8436

Diag. Cht. No. 5902-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. BO-05158 *Office No.* H-8436

LOCALITY

State Oregon

General locality Columbia River

Locality Mott Basin

1958

CHIEF OF PARTY

F. Natella

LIBRARY & ARCHIVES

DATE 4-28-59

USCOMM-DC 37022-P66

8436

FORM C&GS-537
(5-66)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REGISTER NO.

H-8436

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

BO-05158
H-8436 (1958)

State OREGON

General locality COLUMBIA RIVER

Locality MOTT BASIN

Scale 1:5,000 Date of survey Aug. 20 to Sept. 3, 1958

Instructions dated Nov. 14, 1957 Project No. CS-404

Vessel SHIP BOWIE - Launch CS-184

Chief of party FRED NATELLA

Surveyed by OGDEN BEEMAN

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by E. NEWMAN

Graphic record checked by VERIFICATION BRANCH, AMC

Protracted by WESLEY P. JAMES Automated plot by NA

Soundings penciled by WESLEY P. JAMES

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

REMARKS:

DESCRIPTIVE REPORT

Hydrographic Survey BO-05158 H-8436 (1958) Mott Basin

Project: CS-404 1958

Scale 1:5000

Fred Natella Chief of Party

Ogden Beeman Hydrographer

A: PROJECT:

This survey was done in accordance with instructions for Project CS-404 dated 14 November 1957.

B: SURVEY LIMITS AND DATES:

This survey covers Mott Basin including U. S. Naval Station, Tongue Point and Maritime Reserve Fleet Basin. It junctions BO-1358 at its northern end and BO-1158 at its southern limits. H-8228 (1958) Hydrography was accomplished between 20 August and 3 September 1958.

H-8418 (1958)

C: VESSEL AND EQUIPMENT:

Hydrography was accomplished from Launch CS-184 operating from Ship BOWIE. Fathometer 57-25 of the 808 J type was used for all sounding over 5 feet. Soundings under 5 feet were taken with the sounding pole and were denoted as such in the sounding record.

D. TIDE AND CURRENT STATION:

Tidal data for this survey came from the Standard Tide Gage at Tongue Point, Oregon. Predicted tides for Tongue Point, Oregon were used for boat sheet soundings.

E: SMOOTH SHEET:

The projection was ruled by hand aboard the Ship BOWIE. The photo-hydro signals were transferred by scaling the positions from the 10,000 scale manuscripts and plotting them on the smooth sheet. The shoreline and topographic detail was transferred from the 1:5000 manuscripts by the tracing paper method. The transfer of shoreline and topographic detail was verified.

Signal LAY was located by a three-point sextant fix. The fix was a swinger. The smooth location was obtained from the boat sheet. Station PAT was located by sextant cuts from stations ROT, SAD and BAR. The cuts resulted in a triangle about 2 mm on a side. The

center of the triangle was used for the smooth sheet position. The location of these two stations did not cause difficulty when plotting the hydrography.

F. CONTROL STATIONS:

The control for this survey was obtained from triangulation, photo signals and hydrographic signals. Rows of mothballed ships presented unusual problems in control. This problem was overcome through use of ranges located by transit tape survey using photo-topo stations for orientation. A list of signals and their origin will be found following this report. The above mentioned ranges are plotted on T-10357. On the inshore end of lines run between Pier 3 at U.S. Naval Station, Tongue Point, control was unavailable and edges of docks were sometimes used. In all cases the location of the fix on the boat sheet represents the hydrographers fix of position.

G. SHORELINE AND TOPOGRAPHY:

Shoreline and topographic detail were obtained from manuscripts T-10356, T-10357 and T-10362 (~~1957~~) expanded to 1:5000 scale. These manuscripts were compiled on 1:10,000 scale and englarged to 1:5000 scale by the Portland Photogrammetric Office. See Review Par. 2 for smooth sheet shoreline

H. SOUNDINGS:

Soundings over 5 feet were taken with the 808J type fathometer. Adequate phase corrections were made aboard Ship BOWIE in areas of flat bottom. Bar checks and phase corrections are attached to this report. Soundings under 5 feet were taken with the sounding pole. Special note was made in the sounding volume when this method was used. It was necessary to extrapolate the bar check correction curve to attain corrections at greater depths. See attached graph.

Mothballed ships made sounding at docks difficult. Hand lead soundings between the dock and ships using 30 meter spacing was used to survey this area.

I. CONTROL OF HYDROGRAPHY:

Most hydrography was controlled by three-point fixes with U.S. Navy Hydrographic sextants. The presence of mothballed ships made control of hydrography difficult. This was overcome through a system of hydrographic ranges established on the shore. Ranges used in conjunction with dead reckoning or one angle provided adequate control for this survey.

J. ADEQUACY OF SURVEY:

This survey is complete and adequate to supersede prior surveys.

K. CROSSLINES:

Approximately 10% crosslines were run with satisfactory crossing.

L. COMPARISON TO PRIOR SURVEY:

Comparison was made with H-7179 1:5000, 1947. Comparison is difficult because there has been dredging done at various times in this area. The basin south of lat. 46° 12' was dredged out and the old John Day Channel was filled. Certain shoaling was noted around the docks at U. S. Naval Station, Tongue Point. This fact was reported to the Navy.

M. COMPARISON TO CHART:

Apparently the basin south of lat. 46° 12' used by the Maritime Administration was charted from U. S. Engineers surveys made prior to the completion of dredging. Great changes in depth are due to dredging. The unstable character of the bottom and the unusual currents seem to cause considerable change in this area. It is possible that the area has not yet stabilized since the dredging operations were completed. The rock shown on Chart 6151 at Lat. 46° 12' 45" Long. 123° 45' 21" was not noticed during this survey. Rock appears on T-1035 & Boat sheet Not rerecovered during verification

N. DANGERS AND SHOALS:

No dangers or shoals not previously charted were discovered. It is difficult to ascertain whether the shoal at Lat. 46° 11.8' Long. 123° 45.1' has stabilized or if it is continuing to shoal.

P. AIDS TO NAVIGATION:

There are no fixed aids in this area.

There are floating aids as listed below. All aids were located by a three point sextant fix.

Cathlamet Bay, South Channel

LIGHT LIST NUMBER	DESCRIPTION	DEPTH	TYPE & COLOR
1600	Lighted Buoy 2	(34')FL W. 4s(0.4sfl)	Red
	Buoy 3	(12')	Can-Black
1601	Lighted Buoy 4	(23')FL R. 4s(0.4sfl)	Red
	Buoy 5	(17')	Can-Black
	Buoy 6	(19')	Nun-Red
	Buoy 7	(20')	Can-Black
	John Day River Junction Buoy	(17')	Red & Black Horiz. Bands
	Buoy 9	(6')	Can-Black

Q. LANDMARKS FOR CHARTS:

None are recommended.

R. GEOGRAPHIC NAMES:

The following geographic names were penciled on the smooth sheet; COLUMBIA RIVER, JOHN DAY POINT, JOHN DAY RIVER, MOTT BASIN, MOTT ISLAND and TONGUE POINT. No new geographic names are recommended.

Z. TABULATION OF DATA ATTACHED TO THIS REPORT:

1. List of Signals
2. Statistics
3. Summary of Bar Checks
4. Summary of Corrections

Respectfully submitted,

Wesley P. James

Wesley P. James, ENS, C&GS

for

Ogden Beeman, LTJG, C&GS

LIST OF SIGNALS H-8436 (BO-05158) H-8436 (1958)

SIGNAL	TYPE	MANUSCRIPT OR SOURCE
ABE (TONGUE PT CHANNEL, FRONT RANGE LT., L(## 1935	Triangulation ✓	
NAV (TONGUE PT., U.S. NAVAL STATION STACK, 1947	Triangulation	
OLD TONGUE 3, 1947	Triangulation	
Bat	Photo	10356
Cab	Photo	10356
Dim	Photo	10356
Bar	Photo	10356
Few	Photo	10356
Gab	Photo	10356
Hat	Photo	10356
Jim	Photo	10356
Kit	Photo	10356
Lax	Photo	10356
~~Mut~~ Mum	Photo	10356
Net	Photo	10357
Chim	Photo	10357
Peg	Photo	10357
Rot	Photo	10363
Sad	Photo	10363
Tan	Photo	10363
Gin	Photo	10363
Bar	Photo	10356
Off	Photo	10357
Zap	Photo	10357
Dol	Photo	10357
Power	Photo	10357
Met	Photo	10357
Mot	Photo	10357
Pole	Photo	10357
Joy	Photo	10357
Ive	Photo	10357
Gun	Photo	10357
Fug	Photo	10357
Egg	Photo	10357
Pil	Photo	10357
Dud	Photo	10357
Car	Photo	10357
Ant	Photo	10357
Zoo	Photo	10357
Yam	Photo	10363
Wad	Photo	10363
Val	Photo	10363
End	Hydro	Vol. 1
Fish		

LIST OF SIGNAL H-8436 (BO-05158) Continued
H-8436 (1958)

SIGNAL	TYPE	MANUSCRIPT OR SOURCE
Bug	Hydro	Vol. No. 1
Tuf	Hydro	Vol. No. 1
Pat	Hydro	Vol. No. 1
Nan	Hydro	Vol. No. 1
Ray	Hydro	Vol No. 1
Lay	Hydro	Vol. No. 1
Box	Hydro	

STATISTICS FOR BO 05158
H-8436(1958)

DATE	DAY	VOL.	POSITIONS	NM MILES	ST. MILES	B.S. ✓
21 AUG	a	I	301	20.5	23.6	0
21 AUG	a	V	118	HAND SOUNDING		0
22 AUG	b	II	139	11.0	12.6	0
25 AUG	c	II	108	7.5	8.6	1
26 AUG	d	III	104	6.0	6.7	0
20 AUG	e	V	122	HAND SOUNDING		0
28 AUG	f	III	99	6.0	6.9	6
2 SEPT	g	IV	135	9.0	10.3	4
3 SEPT	h	IV	63	2.5	3.9	0
TOTALS			1189	62.5	72.8	11

BAR CHECK
EO-05158
Fathometer Number 57-25 (808)

DAY	6	12	18	24	30	36	42	48
a	4.5	11.0	16.2	22.0	27.8	33.6	39.0 39.0	45.0
	---	10.8	16.0	22.0	27.7	33.8	40.0B	45.8B
b	5.0	11.0	16.2	22.5	28.8	34.5	39.0 40.0	---
	5.2	11.0	16.2	22.0	28.0	34.0	39.8 B	---
c	5.2	10.5	16.0	21.0	27.0	33.0		
	5.5	10.5	16.0	22.0	27.9	34.0		
d	5.0	10.8	16.8	22.0	28.8	34.5	40.2 40.0	46.5
	5.0	10.8	16.5	22.5	28.5	34.5	40.0 B	46.0 B
f	5.0	10.8	16.8	22.3	28.5	34.5	---	---
	4.5	10.8	16.8	22.8	28.5			
g	5.0	11.0	15.5	22.5	28.0	34.3	40.0 40.5	
	5.0	10.8	16.2	22.0	28.5	34.8	40.0 B	
h	5.0	11.0	16.3	22.0	28.0	35.0	40.2 40.5	---
	5.0	10.8	16.5	22.5	28.3	34.3	40.2 B	---
TOTALS	64.9	151.6	228.0	310.1	394.3	444.8	398.4 A 200.0 B	91.5 A 91.8 B
Avg	5.0	10.8	16.3	22.2	28.2	34.2	39.8 A 40.0 B	45.7 A 45.9 B
Corr:	+1.0	+1.2	+1.7	+1.8	+1.8	+1.8	+2.2 B scale -0.2	+2.3

Phase corrections from ship comparisons correcting to A Scale:

B	C	D	E
-0.5	-1.5	-2.1	-2.7

TIDAL NOTE

Survey BO-05158
H-8436 (1958)

Tidal data for this survey came from the Standard Tide Gage at Tongue Point, Oregon. The Washington Office furnished records as requested.

APPROVAL SHEET

Survey BO-05158
H-8436(1958)

During field operations the Chief of Party, Captain Fred ~~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. D. Seaborg
CDR, C&GS

for

Fred Natella
CDR, C&GS
Comdg. Ship BOWIE

Form 712
(11-30-55)

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

27 May 1959

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 8436

Locality Columbia River, Oregon

Chief of Party: Fred Natella

Plane of reference is mean lower low water, reading
2.5 ft. on tide staff ~~xx~~ 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:

William Shofnos
Signature

Chief, Tides Branch

Comm-DC 34330

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8436

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Oregon			(Title)						BGN	1
John Day Point										2
John Day River										3
Mott Basin										4
Mott Island										5
Tongue Point			(Tide station)							6
Columbia River									BGN	7
Cathlamet Bay			Names approved 5-8-59							8
John Day Channel					L. Heck Chas. E. Hemmeter			7-8-1974		9
South Channel										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8436 ✓

Records accompenying survey:

Boat sheets 1; sounding vols. 5; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 3-Envelopes

special reports, etc. 1-Smooth sheet and 1-Descriptive report.

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		1189.
Number of positions checked		250.
Number of positions revised		30.
Number of soundings revised (refers to depth only)		300.
Number of soundings erroneously spaced		40.
Number of signals erroneously plotted or transferred		1
Topographic details	Time	8.
Junctions	Time	4.
Verification of soundings from graphic record	Time	100

Verification by Harry R. Smith Harry R. Smith ....Total time 409... Date 6-29-72

Reviewed by Edmund G. Brunson ..... Time 117... Date 3:15:74

Inspected by - H. L. Myers 28 hrs 7/15/74

Caribbean 18 hr 10/11/74

M-2232-1

H-8436

Items for Future Presurvey Reviews

The bottom is considered adequately developed on the present survey except in the area of moored vessels. Major differences noted in the bottom since the prior surveys are attributed to dredging and spoiling.

Position Index Lat.	Long.	Bottom Change Index	Use Index	Resurvey Cycle
461	1235	3	4	25 Years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8436 FIELD NO. BO-05158

Oregon, Columbia River, Mott Basin

SURVEYED: August 20 - September 3, 1958

SCALE: 1:5,000 PROJECT NO.: CS-404

SOUNDINGS: 808 J Echo Sounder and Pole CONTROL: Sextant Fixes on Shore Signals

Chief of Party ..... F. Natella
Surveyed by ..... O. Beeman
Protracted by ..... W. P. James
Soundings Plotted by ..... W. P. James
Verified and Inked by ..... H. R. Smith
Reviewed by ..... E. G. Brunson
Date: March 15, 1974
Inspected by ..... G. K. Myers

1. Description of the Area

This survey covers Mott Basin, John Day Channel, and the Maritime Reserve Fleet mooring area. The bottom in these areas has been dredged by the Corps of Engineers.

The predominant bottom characteristics are sand, mud, and gravel.

2. Shoreline and Control

The origin of the control is adequately covered in Part F of the Descriptive Report. Hydrographic signal LAY was replotted from recorded angles at time of verification.

The shoreline originates with reviewed photogrammetric surveys T-10356 (1951-1957), T-10357 (1951-1957), and T-10363 (1955) enlarged to double scale.

3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves are adequately delineated except in areas of ship moorings. The 3-foot depth curve was added to delineate the bottom configuration more completely.

C. The development of the bottom configuration and the investigation of least depths are considered adequate except in areas where ships were moored.

4. Condition of the Survey

The sounding records, smooth plotting, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual except that three signals falling in the mooring area were not described. These are assumed to be temporary. Values of some of the shoaler soundings, largely those plotted within the area of the low water line, are questionable due to the loss of the bottom trace in the initial on the fathograms. The gain should be temporarily adjusted when this condition occurs.

5. Junctions

The junctions with unverified surveys H-8420 (1958) on the northwest and H-8418 (1958) on the south and northeast will be discussed in the reviews of those surveys.

6. Comparison with Prior Surveys

A. H-1017 (1868), 1:10,000
H-1725 (1885), 1:10,000
H-5928 (1935), 1:10,000

These early surveys have been compared with and were superseded in the reviews of the surveys discussed in the following paragraph. Further consideration is not necessary in the present review.

B. H-7178 (1947), 1:10,000
H-7179 (1947), 1:5,000
H-7180 (1947), 1:5,000

A comparison between the present and the prior surveys reveals extensive dredging and deposition of spoil in this

area. Except for the pier area and approaches at Mott Basin much of the remaining area has been dredged and the spoil used to enlarge Mott Island and create the neck of land on the east. Areas previously bare at MLLW were dredged to depths as great as 32 ft. Shoaling of 2-6 ft. is apparent in the vicinity of the piers at Mott Basin.

The following items are noted:

(1) The elevation (4) of the rock awash in lat. 46°12.78', long. 123°45.31' on H-7179 has been carried forward in place of the (8) shown on T-10356. This decision is supported by the fact that the rock was not noted on adjacent lines on the present survey run at 4 ft. of tide and on another prior survey H-5928 (1935) the rock is shown as uncovering 5 ft. at MLLW.

(2) The several piles shown on the prior surveys have been removed by dredging or are considered to be non-existent and should be disregarded.

(3) The rock awash on H-7179, in lat. 46°12.76', long. 123°45.35' was not verified or disproved and has been carried forward on the present survey.

(4) A rock awash on H-7180 in lat. 46°10.9', long. 123°44.3' was not verified or disproved and has been carried forward to the present survey.

(5) A section of ledge in the vicinity of lat. 46°10.9', long. 123°44.3' has been carried forward from T-4263 (1926).

(6) Two soundings have been retained from H-7179 to supplement present depths.

With the additions previously noted the present survey is adequate to supersede the prior surveys within the common area.

7. Comparison with Chart 6151 (latest print date March 3, 1973)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by the partial application of information from the present survey boat sheet and smooth

sheet before verification and review, and with Corps of Engineers survey of 1950 (Bp 46602).

In the area southeast of Mott Island, particularly, moored ships prevented adequate development of the bottom. Soundings from Bp 46602 charted in this area should be retained until additional information becomes available. It should be noted that general depths from the present survey are about 10 feet deeper here than the Corps of Engineers soundings, indicating possible dredging subsequent to the 1950 survey.

The following specific items should be noted:

(1) The pier charted at lat. 46°11.5', long. 123°45.5' subsequent to the present survey from 1966 photographs (Bp 71835) should be retained on the chart.

(2) The pier in ruins charted in lat. 46°12.4', long. 123°45.5' from 1957 air photographs was not verified or disproved by the present survey and should be retained on the chart.

(3) The wreck in lat. 46°11.27', long. 123°44.56' from the present survey records was never reported for charting, nor shown on the boat sheet; it is assumed that it was temporary, and later removed.

Except as noted above the present survey is adequate to supersede the charted hydrography.

B. Aids to Navigation

Several aids to navigation have been established or relocated subsequent to the date of the present survey.

The aids presently charted adequately mark the features intended.

8. Compliance with Instructions

This survey adequately complies with the Project Instructions.

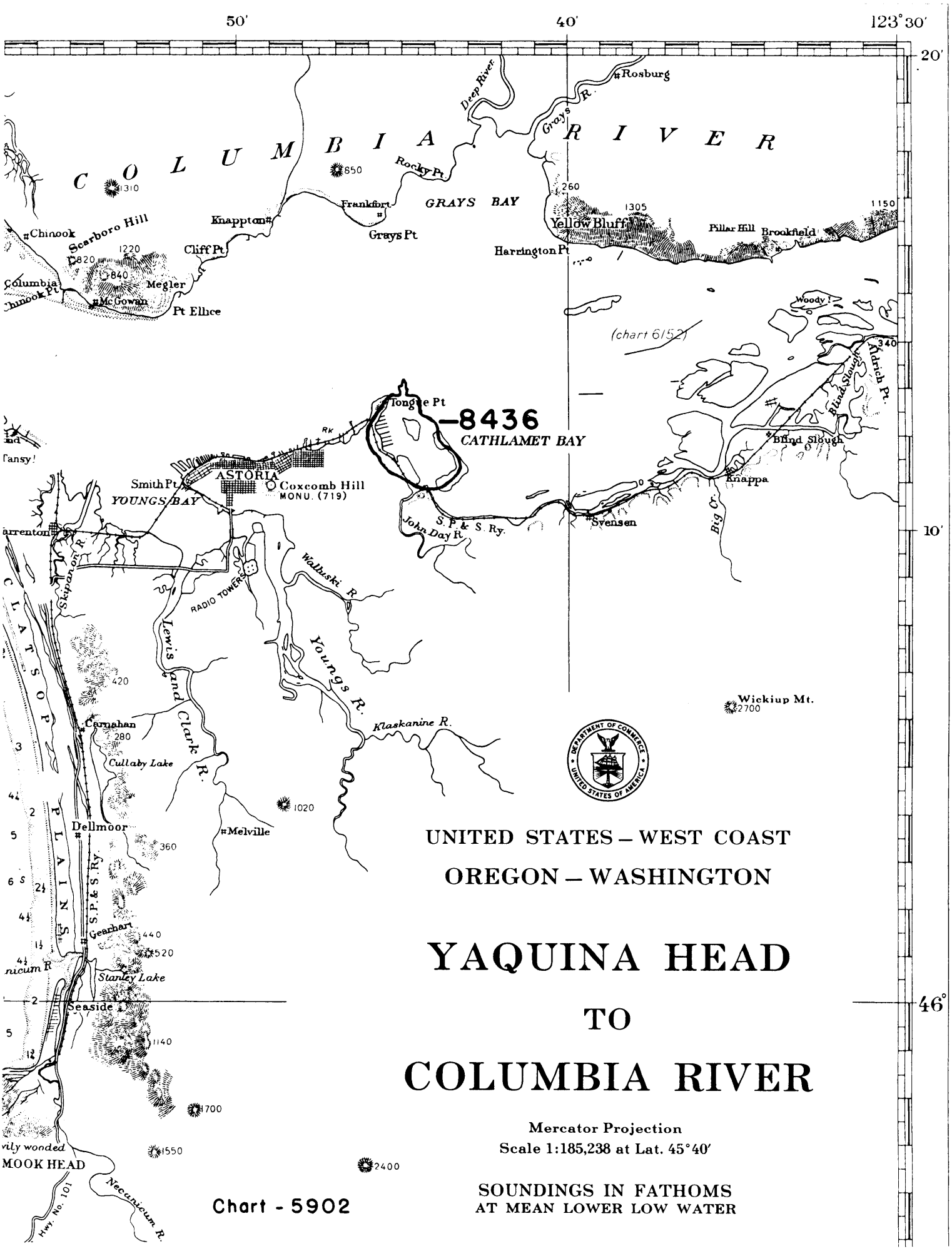
9. Additional Field Work

This is considered to be an adequate survey. However, as the present survey does not provide basic coverage in the mooring area and is deeper than Corps of Engineers surveys from which soundings are charted, a resurvey of the mooring area is recommended.

Examined and Approved:

John C. Boyer
Chief
Marine Chart Division

Robert C. Munson
Associate Director
Office of Marine Surveys
and Maps


50'
40'
123°30'
20'
10'
46°
COLUMBIA RIVER
GRAYS BAY
CATHLAMET BAY
YOUNGS BAY
Rosburg
Deep River
Grays R.
Rocky Pt.
Frankfort
Grays Pt
Knappton
Chinook
Scarboro Hill
Cliff Pt.
Megler
McGowan
Pt Ellice
Harrington Pt
Yellow Bluff
Pillar Hill
Brookfield
Woody I.
(chart 6152)
Aldrich Pt.
Blind Slough
Knappa
Svensen
Big Cr.
Tongue Pt
8436
ASTORIA
Coxcomb Hill
MONU. (719)
Smith Pt
S. P. & S. Ry.
John Day R.
Skipanon R.
Warrenton
RADIO TOWERS
Walluski R.
Lewis and Clark R.
Youngs R.
Klaskanine R.
Wickiup Mt.
2700
CLATSOP PLAINS
Carnahan
Cullaby Lake
Dellmoor
Melville
Gearhart
Necanicum R.
Stanley Lake
Seaside
MOOK HEAD
Hwy. No. 101
Necanicum R.
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

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8436

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
9/27/74	(18521) 615	Green	applied in ~~Full~~ Part ~~Before~~ After Verification and Review
5/19/81	18521	R. G. Lellis	Fully applied ~~Before~~ After Verification and Review Drg. #50
			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.