21 in like manner. The two tide staffs were connected by water levels by comparison of 22 consecutive simultaneous quarter hourly readings. The Columbia River Datum as determined by the U. S. Coast and Geodetic Survey was used for the reduction of soundings. Tides were observed on Tide Staff No. 2 while hydrography was in progress. ✓

Smooth Sheet:

The smooth sheet was not made at the time of this report. This is to be done at the Seattle Processing Office. ✓

Control Stations:

The triangulation stations used for control were located by the Photogrammetric Party of Lt. Comdr. R. A. Earle in 1946.

Topographic stations were located with the planetable on aluminum mounted sheet, Field No. WE-C-46 (T-7026a). Standard planetable methods were used. A tracing of the signal locations is being furnished with the boat sheet at this time. The topographic sheet will be submitted at a later date.

Hydrographic stations were located with the sextant by taking rounds of cuts to previously established signals.

Shoreline and Topography:

The shoreline in pencil was transferred from Chart 6154, edition of 1945. Its origin other than that is not known, but is probably based upon U. S. Engineer Surveys. It was intended for use of the hydrography only. A later delineation will be made from air photos by Portland Photogrammetric Office for revised charting purposes. A well defined low water line was established by hydrographic methods.

Soundings:

Depths were measured in feet and recorded to the nearest half foot. Greater refinement seemed impracticable in this survey, because of the fact that the soft muddy bottom resulted in a fuzzy profile on the fathograms.

Bottom specimens were obtained with the handlead and are well distributed throughout the area.

Bar checks were taken twice daily for fathometer comparisons. An abstract of Bar Checks follows:

"a" day  
June 6

Time	Bar Depth	Fath. Reading	Time	Bar Depth	Fath. Reading
10:10	15.0	15.0	15:30	5.0	4.9
	10.0	9.8		10.0	10.0
	5.0	4.8		15.0	15.0
	10.0	9.8		10.0	10.0
	15.0	15.0		5.0	4.9

"b" day  
June 7

Time	Bar Depth	Fath. Reading	Time	Bar Depth	Fath. Reading
10:15	15.0	15.0	16:00	5.0	4.9
	10.0	9.9		10.0	10.2
	5.0	5.1		15.0	15.0
	10.0	9.9		10.0	10.0
	15.0	15.0			
	10.0	9.9			
	5.0	4.9			

"c" day  
June 11

Time	Bar Depth	Fath. Reading	Time	Bar Depth	Fath. Reading
09:45	15.0	15.0	13:40	5.0	5.0
	10.0	10.0		10.0	10.2
	5.0	5.0		15.0	15.2
	10.0	10.0		10.0	10.0
	15.0	15.0		5.0	5.0

Control of Hydrography:

Control was entirely by three-point sextant fixes. Special pains were taken to secure the necessary accuracy for the 1:10,000 scale.

Adequacy of Survey:

The survey is considered adequate for the purpose intended; namely to determine the possible use of this lake for mooring surplus war vessels after dredging.

Crosslines:

About fifteen percent of crosslines were run in this survey. All discrepancies at crossings are less than one-half foot.

Comparison with Prior Survey:

There has been no previous hydrographic survey of Vancouver Lake in so far as this party has been able to determine.

Dangers and Shoals:

The lake has a soft muddy bottom throughout and there are no shoals of any consequence. However, most of the piling at the north end or entrance are old and rotten and many of them have broken off and are not visible at high lake level. Boats should therefore navigate in this area with caution. The location of these piles should be charted. Signals ANT, WAR, VAL and ~~TRAN~~ TOM are piling and were located with the planetable. All other piling were located by the hydrographic party and are clearly indicated on the sheet.

Aids to Navigation:

There are no floating aids to navigation in Vancouver Lake.

Landmarks for Charts:

A list of recommended landmarks for charts will be submitted to the Washington Office on Form 567. Recommended objects which lie within the limits of this sheet are:

- ALCOA STACK 1946 (Concrete Stack)
  - TRAN (Overhead Transmission Tower)
- } Chart Letter 248 (1947)

APPROVED:

*E. H. Bernstein*  
E. H. Bernstein,  
Chief of Party,  
SHIP WESTDAHL

Respectfully submitted,  
*M. E. Wennermark*  
M. E. Wennermark,  
Lt. Comdr., USCGS  
Hydrographer

STATISTICS

For Hydrographic Sheet H-7120 (WE 1146 - 1946)

Project CS-323

Ship WESTDAHL

VOLUME	DAY LETTER	DATE	NO. OF POSITIONS	STAT. MILES OF SOUNDINGS
1	a	June 6, 1946	100	15.5
1	b	June 7, 1946	94	15.2
1	c	June 11, 1946	79	10.9
		Total - - - - -	273 - - - - -	41.6

Area, in square statute miles - - - - - 4.5

OBSERVATIONS FOR SQUAT

LAUNCH 141 (ARS 7) H-7120 (1946)

Observations for squat of Launch No. 141 (ARS 7) were made on 11 October 1946. This was done in the Willamette River in the vicinity of the Hawthorne Bridge. Conditions were good as there was little wind and the river was smooth.

Observations were made with a wye level set up on the north shore and sighting at a level rod held on the deck of the launch just above the fish.

Three sets of observation were made, each consisting of a rod reading taken with the launch idle, two readings with the launch running at slow speed, and two with the launch running at moderate speed (normal speed at which sounding is done).

A summary of results show that there was less than 0.2 foot difference as a result of squat of the launch. In this type of launch with the fish mounted at approximate midships the squat of the stern and the rise of the bow are about the same at various speeds. For these reasons no corrections for squat have been applied to the soundings.

TIDAL NOTE TO ACCOMPANY

HYDROGRAPHIC SURVEY FIELD NO. WE - 1146  
REGISTRY NO. H-7120 (1946)

Tide reducers were obtained from one tide station although two tide stations were established. Tide staff No. 1 at Lat.  $45^{\circ} 39.71$ , Long.  $122^{\circ} 44.16$  and Tide Staff No. 2 at Lat.  $45^{\circ} 40.55$ , Long.  $122^{\circ} 41.50$ . These stations were relatively close together and there was probably little or no significant difference in their tidal datums. Both were connected to well established bench marks and were connected to each other by water levels. Tide staff No. 2 was used for the reduction of soundings.

Plane of Reference used was the Columbia River Datum as previously determined by U. S. Coast and Geodetic Survey and which was 0.127 feet below the zero of Tide Staff No. 2.



APPROVAL SHEET

HYDROGRAPHIC SHEET H-7120 (1946)

FIELD NO. WE - 1146

SHIP WESTDAHL

The boat sheet, fathograms and sounding record have been examined and approved by me. Daily supervision of the work and inspection of the records was made during the progress of the survey. The survey is considered to be complete and adequate.



E. H. Bernstein,  
Lieut. Comdr., USC&GS  
Comdg. Ship WESTDAHL

H-7120 (1946)

WE 1146

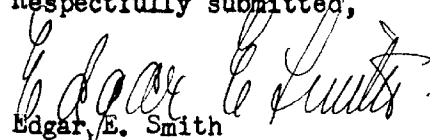
Vancouver Lake, Washington

Seattle Processing Office Notes

The projection is hand made on Paragon (made in Germany) paper.

No further comment need be added to the report.

Respectfully submitted,



Edgar E. Smith  
Cartographic Engineer  
Seattle Processing Office

H-7120

Vancouver Lake, Washington

Geographic Names

Vancouver Lake

Washington

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7120

FIELD NO. WE-1146

Washington, Columbia River, Vancouver Lake  
Surveyed in June 1946 Scale 1:10,000  
Project No. CS-323

Soundings:

Control:

808 Depth Recorder

Visual fixes on shore signals

Chief of Party - E. H. Bernstein  
Surveyed by - M. E. Wennermark  
Protracted by - R. D. Broad  
Soundings plotted by - R. D. Broad  
Verified and inked by - E. L. Barker  
Reviewed by - T. A. Dinsmore, September 16, 1947  
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline is from air photographic surveys T-8665, T-8669 and T-8670 of 1946.

Control for the survey originates with contemporary triangulation and graphic control survey T-7026a (1946). The fixes for supplementary hydrographic signals are recorded in the sounding volume of the present survey.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The zero curve which is completely delineated within the lake represents the Columbia River Datum (M.L.L.W. during lowest river stages). It is noted that actual depths in the lake averaged about 18 feet at the time of this survey (June 6 to 11, 1946).

The bottom is smooth and consists of soft, gray mud.

4. Adjoining Surveys

There are no adjoining surveys in this area.

5. Comparison with Prior Surveys

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

6. Comparison with Chart 6154 (Latest print date 1/13/47)

a. Hydrography

No hydrography is charted within the limits of the present survey as no prior surveys are recorded.

b. Aids to Navigation

No aids to navigation are charted in this area. As noted on page 3 of the Descriptive Report, submerged piling constitute a hazard to navigation at the north end of the lake.

7. Condition of Survey

a. The sounding records and Descriptive Report are complete and comprehensive.

b. The smooth plotting is adequate.


8. Compliance with Project Instructions


The survey adequately complies with the Project Instructions.

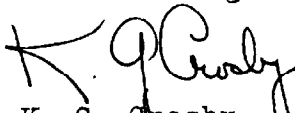
9. Additional Field Work


This is an excellent basic survey and no additional work is required.

Examined and approved:

  
I. E. Rittenburg  
Chief, Nautical Chart Branch

  
Casper M. Durgin  
Chief, Division of Charts

  
K. G. Crosby  
Chief, Section of Hydrography

  
C. K. Green  
Chief, Division of Coastal Surveys

GEOGRAPHIC NAMES  
 Survey No. **H7120**

Name on Survey										
	A	B	C	D	E	F	G	H	K	
<u>Washington</u>		(for title)							USGB	1
<u>Columbia River</u>		(for title)							"	2
<u>Vancouver Lake</u>										3
<u>Lake River</u>										4
										5
										6
										7
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										26
										27

Names underlined in red approved  
 by L. Heck on 9/17/47

RDA

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

# TIDE NOTE FOR HYDROGRAPHIC SHEET

SEP 5 1947

~~Division of Hydrography and Topography~~

Division of Charts: H. W. MURRAY

Plane of reference approved in  
1 volumes of sounding records for

HYDROGRAPHIC SHEET 7120

Locality - Vancouver Lake, Washington

Chief of Party: E. H. Bernstein in 1946

Plane of reference is -- <sup>at</sup> Columbia River Datum, reading  
-0.2 ft. on tide staff ~~at~~ (No. 2) <sup>at</sup> southeastern part of Vancouver Lake  
19.5 ft. below B. M. 21 (1915)

Condition of records satisfactory except as noted below:

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

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. **H7120**

Records accompanying survey:

Boat sheets *.1*...; sounding vols. *.1*...; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls *.2*...;  
 special reports, etc. ....  
 .....

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

Number of positions on sheet	.....	273
Number of positions checked	.....	19
Number of positions revised	.....	3
Number of soundings revised (refers to depth only)	.....	10
Number of soundings erroneously spaced	.....	2
Number of signals erroneously plotted or transferred	.....	0
Topographic details (T.A.D.)	Time .....	8
Junctions	Time .....	0
Verification of soundings from graphic record	Time .....	2

Verification by *F. L. BARKER* ..... Total time *19*... Date *7/23/47*  
T.A.D. 12

Reviewed by *J. A. Dinsmore* ..... Time *2 hrs.* Date *9/16/47*



