

8418

Diag. Chrt. No. 5902-2.

<p>Form 504</p> <p>U. S. DEPARTMENT OF COMMERCE</p> <p>COAST AND GEODETIC SURVEY</p> <p>DESCRIPTIVE REPORT</p>	
<p>Type of Survey <u>HYDROGRAPHIC</u></p>	
<p>Field No. <u>BO-1158</u></p>	<p>Office No. <u>H-8418</u></p>
<p>LOCALITY</p>	
<p>State <u>Oregon-</u></p>	
<p>General locality <u>Columbia River</u></p>	
<p>Locality <u>Cathlamet Bay</u></p>	
<p><u>1958</u></p>	
<p>CHIEF OF PARTY</p> <p>Fred Natella</p>	
<p>LIBRARY & ARCHIVES</p>	
<p>DATE APR 28 1959</p>	

USCOMM-DC 5087

8418

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. ~~4-8118~~

Field No. ~~BO-1158~~

State ~~Oregon~~ ~~Washington~~

General locality ~~off the mouth of the~~ Columbia River

Locality Cathlamet Bay

Scale 1:10,000 Date of survey 28 April to 27 May 1958

Instructions dated 14 November 1958

Vessel CS 184

Chief of party CDR Fred Neballa

Surveyed by LTJg James Sainsbury

Soundings taken by fathometer, graphic recorder, hand lead, wire 806 Fathometer

Fathograms scaled by FN

Fathograms checked by LLP

Protracted by ELS

Soundings penciled by ELS

Soundings in ~~2000~~ feet at ~~MLLW~~ MLLW

REMARKS:

DESCRIPTIVE REPORT

HYDROGRAPHIC SURVEY

(~~BO-1158~~ & ~~BO-1258~~)
H-8418 H-8419

A-PROJECT:

Authority for this survey is contained in instructions, Project C.S. 404, Columbia River Entrance and Estuary, dated 14 November, 1957.

B-SURVEY LIMITS AND DATES:

The Cathlamet Bay Survey, BO-1158, extends from latitude $46^{\circ} 10' 30''$ N to $46^{\circ} 14' 30''$ N and from longitude $123^{\circ} 39' 00''$ W to $123^{\circ} 44' 00''$ W. Work was begun 28 April, 1958 and completed 5 June, 1958.

The Grays Bay Survey, BO-1258, covers the area from latitude $46^{\circ} 14' 00''$ to $46^{\circ} 18' 30''$ and from longitude $123^{\circ} 38' 00''$ to $123^{\circ} 44' 00''$. This survey was started 26 May, 1958 and finished 19 August, 1958.

C-VESSEL AND EQUIPMENT:

Coast Survey Launch number 184, a 26 foot Navy motor whaleboat of plastic laminate construction, was used in the execution of this survey. This launch, being light in weight and having a draft of only one and one half feet, proved ideal for the particular conditions involved, that is, for work in an area of extensive sand and mud shoals where frequent grounding was inevitable. The launch was equipped with an 808 type fathometer. It was found necessary to employ the use of a sounding pole for work in shoal areas. A comprehensive report covering our experiences with the plastic laminate motor whaleboat has previously been submitted.

D-TIDES AND CURRENTS:

Tide reducers for Survey BO-1158 were obtained from a standard tide gage installed at the Coast Guard Base, Tongue Point, Oregon. The tabulated heights, obtained from Washington D.C., were reduced by two and one half feet to correspond to the reference plane of mean lower low water.

The tidal reduction data for Survey BO-1258 was obtained from a standard gage located at Altoona, Washington. These heights obtained from Washington were reduced by 2.9 feet.

Tide reducers applied to the boat sheets were those obtained from the predicted tides at the two respective gages. No correctors for time or range difference were applied.

No current stations were observed.

E-SMOOTH SHEET:

Both projections were hand ruled by Seattle processing personnel. There were no unusual or substandard methods employed in shoreline transfer or control plotting.

F-CONTROL STATIONS:

Basic control for both surveys is triangulation that was established in 1935, 1947, 1950, and 1957. Supplementary control was obtained by photogrammetric means or by use of the three point and check angle fix. Photo support was provided by Photo Field Party Number 722. Photo signal locations for BO-1158 are shown on manuscripts 10357, 10358, 10363, and 10364 and locations of signals for Sheet BO-1258 are shown on manuscripts 10350 and 10357. Refer to "List of Signals" appended to this report for additional information.

G-SHORELINE:

Shoreline for Sheet BO-1158 was taken from blue line copies of incomplete manuscripts 10357, 10358, 10363, and 10364. Sheet BO-1258's shoreline was taken from blue line copies of incomplete manuscripts 10350, 10355, and 10357. Smooth sheet shoreline was also taken from these manuscripts as they are now considered to be complete.

H-SOUNDINGS:

Soundings were obtained primarily through use of 803-J fathometers equipped with 800 fathoms per second reeds. Initial and temperature salinity correctors were determined from bar check data accumulated throughout the season. An abstract of this information is shown on page of this report.

I. CONTROL OF HYDROGRAPHY:

Hydrography was controlled throughout by the three-point fix method through the use of the Standard Navy Sextant. Standard procedures were followed on the two sheets with the exception of the cross channel lines run in the "South Channel" of Sheet BO-1158. This is between positions 6 and 87H. A "zipper" like line was run in order to define the channel limits. This was done by running a line at approximately 60° to the channel, then when the launch approached the channel edge a fix would be taken and the line would turn approximately 120° and head back across the channel. In order to properly space the soundings it was necessary to consider the turning radius of the launch at sounding speed. The turning radius at sounding speed of about six knots is between 12 and 15 meters.

J. ADEQUACY OF SURVEYS:

Both surveys are considered to be complete and adequate and it is recommended that they supersede all prior surveys.

1. ⁸⁴¹⁸ BO-1158 - This survey joins H-8420 on the west and H-8419 on the north. Junctions with these surveys are adequate and depth curves can be satisfactorily drawn.

2. ⁸⁴¹⁹ BO-1258 - This survey joins H-8420 on the west and H-8418 on the south. Junctions with these surveys are adequate and depth curves can be drawn.

K. CROSSLINES:

Approximately nine percent of all hydrography on both sheets were cross lines.

1. ⁸⁴¹⁸ BO-1158 - Crossings were generally good except in areas of steep or irregular bottom. All other crosslines fall within the allowable 4% crossing difference.

2. ⁸⁴¹⁹ BO-1258 - Crossings were good except the irregular bottom in the area bounded by ~~East~~ ^{East}: $123^\circ 43' 30''$ and $123^\circ 44' 00''$ and by ~~Long~~ ^{Long}: $46^\circ 15' 00''$ and $46^\circ 15' 30''$. In this area zero soundings crossed 2 foot soundings. This two foot discrepancy is relieved somewhat as the zero is more than zero and the 2 foot soundings are really 1.8 feet. The difference is less than 2 feet. All other crossings were within the allowable 4% crossing difference.

L. COMPARISON WITH PRIOR SURVEYS:

Both areas surveyed are made up principally of shifting sand and mud shoals, therefore direct comparisons with any prior surveys are meaningless. Generally speaking however, overall comparisons between these and prior surveys is good.

1. ⁸⁴¹⁵ BO-1158 - In comparison with Surveys H-7178, 1947 and H-5927, 1935, it appears as though the main channel has shifted

in a southerly direction and widened between Long. $123^{\circ} 44'$ and $123^{\circ} 45'$ and has shifted north and narrowed between Long. $123^{\circ} 43' 30''$ and $123^{\circ} 44' 00''$. The comparison with H-7179, 1947 and H-7180, 1947 showed no significant changes.

2. BO-1258 - By comparison with H-7179 (1947) and H-5927 (1935) the main channel between $123^{\circ} 40'$ and $123^{\circ} 42'$ appears to have been shifted in a southerly direction. The shoal shown on H-5927 (1935) at Long. $123^{\circ} 40'$ and Lat. $46^{\circ} 15.5'$ appears to have been shifted in a northerly direction by dredging.

M. COMPARISON: WITH CHART:

BO-1158 and BO-1258 - Comparison of these surveys with Chart C&GS 6151 disclosed no significant changes or differences.

N. DANGERS AND SHOALS:

The major portion of both sheets consist of sandy shoals. the only areas that could be considered safe, aside from the main channel, are those secondary channels which are adequately buoyed.

O. COAST PILOT:

There is no new or additional Coast Pilot Information.

P. AIDS TO NAVIGATION:

Fixed aids were permanent in nature and location was accepted as previously determined (1947 and 1957). Floating aids to navigation were located by the three point fix and check angle method. (Refer to Page ____ of this report for additional information)

Q. LANDMARKS FOR CHARTS:

There are no new or additional landmarks for charts in this area.

R. GEOGRAPHIC NAMES:

There are no new or additional geographic names in this area.

Z. TABULATION OF APPLICABLE DATA:

1. Lists of Signals
2. Lists of Floating Aids
3. Lists of Statistics
4. Lists of Bar Checks
5. Phase Comparisons
6. Fathometer Correction Graphs

Wesley P. James
Wesley P. James, ENS, C&GS

for

James C. Sainsbury, LTJG, C&GS

LIST OF SIGNALS

BO-1158

H-8418

<u>SIGNALS</u>	<u>TYPE</u>	<u>MANUSCRIPT OR SOURCE</u>
002/ Abe (TONGUE PT. CHANNEL F.R. LT.)	TRIANGULATION	10357
012 Ace	Photo	10364
035 Aim	Photo	10363
007 Bar	Photo	10363
008 Bat (HARRINGTON PT. LT. "52", 1957)	TRIANGULATION	10357
033 Big	Photo	10363
100 Cab (HARRINGTON PT. LT. "54", 1957)	TRIANGULATION	10357
105 Can	Hydrographic	Vol. 1
184 Cul	Photo	10363
120 Deb	Hydrographic	Vol. 1
164 Dol	Hydrographic	Vol. 1
185 <u>DUMP</u> (U.S.E.), 1935	TRIANGULATION	10358
236 Ego	Photo	10363
251 End	Photo	10363
283 Fug	Photo	10363
307 Gas (PRAIRIE CHANNEL E. LT., 1947)	TRIANGULATION	10357
325 Gem	Photo	10363
372 <u>GREEN</u> , 1950	TRIANGULATION	10358

LIST OF SIGNALS
BO-1158 (continued)

<u>SIGNALS</u>	<u>TYPE</u>	<u>MANUSCRIPT OR SOURCE</u>
331 Hid	Photo	10364
310 Ida	Photo	10363
460 Job	Photo	10363
501 <u>MACGREGOR</u> ID., 1947	TRIANGULATION	10358
507 <u>MARSH</u> ID. LT., 1957	TRIANGULATION	10358
568 Mot	Photo	
539 Mix (RUSSIAN ID. LT.)	TRIANGULATION	10358
588 Nut	Photo	10363
633 Pig	Photo	10364
686 Quo	Photo	10357
721 Red	Photo	10364
787 <u>RUST</u> , 1950	TRIANGULATION	10358
701 Sad	Photo	10364
705 Sam	Photo	10357
734 Silo	Photo	10364
809 Tax	Hydrographic	10363
806 Tap	Photo	10357
939 Why	Photo	10363
924 Yel	Photo	10363
933 Zig	Photo	10363
966 Zoo		

TABULATION OF FLOATING AIDS
BO-1158

BUOY DESIGNATION	DATE OF LOCATION	POSITION NUMBER	DEPTH FT. (REDUCED)	LATITUDE	LONGITUDE
N "10" (R)	6/5/58	30 a	15.2	46 10.61'	123 44.01'
N "12" (R)	6/5/58	29 a	10.6	46 10.41'	123 43.70'
N "14" (R)	6/5/58	28 a	10.0	46 10.47'	123 43.38'
N "16" (R)	6/5/58	27 a	11.2	46 10.43'	123 43.16'
N "12" (R)	5/8/58	25 j	4.5	46 10.77'	123 40.18'
Fl 4 Sec "10" (R)	5/9/58	94 k		46 10.85'	123 40.33'
N "8" (R)	6/13/58 & 5/13/58	5 b 12 m	7.0	46 11.60'	123 42.38'
N "6" (R)	6/3/58	40 w	18.2	46 11.49'	123 42.75'
N "4" (R)	6/3/58	19 w	7.2	46 11.63'	123 43.32'
N "2" (R)	6/3/58	10 w	17.0	46 12.24'	123 43.01'
C "5"	6/13/58	9 b		46 11.93'	123 41.15'
C "3"	6/13/58	12 b		46 12.53'	123 42.83'
Fl 4 Sec "47"	6/13/58	16 b		46 13.63'	123 44.14'
Fl 4 Sec "50" (R)	6/13/58	17 b		46 13.68'	123 43.74'
N "2" (R)	5/16/58	126 b	9.6	46 14.33'	123 41.83'
N "4" (R)	6/13/58	19 b		46 14.17'	123 40.99'
N "6" (R)	5/6/58	15 a		46 13.78'	123 40.36'
C "3"	6/13/58	2b(1258)		46 14.	123 40.

STATISTICS RECORD

11

FOR

FIELD SHEET NO. BO-1158

HYDROGRAPHIC SURVEYS

REGISTRY SHEET # 2418

SURVEYED BY BOAT: No. 124

LOCALITY: COLUMBIA RIVER, CATHLAMET BAY

DATE	DY.	POSITIONS		MILES OF SOUNDINGS				NAUT. MILE		NO. BOTTOM SAMP.		
		LTR.	VOL.	Vol.	Total	Nautical Vol.	Total	Statute Vol.	Total		To & From	Misc. Run
4/28/58	a	1										
4/29	b	1	158			17						
	b	2	27	185		3	20.0			7	0	0
4/30	c	2	175	12		19.2						
	c	3	6	181		0.5	19.7			4	0	0
5/1/58	d	3	177			19.0						
	d	4	45	222		6.1	25.1			5.5	2	0
5/2	e	4	165			18.2						
	e	5	65	230		9.8	28.0			3.2	1.5	0
5/5	f	5	142			14.6						
	f	6	30	172		2.0	18.6			8	2	0
5/6	g	6	212			18.7						
	g	7	55	267		5.0	23.7			5	0	0
5/7	h	7	164			8.0						
	h	8	65	229		15.4	23.4			4	4	0
5/8	i	8	63	63		4.0	4.0			9	0	0
5/9	k	8	146			8.3						
	k	9	12	152		0.0	8.3			4.5	5	0
5/12	l	9	261	261		20.0	20.0			4	3	0
5/13	m	10	220	220		17.5	17.5			4	2	0
5/15	n	11	231	231		19.0	19.0			4	3	0
5/16	p	12	183	183		16.4	16.4			4	0	0
5/17	q	12	62			5.6						
	q	13	118	180		10.0	15.6			3	0	0
5/20	r	13	123			8.7						
	r	14	46	149		4.0	12.7			7	4	0
5/21	s	14	243	243		21.3	21.3			4	3	0
5/23	t	15	108	108		6.7	6.7			8	2	0
5/26	u	15	60	60		4.6	4.6			5	2	0
5/27	v	15	66	66		6.1	6.1			6	0	0

STATISTICS RECORD

FOR

FIELD SHEET NO. BO-1158

HYDROGRAPHIC SURVEYS

REGISTRY SHEET # 8418

SURVEYED BY BOAT: No. 184
 LOCALITY: COLUMBIA RIVER, CATHLAMET BAY

DATE	DY. LTR.	POSITIONS		MILES OF SOUNDINGS				NAUT. MILE		NO. BOTTOM SAMP.
		VOL.	Total	Nautical Vol.	Total	Statute Vol.	Total	To & From	Misc. Run	
6/3/58	W	16	119	119	6.8	6.8		4	1	0
6/4	X	16	148		4.3					
		17	37	185	13.1	17.4		3	2	0
6/5	Y	17	29	22	2.0	2.0		3	3	0
TOTAL				3735		3369		1092	39.5	0
<u>LAUNCH T-169</u>										
6/5/58	a	1	30	30				2	14	29
6/13/58	b	1	23	23				25		22
TOTAL				53				27	14	

BAR CHECKS--CATHLAMET BAY

FATHOMETER 5724

VOL	DAY	DATE	DEPTH IN FEET							
			6	12	18	24	30	36	42	48
1&2	b	4/29	5.0	10.3	16.3	22.3	28.0			
			4.6	10.1	16.4	22.2				
			4.4	10.2	16.0					
			4.4	10.6						
3	c	4/30	---	10.5	16.5	22.5	29.5			
			5.2	11.2	17.2	23.5	29.5			
3	d	5/1	5.8	11.4	17.2	23.0	29.0	35.2	41.2	
			5.3	10.9	17.2	23.3	29.0	35.2		
4	e	5/2	5.4	11.0	17.0	22.5	28.6	34.4	40.7	
			5.5	11.2	17.0	23.0	28.6	34.6		
5	f	5/5	5.2	11.0	17.0	22.6	28.5	34.5		
7	g	5/6	5.2	11.3	17.0	22.3	27.2	34.0	40.0	
			5.2	11.6	17.0	22.4	28.4			
8	h	5/7	5.2	11.0	16.4	22.0	27.8	34.0	40.0	
			4.8	10.6	16.6	22.2	28.4	34.2	40.0	
9	k	5/9	5.0	10.8	16.8	22.2	28.2	34.5		
5.0			10.8	16.8	22.4	28.4				
9	l	5/12	5.0	11.1	16.8	23.0	28.9	35.0	41.0	
			5.0	11.1	17.0	23.2	29.2	35.0	41.2	
10	m	5/13	5.0	11.2	17.2	23.0	28.8	34.7	41.0	
			5.2	11.2	17.2	23.0	29.0	34.5		
11	n	5/15	5.4	11.2	17.0	22.8	28.8	34.6	40.7	
			5.3	11.2	17.2	22.9	28.8	34.8	40.7	
			5.0	11.2	16.8	22.7	28.7	34.8	40.7	46.4
			5.0	10.9	16.8	22.8	28.8	34.6	40.4	46.5
12	p	5/16	5.2	10.9	16.8	22.7	28.4	34.1	40.0	45.9
			5.0	10.8	16.8	22.4	28.2	34.2	40.0	45.9

BAR CHECKS-CATHLAMET BAY

FATHOMETER 5724¹

VOL	DAY	DATE	DEPTH IN FEET							
			6	12	18	24	30	36	42	48
12	q	5/19	5.2	11.1	16.8	22.6	28.4	34.2	40.3	46.0
			5.0	10.8	16.8	22.8	28.4	34.4	40.2	
13	r	5/20	5.2	11.0	17.0	22.8	28.4	34.2	40.4	46.0
			5.0	10.8	16.8	22.8	28.4	34.5	40.2	
14	s	5/21	5.1	11.0	16.8	22.5	28.2	34.0	40.0	45.5
15	t	5/23	5.5	10.8	16.6	22.2	28.0	34.0	39.8	45.6
			5.0	10.8	16.6	22.2	28.0	33.8	40.0	45.5
15	u	5/26	5.0	10.8	16.8	22.4	28.6	34.2	40.3	46.2
			5.2	10.6	16.8	22.6	28.5	34.4	40.5	46.2
15	v	5/27	5.0	11.0	16.8	22.4	28.4	34.2	40.0	45.8
			5.2	10.6	16.8	22.6	28.5	34.4	40.4	
16	w	6/3	---	11.0	16.5	22.2	28.0	34.0	39.5	
			5.2	10.8	16.5	22.2	28.0	34.0	39.8	45.2
			5.0	10.4	16.4	22.4	28.0	34.0	39.8	45.2
16	x	6/4	5.2	11.0	16.8	22.3	28.0	34.0	40.2	
	y	6/5	See "a" day, BO-1258							

TOTAL.....									
MEAN.....	5.1	10.9	16.8	22.6	28.5	34.4	40.2	45.8	
CORR'N.....	0.9	1.1	1.2	1.4	1.5	1.6	1.8	2.2	

ABSTRACT OF BAR CHECKS

FATHOMETER 5725

VOL	DAY	DATE	DEPTH IN FEET							
			6	12	18	24	30	36	42	48
1	b	5/27	5.2	10.8	17.0	22.0	28.0	33.8	39.8	45.6
			5.0	10.6	16.5	22.0	28.0	33.8	39.8	
1&2	c	5/28	5.0	10.8	16.6	22.6	28.2	34.2	40.0	
			5.2	10.6	16.5	---	28.2	34.0	40.0	
3&4	e	6/2	5.2	10.8	16.6	22.4	28.2	34.2	40.2	
			5.2	11.0	16.8	22.4	28.4	34.2	40.2	
4	e	6/2	4.8	10.8	16.6	22.4	28.2	34.2	40.0	
			---	11.2	16.8	22.4	28.2	34.2	40.0	
4	f	6/5	5.2	11.0	16.8	22.5	28.4	34.5	40.2	46.2
			5.2	11.0	16.6	22.8	28.6	34.4	40.4	
5	h	6/13	5.0	11.1	17.2	23.0	29.0	35.0	40.8	
			5.4	11.0	16.8	22.6	28.6	34.6	40.6	
	x	6/4	5.0	11.2	16.8	22.8	28.8	35.0	41.0	
			5.2	11.0	16.8	22.8	28.8	35.0	41.0	
TOTAL.....			66.6	152.9	234.4	292.7	397.6	481.1	564.0	138.2
AVERAGE.....			5.12	10.92	16.74	22.51	28.39	34.36	40.29	46.07
DIFFERENCE.....			0.88	1.08	1.26	1.49	1.61	1.64	1.71	1.93

PHASE COMPARISONS

FATHOMETER #

5724

VOL.	DATE	DAY	A SCALE	B SCALE	DIFFERENCE
8	5/7	h	40.0	40.0	0.0
10	5/13	m	41.0	41.5	0.5
11	5/15	n	40.7	41.9	1.2
			48.4	47.2	0.8
			40.4	40.8	0.4
12	5/16	p	40.0	40.5	0.5
			45.9	46/6	0.7
12	5/19	q	40.0	41.0	1.0
			46.0	46.9	0.9
			40.2	41.0	0.8
13	5/20	r	46.0	46.9	0.9
			40.2	41.0	0.8
14	5/21	s	39.6	40.8	1.2
			45.6	47.0	1.4
15	5/23	t	39.8	41.5	(1.7)R
			45.5	47.2	(1.7)R
			40.0	41.2	1.2
15	5/26	u	40.3	41.0	0.7
			46.2	47.0	0.8
			40.3	41.2	0.9
15	5/27	v	40.0	41.0	1.0
			45.8	46.8	1.0
			40.0	41.8	(1.8)R
16	6/3	w	39.8	40.6	0.8
			45.2	46.0	0.8
			39.8	40.5	0.7
16	6/4	x	40.2	41.0	0.8
TOTAL					19.8
MEAN					0.825
CORRECTION A&B					- 0.8

PHASE COMPARISONS

FATHOMETER #

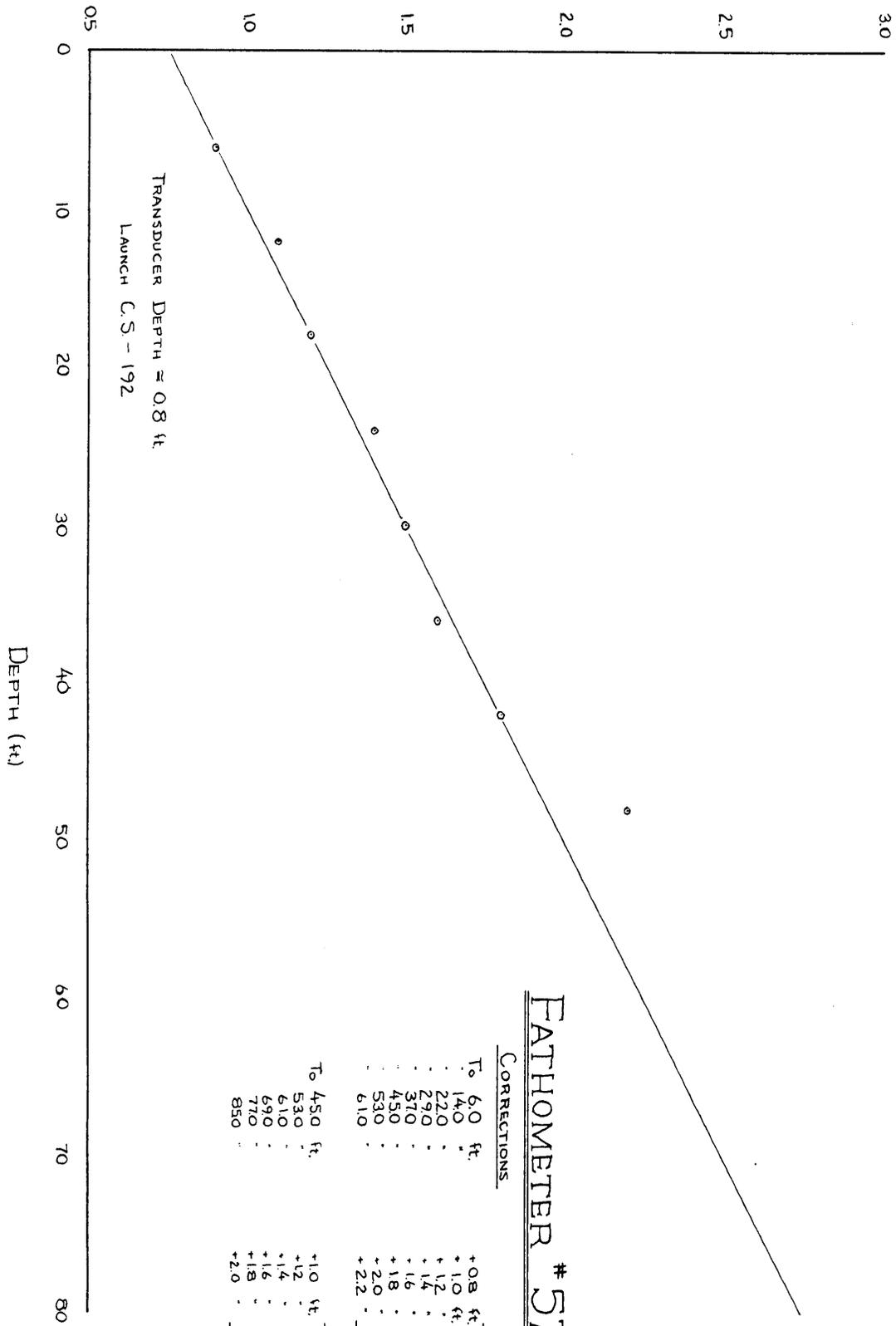
5725					
VOL	DAY	DATE	A Scale	B Scale	DIFFERENCE
1	b	5/27	39.8	40.6	0.8
			39.8	40.6	0.4
1&2	c	5/28	40.0	40.2	0.2
			40.0	40.8	0.8
3&4	e	6/2	40.2	41.2	1.0
			40.2	-----	----
4	e	6/2	40.0	40.4	0.4
			40.0	-----	----
4	f	6/5	40.2	41.2	41.0
			40.4	41.2	0.8
5	h	6/13	40.8	41.0	0.2
			40.6		

TOTAL 5.6

MEAN 0.62

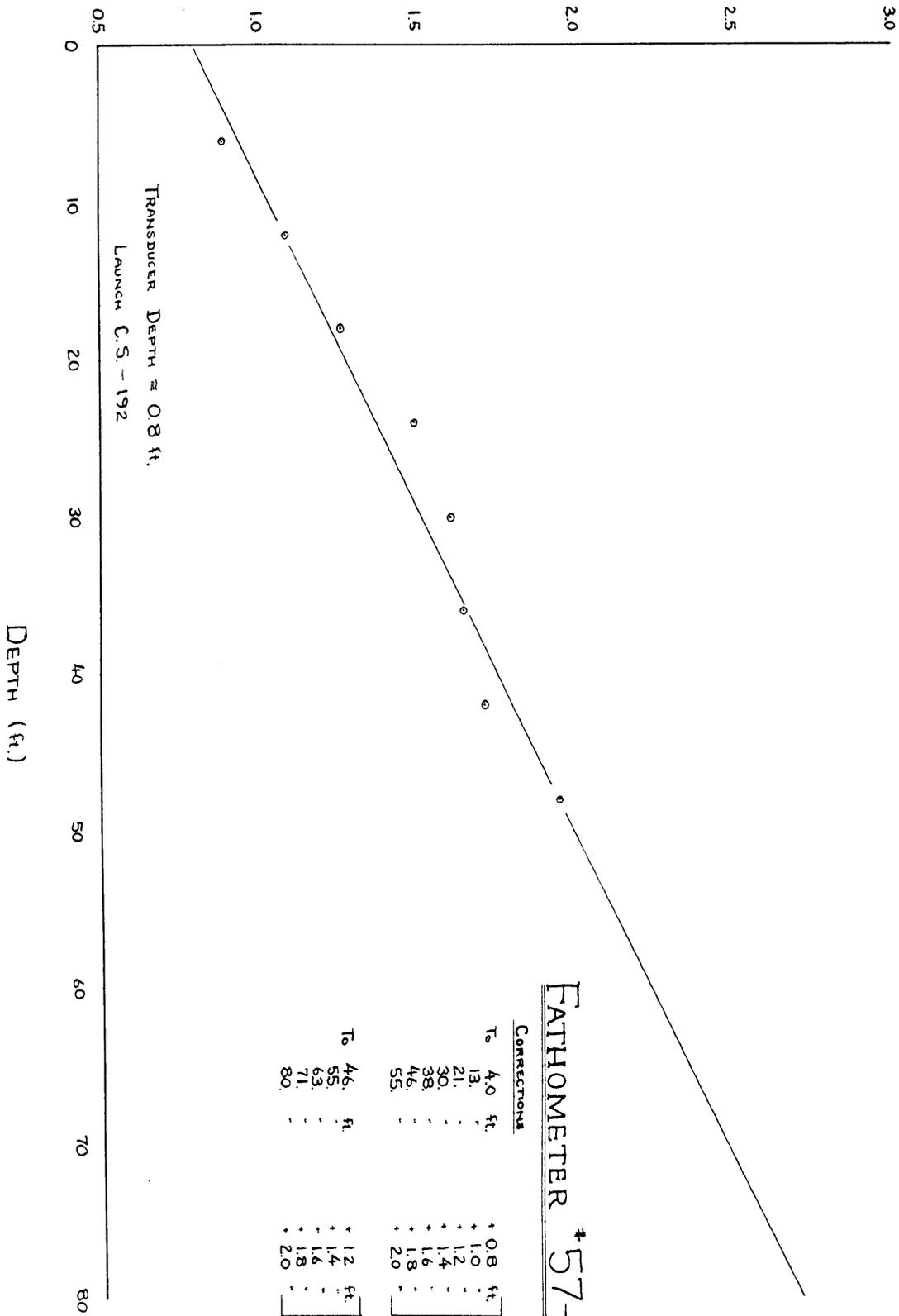
CORRECTION APPLIED A-B SCALE - 0.6

DIFFERENCE IN READING & ACTUAL DEPTH
(ft.)



FATHOMETER # 57-24

DIFFERENCE IN READING & ACTUAL DEPTH



FATHOMETER #57-25

TIDAL NOTE

~~BO-1158 & BO-1258~~

Tidal control for Survey ^{H 8418}BO-1158 was taken from the standard tide gage located at Tongue Point, Oregon, Latitude $46^{\circ} 13'$, Longitude $123^{\circ} 40'$. Tabulated heights were obtained from Washington D. C. and were reduced by $2\frac{1}{2}$ feet to correspond to mean lower low water.

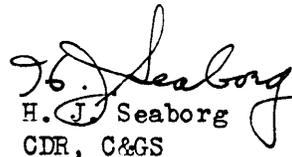
Control for Survey ^{H 8419}BO-1258 was taken from the standard gage installed at Altoona, Washington, Harrington Point, Latitude $46^{\circ} 16'$, Longitude $123^{\circ} 39'$. Tabulated heights were reduced by 2.9 feet to correspond to the plane of mean lower low water.

No correction for time or range difference was applied to either sheet.

APPROVAL SHEET

BO-1158 - ~~BO-1258~~
SA18

During field operations the Chief of Party, Captain Fred Natella, exercised personal supervision of survey work. He examined the boat sheet frequently. It would appear that the surveys are complete and adequate with no additional work required.



H. J. Seaborg
CDR, C&GS

for

Fred Natella
CDR, C&GS
Commanding Ship BOWIE

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

7 July 1959

Plane of reference approved in
18 volumes of sounding records for

HYDROGRAPHIC SHEET 8418

Locality Columbia River, Oregon

Chief of Party: F. Natella in 1958

Plane of reference is mean lower low water, reading
2.5 ft. on tide staff ~~xxx~~ of 1925 at Tongue Point
19.6 ft. below B.M. 1 (1925)

Height of mean high water above plane of reference is 7.5 feet.

Condition of records satisfactory except as noted below:


Signature

Chief, Tides Branch

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8418

Records accompanying survey:

Boat sheets 1; sounding vols. 18; wire drag vols.;
bomb vols.; graphic recorder rolls 10-Envelopes
special reports, etc. 1-Smooth sheet, 1-Descriptive report,
and 1-Special report with Shoran Calibration from Ship BOWIE-1958.

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

Number of positions on sheet
Number of positions checked
Number of positions revised
Number of soundings revised (refers to depth only)
Number of soundings erroneously spaced
Number of signals erroneously plotted or transferred
Topographic details	Time
Junctions	Time
Verification of soundings from graphic record	Time

Verification by.....Total time Date

Reviewed by..... Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-8418

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

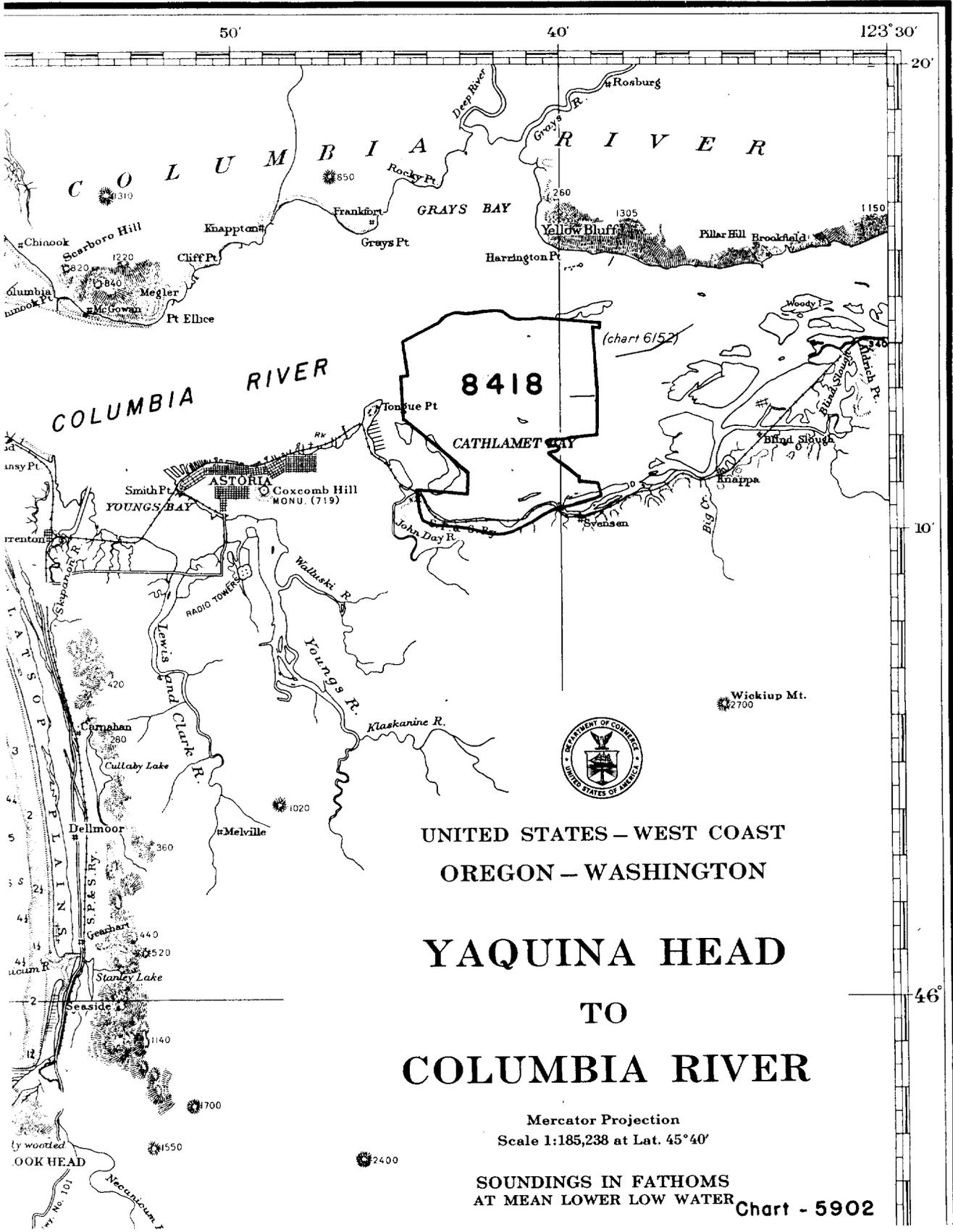
1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
6. All positions verified instrumentally were check marked in the sounding records.
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.
8. The metal protractor has been checked within the last three months.
9. The protracting and plotting of all bad crossings were verified.
10. All detached positions locating critical soundings, rocks or buoys were verified.
11. The boat sheet was compared with the smooth sheet.

12. The spacing of soundings as recorded in the records was closely followed.
13. The bottom characteristics were shown on outstanding shoals.
14. The reduction and plotting of doubtful soundings were checked.
15. The transfer of contemporary topographic information was carefully examined.
16. All junctions were transferred and overlapping curves made identical.
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
18. The depth curves have been inspected before inking.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
20. Heights of rocks were checked against range of tide.
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
22. Unnecessary pencil notes have been removed.
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
24. The low water line and delineation of shoal areas have been properly shown.
25. Degree and minutes values and symbols have been checked.
26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
30. Depth curves were satisfactory except as follows:
31. Sounding line crossings were satisfactory except as follows:
32. Junctions with contemporary surveys were satisfactory except as follows:
33. Condition of sounding records was satisfactory except as follows:
34. The protracting was satisfactory except as follows:
35. The field plotting of soundings was satisfactory except as follows:
36. Notes to reviewer:

Verified by

Date



UNITED STATES – WEST COAST
 OREGON – WASHINGTON

YAQUINA HEAD TO COLUMBIA RIVER

Mercator Projection
 Scale 1:185,238 at Lat. 45°40'

SOUNDINGS IN FATHOMS
 AT MEAN LOWER LOW WATER

Chart - 5902



