

7178

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Diag'd. on diag. ch. No. ~~6002-1~~

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HO-1147 Office No. H-7178

LOCALITY

State Oregon

General locality Columbia River

Locality Cathlamet Bay

1947

CHIEF OF PARTY

E.H. Bernstein

LIBRARY & ARCHIVES

DATE December 1, 1947

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DEC 1 1947

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H-7178

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. HO 1147

REGISTER NO. H-7178

State Oregon

General locality Columbia River

Locality Cathlamet Bay

Scale 1:10,000 Date of survey May & June, 1947

Vessel HODGSON

Chief of Party E. H. Bernstein

Surveyed by Lt. Comdr. Bernstein and Lieut. R.M. Stone

Protracted by C. E. Petersen

Soundings penciled by E. E. Petersen

Soundings in ~~fathoms~~ feet

Plane of reference MLLW, Columbia River Datum

Subdivision of wire dragged areas by _____

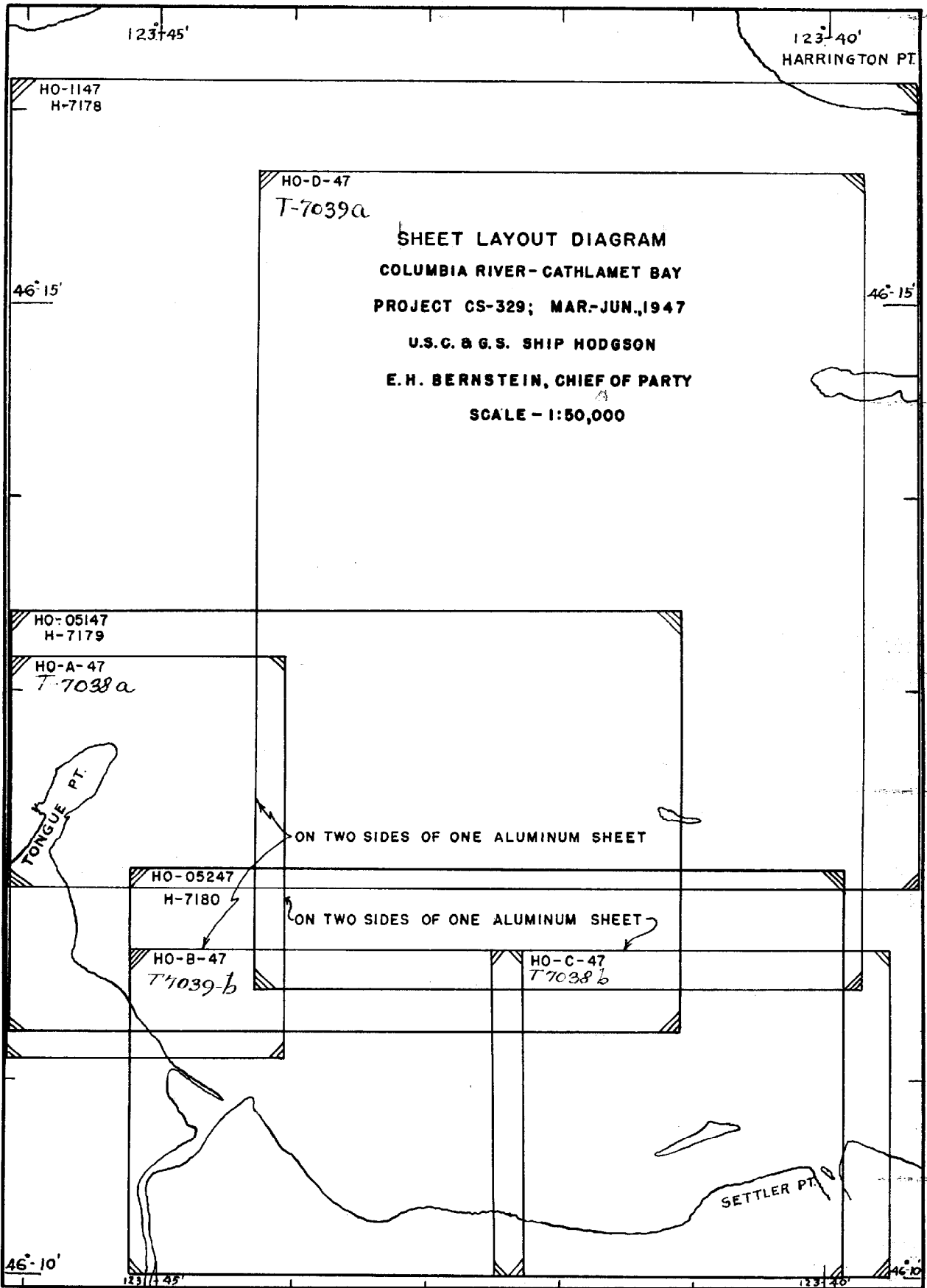
Inked by _____

Verified by _____

Instructions dated 25 February 1947, 19____

Remarks: _____

Smooth Sheet and Plotting by the Seattle Processing Office



123°45'

123°40'
HARRINGTON PT.

HO-1147
H-7178

HO-D-47
T-7039a

SHEET LAYOUT DIAGRAM
COLUMBIA RIVER-CATHLAMET BAY
PROJECT CS-329; MAR.-JUN., 1947
U.S.C. & G.S. SHIP HODGSON
E. H. BERNSTEIN, CHIEF OF PARTY
SCALE - 1:50,000

46°15'

46°15'

HO-05147
H-7179

HO-A-47
T-7038a

TONGUE PT.

ON TWO SIDES OF ONE ALUMINUM SHEET

HO-05247
H-7180

ON TWO SIDES OF ONE ALUMINUM SHEET

HO-B-47
T-7039-b

HO-C-47
T-7038-b

SETTLER PT.

46°10'

123°45'

123°40'

46°10'

Descriptive Report to Accompany

Field Sheet Nos. -Registry Nos.

HO-1147

H-7178

HO-05147

H-7179

HO-05247

H-7180

Project CS-329

March 19 to June 26, 1947

Ship HODGSON

E. H. Bernstein,
Commanding Officer.

PROJECT:

The hydrographic survey was made in accordance with instructions dated 25 February 1947, Project CS-329. It was at the request of the U. S. Maritime Commission and of the Public Works Officer, U. S. Naval Station, Tongue Point, Oregon.

SURVEY LIMITS AND DATES:

This survey constitutes a new basic hydrographic survey in Cathlamet Bay, Columbia River. The area of work lies between the shoreline of the bay, Tongue Point, main ship channel on the northwest, and limit of Chart 6151, on the east.

Field work was begun on 19 March 1947 and concluded on 26 June 1947.

Junction was made along the main ship channel with the survey of the U. S. Engineers of 30 August 1946 (CL-18-61) and of 6 September 1946 (CL-^{Bp. 43122}21-41); of 20 August 1945 (CL-18-57) in the area adjacent to and immediately east of Tongue Point. Junction and overlap was made along the

eastern edges of Sheets HO-1147 (Reg. No. 7178), HO-05247 (Reg. No. H-7180) with survey H-5927. ⁽¹⁹⁴⁷⁾ Junctions are satisfactory south of Lat. 13', and ⁽¹⁹⁴⁷⁾

in the channel immediately south of Harrington Point. In the region between Lat. 13' and 14!5 overlap was extended for 0.8 statute miles and yet it was impossible to make completely agreeing junction with the previous survey because of extensive changes. With this large overlap it ⁽¹⁹⁴⁷⁾ junction is adequate for charting

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should be satisfactory to merge the new with the old survey.

VESSEL AND EQUIPMENT:

All the hydrography on Sheet 05247 (Reg. No. H-7180)⁽¹⁹⁴⁷⁾ was done with a thirty six foot landing barge, Launch No. 141. Soundings were taken with a 808 depth recorder No. 625. This launch was also used for Sheet 05147 ✓ (Reg. No. H-7179)⁽¹⁹⁴⁷⁾. Launch No. 114 equipped with an 808 depth recorder No. 72 was used for Sheet 1147 (Reg. No. 7178)⁽¹⁹⁴⁷⁾, and a few soundings on Sheet 05147 (Reg. No. H-7179)⁽¹⁹⁴⁷⁾.

The squat and settlement of Launch No. 141 had been previously, accurately determined and found to be negligible. The squat for Launch No. 114 has not yet been accurately determined. From observation it appears that the squat and settlement of this launch are also negligible for the sounding speed for which it was operated while sounding.

The main specific purpose for making this survey was to determine silting or shoaling in the dredged areas adjacent to piers at Tongue Point, where about 400 naval vessels are moored and also in the channel running NW - SE'ly between triangulation stations BREAK and TRIPOD. This channel was dredged during the war to serve as a landing strip for airplanes of the previous Naval Air Station. The other purpose was to determine any possible shoaling near the (at present) eight groups of cargo ships a total of 200 that are anchored in the channel extending from the tip of Tongue Point towards McGregor Island, and also to discover and develop any other anchorage areas in these regions that could be used. Accordingly it was necessary to make extensive use of ^{the} handlead for taking soundings off the piers and the anchored Maritime Commission vessels because of the obstruction that the moored vessels offered to the use of the launch.

H-7179

Corrections to the fathometer soundings were obtained from tables prepared from the data furnished by the three daily bar tests. These

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tests extended to a depth of 50 feet and were made for the various scale settings of the fathometer. Very few depths greater than 50 feet were found and the direct bar checks are therefore sufficient to cover all corrections.

Because of the large scale of the hydrographic sheets special precautions were taken to snap angles accurately, to maintain uniform speed of the launch and to take angles as close as possible to the fathometer transceiver.

TIDE AND CURRENT STATIONS:

(See discussion under Tide Note attached).

One current station was occupied for 77 hours. This station was in Lat. $46^{\circ} 12' 54''$ Long. $123^{\circ} 44' 35''$ about 0.3 miles westward of the moorage area.

SMOOTH SHEET:

Projections for smooth sheets were not made by the field party.

CONTROL STATIONS:

The area is covered by adjusted triangulation. Only two stations, BEAR (USE) 1905 and MILEPOST 95, 1934, were available for the three 1:5000 topographic sheets. Accordingly triangulation control had to be established. During the course of the triangulation all Nonfloating Aids to Navigation that fall in the area were determined by intersection. Only two hydrographic stations were located by a round of sextant angles, all other hydrographic stations being located by graphic control. All control stations are therefore accurately fixed. Lists of the scaled positions of graphic control stations needed for transfer between 1:5000 and 1:10000 form part of this report.

SHORELINE AND TOPOGRAPHY:

The marsh area was sketched by the hydrographic party in the vicinity of stations MAX, NIL and NOD, and also a small area midway between stations

H-7180

M-7120
OWL and QUO. The shoreline was not resurveyed except in the small parts inked on the topographic sheets whereon also changes were redetermined. The layout of the piers and other works in the vicinity of the Naval Station were determined from Y. & D. Drawing No. 414-308^{Sp. 43/21} and D. P. W. No. 46-32, and Y. & D. Drawing No. 414-371^{Sp. 43/20}, D. P. W. 46-131 furnished by the Public Works Officer, Thirteenth Naval District, Seattle, Washington. Reproductions of these two drawings are being sent with the boat sheets. As graphic control stations were established on the northeastern corner of seven of the eight piers the above two drawings can be accurately fitted in.

The old shorelines were left uninked on the boat sheets.

The low water line is thoroughly and completely defined by soundings.

SOUNDINGS:

Corrections to soundings are definite and accurate except for a dozen or so soundings over a 100 feet in the mole immediately north of Tongue Point for which it was necessary to project the bar tests on the fathom scale of the fathometer. The very strong current and swirl prohibited the making of comparative tests in the deeper water.

ADEQUACY OF SURVEY:

The survey is adequate and in greater detail than ever done before and should supersede all prior surveys for charting. No parts of the survey are incomplete or of questionable accuracy. Pains were taken to develop critical areas. Depth curves can be adequately drawn at the junctions.

(See Survey Limits above).

CROSSLINES:

Many crosslines were run on all sheets beside the numerous overlaps that were brought about by the diversity of directions of the channels. Completely satisfactory crossings and agreement with handlead soundings prevail.

All Floating Aids to Navigation were located by sextant fixes. ✓

Many vertical handlead and bottom characteristics were made on all sheets. ✓

COMPARISON WITH PRIOR SURVEYS:

Cathlamet Bay in general is an area subject to continuous change whereas the general channels and shoal areas maintain the general outline. Changes in detail are uniformly found. Man made changes are definite in the dredged areas adjacent to the piers at the Naval Station and in the water runway, landing strip, mentioned above and in the high water shoreline between stations DIX^{H-7179} and GUY. Disturbance to the natural conditions through the dredging of the landing strip has resulted in the river attempting to close off the northern entrance to this water area. A tendency is noticeable that the river is gouging under the lines of moored cargo vessels with a tendency towards sedimentation to the downstream side of the vessels especially toward the southern or shoaler water end. It is not believed that this shoaling will result in a particularly dangerous condition for the moored vessels if they are kept not too close to the eighteen foot curve. Because of the demands of local interests a clear passage has been maintained northward of the moorage area. As it is intended to moor many additional vessels the value of this survey to the Maritime Commission was proven by the detailed development of other possible anchorage areas. In this connection, the development of the slough known as John Day Channel is of particular interest to the Naval and Maritime Commission authorities who at present maintain moorage of light draft vessels in Long. 42!5 and Lat. 40!7 respectively.

H-7179

The old rock crib 90 meters S x E of the tip of Tongue Point no longer bares at low water, having been scattered by wave action.

Considerable changes are apparent between Lat. $46^{\circ} 13'$ to $46^{\circ} 15'$ and Long. $123^{\circ} 41'$ to $123^{\circ} 43'$, in the shifting of shoal areas and particularly in the old deeper channel in Lat. $46^{\circ} 15'$.

The general agreement with U. S. Engineers ^{Survey} of 17 May 1946, CL-18-59, main moorage area, is good. Bp. 43119

The general shifting downstream of the shoal area, in Lat. $46^{\circ} 15'$, is apparent. This is a tendency that is noticeable in all shoals in the area.

Sounding line, "a" day, up to "21a", was run on Harrington Point Range. This establishes the bearing of this range. *After plotting smooth sheet it is noted that this line deflects about 1° from the line of the range lights.*
DANGERS AND SHOALS: 1913 light (Δ) deleted and 1935 light (\odot) plotted. - rearrange. E. 158.

The tip of a shoal bearing 2 feet at MLLW is 1000 meters E x S from Tongue Point Channel Front Range and is within 200 meters from the eastern edge of the main ship channel.

A new channel is cutting through in an E - W direction just north of the sand flat in Lat. $46^{\circ} 13' 15''$. Long. $123^{\circ} 42' 7''$.

The group of pilings, 370 meters NE of Main Channel Beacon No. 4 which is submerged at high water and bares five feet at MLLW should be charted, as they constitute a danger.

Offlying rocks off Tongue Point and John Day Point were determined in position. H-7179

COAST PILOT INFORMATION:

The Maritime Commission has established two temporary fixed range markers, Station NUT and OAK for indicating the entering range on 98° True to their main moorage area. A sounding line was run along this range. H-7179

The old channel running in a E x S and W x N direction just south of Main Channel Beacon No. 4 is much used by local smaller craft.

During the period of the survey the prevailing weather encountered in the area was generally fair. Moderate SW'ly breezes developed per-

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sistently in the late forenoon and continued until the late evening. This developed very bad tide rips to the northeastward of Tongue Point, in the fresh water currents, making very rough conditions for launch hydrography especially during periods of high tide at which this work had to be done because of the extensive shoal areas. In Cathlamet Bay to the east and southeast of Tongue Point smooth sea prevailed at all times.

Currents were measured June 9 to June 12, 1947, in the channel 0.8 miles E x S of the tip of Tongue Point and were found to attain a maximum of about 1.2 knots with a slack current period of about 1/2 hour with no reversal on the flood. H-7179

AIDS TO NAVIGATION:

The positions of fixed aids to navigation and floating aids to navigation are given on Forms 567 attached to this report.

The azimuth of the entering range established by the Maritime Commission for their moorage basin is 98° true. The azimuth of Harrington Point Range is 54° True. (This should be verified from the smooth sheet ~~Smooth Sheet Az. 54-48 between range lights~~) H-7179

LANDMARKS FOR CHARTS:

A copy of Form 567 "Landmarks for Charts" is attached hereto.

GEOGRAPHIC NAMES: 24

A Geographic Name list is attached to this report.

APPLICABLE DATA:

2-Marigrans, "Tide Records", Tongue Point.

1-Volume, "Leveling Record", Form 258, Tongue Point.

2-Volumes, "Leveling Record," Form 258, Settler Point.

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- 1- Sketch Sheet Layout
 - 1- ~~Sketch~~ Current Observations Form 270
 - 1- Cahier Triangulation Computations. ✓
 - 1- Progress Sketch Triangulation
 - 6- Marigram Tide Records- Settler Point
 - 4- Topographic Sheet Ho-A-47, HO-B-47, HO-C-1947, HO-D-47.
 - 14 Volumes, Sounding Record, Forms 275.
 - 34 Fathograms (15-0) [9ca. H-7178; 16ca H-7179; 9ca. H-7180.]

Respectfully Submitted,

E. H. Bernstein

E. H. Bernstein
Lt. Comdr. U.S.C. & G.S.
Chief Of Party.

TOPOGRAPHIC STATIONS
 Sheet Ho-A-47
 T-7038a

Station	Latitude	D.M. (m)	Longitude	D.P. (M)
ACE	46° 12'	1150 (103)	123° 45'	479 (812)
BAG	46° 12'	1330 (522.5)	123° 45'	508 (778)
BOX	46° 12'	1113 (739)	123° 45'	596 (690)
CAT	46° 12'	975 (879)	123° 45'	621 (665)
CON	46° 12'	849.5 (1003)	123° 45'	688 (598)
DUO	46° 12'	777 (1075)	123° 45'	741 (545)
DOC	46° 12'	677.5 (1175)	123° 45'	645 (641)
DIX	46° 12'	687.5 (1165)	123° 45'	567 (1219)
END	46° 12'	629.5 (1223)	123° 44'	1027 (259)
EAR	46° 12'	422 (1431)	123° 45'	571 (715)
FRY	46° 12'	347 (1506)	123° 45'	112 (1174)
FEW	46° 12'	348.5 (1504)	123° 44'	1019 (265)
FAR	46° 12'	261 (1592)	123° 45'	519 (767)
GAL	46° 12'	102 (1751)	123° 45'	468 (818)
FAT	46° 12'	14 (1839)	123° 44'	1266 (20)
HAT	46° 11'	1795 (57.5)	123° 45'	416 (870)
GAG	46° 11'	1823 (30)	123° 44'	1227 (59)

TOPOGRAPHIC POSITIONS

SHEET HO-D-47
T-7039a

NAME	LATITUDE LONGITUDE	METERS	NAME	LATITUDE LONGITUDE	METERS
LUG	46° 13' 123° 42'	782 (1070.5) 1022 (264.5)	LIZ	46° 11' 123° 43'	--- (1087) 497.5 (789)
PUP	46° 12' 123° 39'	372.5 (1480) --- (150)	LAD	46° 11' 123° 43'	--- (788) 628 (658.5)
PIT	46° 12' 123° 40'	703.5 (1149) 304 (982.5)	KED	46° 11' 123° 43'	--- (288.5) 916 (370.5)
OUT	46° 12' 123° 41'	540.5 (1312) 181.5 (1105)	JOB	46° 11' 123° 43'	--- (121.5) 1027.5 (259)
OAK	46° 12' 123° 41'	793.0 (1059.5) 803.5 (483.0)	MOP	46° 11' 123° 43'	--- (929) 1077.5 (209)
NUT	46° 12' 123° 42'	893.5 (959) 203.5 (1083)	KIM	46° 11' 123° 43'	--- (655.5) 1227 (59.5)
NEO	46° 12' 123° 42'	1056.5 (796) 694 (592.5)	JUG	46° 11' 123° 44'	--- (390) 81 (---)
MAL	46° 12' 123° 42'	1222 (630.5) 907 (379.5)	JOY	46° 11' 123° 44'	--- (257) 153.5 (---)
JIM	46° 12' 123° 43'	32.5 (1820) 1167.5 (119)			
IRK	46° 12' 123° 43'	144 (1708.5) 1237.5 (49)			
IVY	46° 12' 123° 43'	216 (1636.5) 1248.5 (38)			
JAY	46° 12' 123° 44'	164 (1688.5) 40.5 (---)			
ION	46° 12' 123° 44'	5 (1847.5) 303 (---)			
OWL	46° 11' 123° 40'	--- (133) 698 (588.5)			
QUO	46° 11' 123° 40'	--- (504) 53 (1233.5)			
NIG	46° 11' 123° 41'	--- (491) 1105 (181.5)			
MAW	46° 11' 123° 42'	--- (218) 660.5 (626)			

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

NON-FLOATING AIDS CIRCUMSTANCES FOR CHARTS

TO BE CHARTED STRIKE OUT ONE
TO BE DELETED

Ship **RODASCH Cassa, Washington** July 31, 1947

I recommend that the following objects which have (assessment) been inspected from seaward to determine their value as landmarks, be charted on (date) the charts indicated.

The positions given have been checked after listing by **R. H. Stone**

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION				METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED	
				LATITUDE		LONGITUDE								DATUM
				D. M.	METERS	D. P.	METERS							
	John Day Channel Buoy No. 85 off John Day Pt.			568 (1284) 1122	123-44	684 (603) 29	NA 1927	MAY (30-05247) 1947	X			6151		
	John Day Channel Buoy No. 84			741 (1112) 842	123-44	893 (394) 653	"	"	X			"		
	John Day Channel Buoy No. 8 (red)			1460 (393) 807	123-43	1147 (1147) 194	"	"	X			"		
	Prairie Channel Buoy No. 8 (12-Red)			1011 (1011) 1460	123-43	634 (634) 146	"	"	X			"		
	John Day Channel Buoy No. 8 (red) (off John Day Pt.)			1016 (1016) 807	123-43	1093 (1093) 194	"	"	X			"		

R. H. Bernstein Chief of Party

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

NON-FLOATING LANDMARKS FOR CHARTS

~~Ship HOUSON~~
Cannas, Washington

TO BE CHARTED }
~~TO BE CHARTED~~ } STRIKE OUT ONE

31 July 1947

I recommend that the following objects which have ~~(insert name)~~ been inspected from seaward to determine their value as landmarks, be charted on ~~(deleted from)~~ the charts indicated.

The positions given have been checked after listing by R. M. Stone

E. H. Bernstein Chief of Party.

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION					METHOD OF LOCATION SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
				LATITUDE		LONGITUDE		DATUM						
				D. M. METERS	D. P. METERS	D. M. METERS	D. P. METERS							
	Radio	Vertical Radio Antenna, U.S. Naval Station, Tongue Pt.	Radio	596.9 46-12	1129.7 (156.7)	123-45	1927	NA	1947	X			6151	
	Stack	Naval Station, Tongue Pt. Stack, concrete, tall	Stack	440.4 46-12	1197.0 (89.4)	123-45	"	"	April	X			"	

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

NONFLOATING AIDS ~~AND MARKERS~~ FOR CHARTS

TO BE CHARTED
~~TO BE DELETED~~

STRIKE OUT ONE

Ship **MOYSESON** **Camas, Wash.**

31 July 19**47**

I recommend that the following objects which have ~~(have not)~~ been inspected from seaward to determine their value as landmarks, be charted on ~~(detected from)~~ the charts indicated.

The positions given have been checked after listing by **R. M. Stone**

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION				METHOD OF LOCATION SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
				LATITUDE		LONGITUDE							
				D. M. METERS	° ' "	D. P. METERS	° ' "						
		Tongue Point Channel Range Front (932)		16-13	1505.9 (346.6)	123-44	144.6 (111.2)	1927	NA	X		6151	
		Tongue Point Channel Rear Range (933)		16-14	170.5 (162.1)	123-43	539.4 (716.2)	"	"	X		"	
		Harrington Point Range Front (939)		16-15	1111.0 (711.6)	123-40	71.2 (1213.9)	"	"	X		"	
		Main Channel Beacon No. 2 (943)		16-14	113.6 (1739.0)	123-42	1001.7 (284.0)	"	"	X		"	
		Main Channel Beacon No. 4 (944)		16-14	1140.9 (711.7)	123-41	835.9 (419.5)	"	"	X		"	
		Pillar Rock Channel Lower Range Front (986.3)		16-15	1067.6 (785.0)	123-39	614.0 (671.2)	"	"	X		"	
		Miller Sands Channel No. 4 (984)		16-15	622.0 (1230.6)	123-39	535.7 (719.4)	"	"	X		"	
		Grays Bay (932)		16-16	117.7 (1734.9)	123-43	1097.3 (187.6)	"	"	X		"	

R. H. Bernstein

Chief of Party.

L 1497 (1947)

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

~~NON~~FLOATING AIDS OR MARKERS FOR CHARTS

TO BE CHARTED
~~TO BE DELETED~~

STRIKE OUT ONE

Ship RODSON Gemas, Washington July 31, 19 47

I recommend that the following objects which have (~~been~~) been inspected from seaward to determine their value as landmarks, be charted on (~~deleted from~~) the charts indicated.

The positions given have been checked after listing by R.M. Stone

R. H. Bernstein Chief of Party.

STATE CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION				METHOD LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED	
			LATITUDE		LONGITUDE								DATUM
			°	'	°	'							
	Tongue Point Naval Base Buoy No. 2 (967-3)		46-12	1297 (955)	123-46	375 (911)	1927	MA	H-7179 (HO-05147)	May 1947	X	6151	
	Tongue Point Naval Base Buoy No. 4		46-12	1100 (752)	"	472 (814)	"	"	"	"	X	"	
	Tongue Point Naval Base Buoy No. 6 (967-5)		46-12	986 (846)	"	521 (765)	"	"	"	"	X	"	
	Miller Sands Channel Lighted Buoy No. 13 (985)		46-15	844.0 (1400.8)	123-39	735 (550)	"	"	H-7178 (HO-05147)	"	X	"	
	Miller Sands Channel Lighted Buoy No. 9 (983)		46-15	1452 (1088.6)	123-40	812 (473)	"	"	"	"	X	"	
	Miller Sands Channel Lighted Buoy No. 1 (982)		46-15	769	123-39	1234 (51)	"	"	"	"	X	"	
	Miller Sands Lighted Buoy No. 2 (981)		46-15	106 (1746)	123-40	947 (338)	"	"	"	"	X	"	
	Tongue Point Crossing Lighted Buoy No. 6 (936)		46-13	98 (1754)	123-45	874 (412)	"	"	"	"	X	"	
	Tongue Point Crossing Lighted Buoy No. 8 (937)		46-13	581 (1271)	123-44	987 (299)	"	"	"	"	X	"	
	Tongue Point Crossing Lighted Buoy No. 10 (938)		46-13	1142 (719) (1285)	123-43	938 (378)	"	"	"	"	X	"	
	John Day Channel Buoy No. 57		46-11	(570)	123-44	1039 (248)	"	"	H-7179 (HO-05147)	"	X	"	
	John Day Channel Buoy No. 52		46-11	955 (898)	123-44	965 (322)	"	"	"	"	X	"	
	John Day Channel Buoy No. 5 (Red) off John Day Pt.		46-10	1748 (105)	123-44	450 (837)	"	"	H7180 (HO-05247)	"	X	"	
	John Day Channel Buoy No. 57 off John Day Pt.		46-10	1613 (240)	123-44	183 (1104)	"	"	"	"	X	"	

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

October 11, 1946

OBSERVATIONS 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 down stream), 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			
		Level Rod Readings				in Feet			
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	<u>0.04</u>			Mean	<u>0.13</u>

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Approval Sheet

Hydrographic Survey

Cathlamet Bay, Columbia River


Sheet H-7178
(HO-1147)

Sheet H-7179
(HO-05147)

Sheet H-7180
(HO-05247)

Project CS-329

The boat sheets, ^{and} sounding records have been examined and approved by me. The smooth sheet had not been plotted at the time of the writing of this report. The survey is complete and adequate.


E. H. Bernstein,
Lt. Comdr., USC&GS
Chief of Party.

TIDE NOTE

to accompany

Hydrographic Survey of Cathlamet Bay, Ore.

Project GS - 329

18
7178

7179

7180

The primary tide station maintained by the U. S. Coast and Geodetic Survey at Tongue Point, Oregon, Lat. $46^{\circ} 12' 15''$, Long $123^{\circ} 26' 14''$, was used for furnishing tide reducers. Tide values for the month of May were furnished by the Washington Office; values for the month of June were scaled by the field party. Value of 2.5 feet on the staff was taken at MLLW. H-7179

A portable automatic gage was installed at a tide station at Settler Point, Lat. $46^{\circ} 10' 15''$, Long. $123^{\circ} 40' 15''$. A height of 1.49 feet corresponded to the value of MLLW on the staff at the station. H-7180

Tide reducers to the nearest 0.2 of a foot were determined from both stations, values from each being used in the adjacent areas and from the simultaneous records, the values of the reducers in the intermediate zone were determined. Since the tidal differences and constants between Tongue Point and Settler Point and Harrington Point were correlated to those at Settler Point. The three hydrographic sheets were accordingly divided into Zones I, II, and III by red lines indicated on the boat sheets. It appears that large differences in time and height, between the two tide stations develop at the low water stages with no such marked differences noticeable at the high water stages. Therefore the most probable restrictive effect of the various sloughs was taken into account in laying out the zones. In the sounding values Roman numerals in blue indicate the zones in which the ensuing soundings lie.

H-7178

HO 1147

Seattle Processing Office Notes

Smooth Sheet- Control-

The projection is hand made on Whatman Paper.

The triangulation is from the lithographed sheets of the adjusted triangulation of 1935, and from field computations of triangulation by Bernstein in 1947.

The topographic stations are from sheets ~~HO-A-47~~ ^{H-7038(1947), H-7039(1947)} and ~~HO-B-47~~ by this party.

Hydrographic cuts to TAR and NOR are indexed in the sounding records.

Grossings-

The crossings are generally good. There are peculiarities along the sides of sand bars, as well as at other places, which are probably due to unimportant narrow sloughs which are not, and do not need to be, developed in sufficient detail to show all the meanderings of the depth curves.

Shoreline-

The shoreline on this sheet is omitted. See Director's letter of 27 August 1947, No. 83-bdh. (with H-7179(1947) - Shoreline added (See Review, part)

Comparison of eastern limits of survey with Chart 6152-

The general arrangement of sand flats and channels is very much like the chart, but there are changes from silting and scouring. Along the easternmost line of the sounded area, there is a 23 ft. sounding in Woody I. Channel just north of Green Island. The chart implies thirty feet or better. The depth on the bar near Snag I. Beacon is close to the charted depth. The channel running N.W. from Snag I. Beacon is deeper on H-7178 than on the chart. The main ship channel near Miller Sand Channel light No. 4 is deeper than the charted $33\frac{1}{2}$ feet in January 1946. These differences along the eastern limit of the sounded area are noted to indicate the difficulty of ending the survey on a line which will make a good junction with prior surveys.

But junction is adequate for charting

Fathograms were rescaled by the field party and further spot scanned in the Processing Office.

H-7178

HO 1147

List of Geographic Names 414

Columbia River

Cathlamet Bay

Tongue Point

Green Island

Miller Sands

Main Ship Channel

POST-OFFICE ADDRESS: Ship HODGSON, General Delivery, Camas, Washington

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TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

29 September 1947

To: Officer In Charge
Seattle Processing Office
U. S. Coast & Geodetic Survey
1500 Westlake Avenue North
Seattle 9, Washington

Subject: Position of NORTH GABLE, GREEN ISLAND FISH HOUSE.

ϕ 46°-13.05'
 λ 123°-39.3'

You should use the hydrographic position determined in 1947 by sextant cuts of the north gable of the fish house. Three of these cuts were taken from triangulation stations and two in rounds of angles from the launch in fixed position. The intersections are strong and very good. There is no doubt as to the correctness of the hydrographic position.

Please make changes in the Lists of Objects furnished with this sheet to show NOR as a hydrographic signal and not as a triangulation position.

You notice from Lt. Comdr. Earle's letter that ^{was} that forwarded to you on 30 August 1947, that the Washington Office did not publish the G.P.'s for several other objects, although descriptions were published, because doubt existed as to their correctness. It appears that NORTH GABLE, GREEN ISLAND FISH HOUSE, is one of these. The position that the Washington Office furnished evidently is that of the western gable of this building, this gable having been confused with the northern one, in some of the directions taken by the triangulation observer in 1935.

The fish house is an ell shaped building with the northern and western gables in the relative positions shown by the hydrographic and triangulation points. The building has not been rebuilt since 1935. It is also noted that on a print of the local U. S. Engineers that this station is shown as a topographic rather than as a triangulation point whereas other Coast and Geodetic Survey triangulation points on their sheets are definitely shown with the triangle symbol.



4

Thank you for consulting with us about this problem.

cc to:
Supervisor, MW District
Washington office

E. H. Bernstein,
Lt. Comdr., USC&GS
Commanding Ship HODGSON



POST-OFFICE ADDRESS: Ship HODGSON, General Delivery, Canas, Washington

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

29 September 1947

To: Director
U. S. Coast and Geodetic Survey
Washington, D. C.

Subject: Position of Triangulation Station.

Enclosure: Copy of letter to Officer in Charge, Seattle Processing
Office, 29 September 1947.

The triangulation position of NORTH GABLE, GREEN ISLAND FISH HOUSE 1935, is wrong. This fish house is located approximately 7 miles ENE of Astoria, Oregon, on the north side of Green Island, in the Columbia River, approximate Lat. $46^{\circ} 13' 11''$ north and Long. $123^{\circ} 39' 13''$ west. It appears that the triangulation position is that of the western and not the northern gable, the identity of these gables having been confused by the triangulation observer in 1935.

A revised Recovery Note, Form 526 is enclosed.

E. H. Bernatein,
Lt. Comdr., USCGS
Commanding Ship HODGSON

CC to:
Seattle Processing Office ✓
Supervisor, MN District



STATISTICS

for

HYDROGRAPHIC SURVEY H-7178 (1947)

PROJECT CS-329

SHIP HODGSON

Vol.	Day Letter	Date	No. of Positions	No. of H.L. Sdgs.	Stat. Miles of Sdgs.	Launch No.
1	a	5/16/47	97		17.8	114
1	b	5/23/47	129		13.8	114
1	c	5/26/47	96		12.3	114
2	d	5/27/47	40		5.8	114
2	e	5/28/47	104		15.7	114
2	f	5/29/47	74		11.3	114
2	g	6/5/47	148		17.0	114
3	h	6/6/47	134		23.0	114
3	j	6/7/47	131		28.3	114
3	k	6/9/47	51		15.0	114
3&4	m	6/10/47	91		20.0	114
4	n	6/11/47	67		9.3	114
4	p	6/18/47	124		18.2	114
4	q	6/24/47	73		9.0	114
4	r	6/25/47	39		2.0	114
TOTALS - - -			1,398		218.5	

Area in square statute miles - - - - - 11.2

Respectfully submitted,

Edgar E. Smith

Edgar E. Smith
Cartographic Engineer
Seattle Processing Office

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. **H7178**

Records accompanying survey:

Boat sheets **1**....; sounding vols. **4**.....; wire drag vols. **0**.....;
 bomb vols. **0**.....; graphic recorder rolls **9**.....;
 special reports, etc.

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

Number of positions on sheet			1398
Number of positions checked			22
Number of positions revised			5
Number of soundings revised (refers to depth only)			11
Number of soundings erroneously spaced			0
Number of signals erroneously plotted or transferred			0
Topographic details	<i>Curtis worked 130 hours on this sheet, including 8 hrs. on topo.</i>	Time	3 Hrs.
Junctions		Time	9 Hrs. as of 8-13-48
Verification of soundings from graphic record		Time	16 Hrs.
Verification by <i>Stephen Rose</i>		Total time	180 hrs. as of 8-13-48
		Date
Reviewed by <i>J. Jordan</i>		Time	57
		Date	9/7/48

GEOGRAPHIC NAMES

Survey No.

1717S

Name on Survey:

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
	A	B	C	D	E	F	G	H	K
<u>Oregon</u>			(for title)						U S G B 1
<u>Columbia River</u>			// //						2
<u>Main Ship Channel</u>									3
<u>Tongue Point</u>			(location of one tide staff)						4
<u>Cathlamet Bay</u>									5
<u>Miller Sands</u>									6
<u>Green Island</u>									7
<u>Woody Island Channel</u>									8
									9
									10
									11
									12
									13
<u>Settler Point</u>			(not Settlers: location of one tide staff)						USGB 14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25
									26
									27

Names underlined in red are approved. 2/19/48 L. Heck

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NMM

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF HYDROGRAPHY AND TOPOGRAPHY:~~

19 January 1948

Division of Charts: H. W. MURRAY

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 7178

Locality - Cathlamet Bay, Columbia River, Oregon

Chief of Party: E. H. Bernstein in 1947
Plane of reference is mean lower low water, reading
2.5 ft. on tide staff at Astoria (Tongue Point)
19.5 ft. below B. M. 1 (1925)
1.5 ft. on tide staff at Settler Point
23.9 ft. below B. M. 3 (1935)

Height of mean high water above plane of reference is
7.5 ft. at Astoria (Tongue Point)
7.1 ft. at Settler Point

Condition of records satisfactory except as noted below:

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

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7178

FIELD NO. HO-1147

Oregon, Columbia River, Cathlamet Bay
Surveyed in May and June, 1947 Scale 1:10,000
Project No. CS-329

Soundings:

Control:

808 Fathometers

Visual fixes on shore signals

Chief of Party - E. H. Bernstein
Surveyed by - E. H. Bernstein and R. M. Stone
Protracted by - C. E. Petersen
Soundings plotted by - C. E. Petersen
Verified and inked by - H. A. Curtis and S. Rose
Reviewed by - G. F. Jordan, September 30, 1948
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline is from T-7038a and T-7039a of 1947 supplemented by shoreline from T-6387a, T-6387b and T-6385a of 1935, shown in brown ink.

The control signals are from triangulation of 1935 and 1947 and from plane table surveys T-7038a and T-7039a of 1947. Hydrographic signals are from the present survey.

Signals TAR at lat. $46^{\circ} 14.56'$, long. $123^{\circ} 39.14'$, PIT at lat. $46^{\circ} 12.38'$, long. $123^{\circ} 40.23'$, and PUP at lat. $46^{\circ} 12.20'$, long. $123^{\circ} 39.89'$, are undescribed and are considered to be temporary signals.

2. Bottom Configuration and Depth Curves

The bottom configuration shows considerable irregularities which result from strong current action and from dredging in the main channel. Shifting channels and shoals have also caused irregularities.

The depth curves are complete and adequate.

3. Sounding Line Crossings

The soundings at crossings are generally in good agreement. Minor differences in depth are due to uncertain spacing of soundings taken in a variable current over irregular bottom. Many unimportant soundings have been omitted in order to eliminate unnatural delineation of the bottom and to simplify the depth curves. An example of questionable delineation is shown by the 6-ft. curve in lat. $46^{\circ} 14.15'$, long. $123^{\circ} 40.55'$.

4. Adjoining Surveys

Adequate junctions are effected with H-7179 (1947) and H-7180 (1947) on the south. Butt junctions are shown with H-5927 (1935) and H-5928 (1935) on the east, and with H-6180 (1936) on the west. These latter surveys are superseded within the limits of the present survey.

No junctions with H-5927, H-5928 and H-6180 are shown in the main ship channel area on the north where those surveys have been superseded by surveys of the Corps of Engineers.

5. Comparison with Recent Surveys

H-5927 (1935), H-5928 (1935) and H-6180 (1937) on scales 1:10,000

In the comparison of these recent surveys with the present survey, widespread changes in the bottom are revealed. In addition to dredging in the main ship channel, the changes in natural channels and shoals caused by silting, scouring of currents, and the disposal of spoil make a detailed comparison impractical. For example, 40-ft. depths on H-5928 in lat. $46^{\circ} 13.7'$, long. $123^{\circ} 42.7'$, are superseded by 13-ft. depths on the present survey. In lat. $46^{\circ} 13.9'$, long. $123^{\circ} 41.4'$, a channel with 3-ft. depths on the old surveys has changed shape and deepened to 15-to 17-ft. depths shown on the present survey. In lat. $46^{\circ} 13.8'$, long. $123^{\circ} 40.7'$, a channel with 14-to 16-ft. depths 300 meters wide on H-5928 has filled in almost completely; a narrow gut with 7-ft. depths is shown here on the present survey.

These surveys are completely superseded in the common area by the present survey.

6. Comparison with Chart 6151 (Print date of May 10, 1948)
Chart 6152 (Print date of May 5, 1947)

a. Hydrography

In the area outside the main ship channel the hydrography charted from the recent surveys mentioned above has been partially supplemented by the present survey before verification. In the area in the vicinity of the main ship channel, charted hydrography is from surveys by the Corps of Engineers in 1946 (Bps. 40765, 43122 and 43123). The present survey adequately supersedes the charted hydrography in the common area except that the 22-ft. sounding charted at lat. $46^{\circ} 13.08'$, long. $123^{\circ} 45.28'$, from Bp. 40765 should be retained on Chart 6151.

b. Aids to Navigation

Aids to Navigation on the charts are in accordance with Chart Letters 583 (1947) and 46 (1948) which are subsequent to and supersede the present survey.

The buoy charted at lat. $46^{\circ} 15.02'$, long. $123^{\circ} 40.72'$, should be shown on the channel side of the pile cluster as shown on the present survey.

Note to Cartographer: ^{Chart 6152} The uncharted feature at triangulation station SNAG ISLAND BEACON 1935, at lat. $46^{\circ} 13.86'$, long. $123^{\circ} 30.12'$, is reported by Comdr. Bernstein in his letter of 27 September 1948 (in Descriptive Report for H-7180) to be a deteriorated pile structure.

c. Dredged Channels

In the main ship channel along the northern limits of the present survey, present depths are in harmony with the charted controlling depths.

7. Condition of the Survey

- a. The Descriptive Report and sounding records are complete and comprehensive.
- b. The survey was adequately smooth plotted.


8. Compliance with Project Instructions

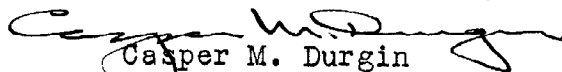
The survey adequately complies with the project instructions.


9. Additional Field Work


This is a very good basic survey and no additional field work is recommended.

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

NAUTICAL CHARTS BRANCH

SURVEY NO. H7178

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
2/26/48	6151	McYann	Before After Verification and Review <i>Partially</i>
3-29-49	6151	Madros	Before After Verification and Review <i>fully applied.</i>
7 June 49	6152	Nichols	Before After Verification and Review <i>Completely applied.</i>
4/52	6152 Reconstr	EHE	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

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.