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Form 504
Rev. April 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

6617a&b.

Topographic }
Hydrographic }

Sheet No.

6618a&b

6620

Library + Archives
April 18, 1939.

State : Oregon -- Washington

LOCALITY

Multnomah Channel

Harborton to Watts Island & Vicinity

Willamette River

North Portland to Northwest End of
Mayden Island.

Columbia River

Ryan Point & Vicinity to Northwest End of
Mayden Island.

1938

CHIEF OF PARTY

W.M. Scaife

T. 6620, Applied to Cht. 6146 10-19-39 K.R.
applied to drawing of chart 6155 - Feb. 15, 1940 J.G.L.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
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REG. NO.

TOPOGRAPHIC TITLE SHEET

APR 18 1939

Acc. No.

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

Field Letter

REGISTER NO. 6617 a & b

State OREGON

General locality ~~Multnomah Channel - Near Portland, Oregon~~

Locality *Harborton to Watts Island Vicinity*
~~Multnomah Channel - south end to Latitude 45°48'~~

Scale 1/10,000 Date of survey October 1938, 19

Vessel Party No. 9, Columbia River

Chief of Party W.M.Scaife

Surveyed by C.R.Reed

Inked by C.R.Reed

Heights in feet above high water line to ground ~~XXXXXX~~

Contour Approximate contour Form line interval * * feet

Instructions dated Feb. 26, 1935, 19

Remarks:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

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

Field Letter

REGISTER NO. 6618 a & b

State OREGON

General locality Willamette River, Portland

North Portland to Northwest End of Hayden Island
Locality Willamette River - mouth to Swan Island

Scale 1/10,000 Date of survey June-July 1938, 19

Vessel Party No. 9, Columbia River

Chief of Party W.M.Scaife

Surveyed by C.R.Reed

Inked by C.R.Reed

Heights in feet above high water line to ground ~~to tops of trees~~

Contour Approximate contour Form line interval * * feet

Instructions dated February 26, 1935, 19

Remarks:

APR 18 1939

REG. NO.

TOPOGRAPHIC TITLE SHEET

Acc. No.

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

Field Letter

REGISTER NO. 6620

State OREGON - WASHINGTON

General locality Columbia River, Vancouver

Locality Ryan Point and Vicinity to Northwest End of Hayden Island
~~Columbia River - Willamette R. mouth to Ryan Pt.~~

Scale 1/10,000 Date of survey August-September 1938

Vessel Party No. 9, Columbia River

Chief of Party W.M. Scaife

Surveyed by C.R. Reed

Inked by C.R. REED

Heights in feet above high water line to ground ~~to ground~~

Contour Approximate contour Form line interval * * feet

Instructions dated February 26, 1935, 19

Remarks:

DESCRIPTIVE REPORT TO ACCOMPANY TOPOGRAPHIC SHEETS NUMBERED

6617 a & b, 6618 a & b, and 6620

COLUMBIA & WILLAMETTE RIVERS AND MULTNOMAH CHANNEL

1938

Scale 1/10,000

Instructions: February 26, 1935

W. M. Scaife
Chief of Party.

GENERAL DESCRIPTION:

The five sheets compose a survey of the Columbia River from the mouth of the Willamette to Ryan Point including North Portland Harbor, the Willamette River from mouth to Swan Island, and Multnomah Channel from south end to Latitude 45°48'. The survey joins Sheet 6619a (1938) above Swan Island.

The banks of the Columbia River and North Portland Harbor were formerly clay cut banks about 10 to 20 feet above the 5 foot high water line (see page 2, last paragraph) but have been modified in places by dock construction, jetty construction, and by the deposit of sand along shore by pipe line dredging. The river is bordered by low flat land. The Washington side is cultivated extensively.

The banks of the Willamette River are more sandy and generally slope more gradually to the water's edge, except along Sauvie Island where the clay cut bank persists. The banks of Multnomah Channel are generally clay cut banks from 10 to 20 feet above the 5 foot high water line.

Cultivated fields bordering the river banks are usually separated therefrom by a band of cottonwoods and underbrush. Much of the dredged in sand spoil is covered with young willows. Fir trees grow on higher ground near the rivers as at Waud Bluff for example. Cultivated fields are in some cases protected from the river by earth dikes or levees.

Jetties or pile dikes (sometimes detached from shore) have been built by the U.S. Engineers for control of shoaling and scouring action of the current.

In many places pile dolphins have been placed for mooring log rafts. In these cases a row of piles is usually placed down stream from these dolphins to keep the log rafts from going ashore.

Many of these log raft moorings are poorly maintained or abandoned and the result is that the river banks are often lined with old piles and pile stubs.

Many float houses are moored along the various banks. These consist of houses built usually on logs - sometimes on scows - and are used by commercial fisherman, amateur boatmen, persons renting boats for sport fishing, and others.

Bridges in the area have the following characteristics and clearances:

Topo Sheet	Name & year completed	Type	*Vertical Clearance	Horizontal Clearance	Bridge Book
(a) 6620	Interstate (Columbia River)	1917 V Lift span	154' 30 ft. above low water closed; 175 ft. above low water span up.	250 feet	
(b) 6620	S.P.&S. Ry.† (Columbia River)	Swing draw span	40 ft. above low water closed	200 ft. on each side center pier	
(c) 6618b	St. Johns (Willamette R.)	1931 Suspension	(205) center HFS 3-12-54 203.6 ft. above l.w. for horiz. distance of 440 ft.	1207 ft. between piers	172' Vert. cl. above M.W.
(d) 6618b	S.P.&S. Ry. (Willamette R.)	1908 Swing draw span	55 ft. above low water closed	230 ft. each side of center pier	347' Vert. cl. above M.W.

* U.S. Engineers adopted low water plane-1929.

A new levee is to be constructed on Sauvie Island enclosing the upper end of the island. A print (No. F.C.704-14-1A U.S. Engrs.) of the proposed improvement is forwarded with these sheets.

Some few triangulation stations are not plotted on the sheets as they were of no use as control and were not computed before the completion of the topography. The remainder of this report will deal with one or more of the individual sheets as indicated. Plane table position lists appear together at the close of the report. Triangulation stations in the water area consist of dolphins, or of lights on dolphins, piles or structures and are so indicated on the individual sheets.

The high water line shown on the topographic sheets (solid black line) corresponds with the plane 5 feet above U.S. Engineers Adopted Low Water Plane (U.S. Engineers Profile Print A-11-38 "B", dated April 10, 1934). This is in accordance with instructions contained in Director's letter No. 22/MEK-1990, dated July 14, 1938.

See (b) above.

		- 2 -	Vert. clearance	Hor. clearance
† Sheet	S.P. & S. Ry.	Swing draw	39.25 ft. above	125 ft. on
6620	(North Portland Harbor)	span	low water closed	north side of center pier

SHEETS 6617 a & b

DETAILED DESCRIPTION:

An earth dike extends along the west bank of Multnomah Channel from the north end of the survey to Lat. $45^{\circ}43'.4$ where it bends westward.

The framing of a ship (never completed) has gone aground at the upstream end of Watts Island. This skeleton is resting with the keel up and is sufficiently buoyant that one end rises during rather high freshets.

The wreck at Lat. $45^{\circ}42'.5$ is partially filled with mud and is rather firmly settled although it may possibly shift somewhat at high freshets.

Log rafting operations take place at Lat. $45^{\circ}44'$, $45^{\circ}43'.8$, and $45^{\circ}43'.5$ - also at $45^{\circ}38'$ to $45^{\circ}39'$.

A free ferry, at Lat. $45^{\circ}39'.3$ is operated by Multnomah County between the hours of 5 a.m. and 2 a.m. A steel cable, with slack providing a clear channel, is used to guide the ferry.

CONTROL:

Control used is 1938 triangulation of this party and 1938 3rd order traverse (from - triangulation station MILLER 1938 to CROSS 1938) by the 29th U.S. Engineers Corps. The computations of this traverse were based on the preliminary 1927 NA Datum as discussed below and as used in the survey of Multnomah Channel.

The 1938 triangulation stations established along Multnomah Channel from the line SCAPPOOSE, 1878-BOUSER, 1878 were computed on the 1927 NA Datum as given in Geographic Positions which superseded positions in Special Publication 31. In order that the field positions used for the control of the Survey of Multnomah Channel (Sheets 6617 a & b) be held on the same datum, the position of station MILLER, for the purposes of the above survey, was computed from the line WILLAMET 1881-GATTON 1883, as given in the same Geographic Positions from which SCAPPOOSE and BOUSER were taken. It is understood that these Geographic Positions for the old triangulation as furnished by the office are considered to be preliminary and will be readjusted.

Positions of the old stations as used for the survey of Multnomah Channel follow:

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>
SCAPPOOSE, 1878	$45^{\circ} 45' 40".547$	$122^{\circ} 53' 34".382$

BOUSER	1878	45° 42' 30".263	122° 52' 33".699
WILLAMET	1881	45 36 18 .418	122 47 37 .848
GATTON	1883	45 36 41 .919	122 45 58 .809

Positions of station MILLER follow:

- (a) Computed as described above and as used on Survey of Mult. Channel.
Latitude - 45° 37' 07".443 Longitude - 122° 48' 23".551
- (b) Computed by carrying triangulation forward from adjusted line,
 COLUMBIA, 1935-PITTOCK, 1935, and as used in Survey of Willamette R.
Latitude - 45° 37' 07".433 Longitude - 122° 48' 23".531

The difference in the two positions of MILLER = 0.3 meters in latitude and 0.4 meters in longitude.

ROSE, WATTS, BOOM, CLARK and JOHNSON (U.S.C. & G.S. triangulation station JOHNSON, 1938, is not the same station as traverse intersection station JOHNSON, 1938 (29th Engrs.)) are U.S.C.&G. Survey stations located by connection with SCAPPOOSE-BOUSER (1878).

ADAM, BEN, TS-7-100, TS-8-100, WILL, DAN, FERRY, TS-4-100, TS-2-100, TS-1-100, WATER TANK, WAX, JOHNSON (29th Engrs.), ROLES, TAG, and PANEL are traverse stations and intersections from a third order traverse run by the 29th Engineers in 1938.

Geographic positions and descriptions of these traverse stations and "cut-ins" are submitted as furnished by the 29th Engrs. with a few explanatory notes added. Some of the traverse stations were not used for control of topography and were not plotted on the sheets.

SURVEY METHODS:

Ordinary survey methods were used. ^(plane-table) Traverses were run between the various U.S.C.&G.S. triangulation stations. The traverse from triangulation station JOHNSON south was run to the edge of sheet 6617a and transferred to sheet 6617b and continued to triangulation station MILLER. The reason for running the plane table traverse the entire distance was that the Corps of Engineers had volunteered to run a control traverse but had not had an opportunity to complete same prior to the completion of the topography. These stations were plotted on the sheets as soon as furnished and were used in the adjustment of the traverse. ^(plane-table)

CLOSING ERRORS:

Where adjustment was necessary it was made in the usual manner (proportionally). The traverse from JOHNSON to MILLER closed 54 meters in 8 miles but most of this was in azimuth. The traverse from JOHNSON to ADAM was adjusted in azimuth and the remainder of the traverse was swung by the same amount with the result that the 54 meter closure was reduced to less than 20 meters. Since this was well within the allowable for the distance the adjustment was then considered as though it had been run between the various 29th Engineer Stations. The resulting closures are listed as follows:

Traverse	From	To	Distance	Error
WATTS	-	ROSE	1 3/4 miles	3 meters
WATTS	-	BOOM	1 1/4	Negligible
BOOM	-	CLARK	1 1/2	Negligible
JOHNSON	-	CLARK	1 1/4	3 meters
JOHNSON	-	ADAM	1 3/4	3 meters
ADAM	-	TS7-100	3/4	1 meter
TS7-100	-	BEN	1/2	Negligible
BEN	-	WILL	1 1/4	Negligible
WILL	-	DAN	3/4	1 meter
DAN	-	FERRY	1 1/4	Negligible
FERRY	-	WAX	1 3/4	4 1/2 meters
WAX	-	MILLER	1 1/4	4 meters

COMPARISON WITH PREVIOUS SURVEYS:

A comparison with Sheet No. 1542-1882 shows that only slight changes have occurred, less than might be expected with the passage of years. The upstream (south) end of Watts Island has receded about 30 meters and the shoreline all around the island has receded slightly.

The east bank has receded slightly more than 30 meters opposite the downstream end of Watts Island.

The small island at Lat. 45°47'.4 has almost disappeared.

The shoreline between signals 26 and 28 (below Watts Island) has built out about 15 meters, possibly due in part to levee construction.

Above Watts Island no copies of previous topographic sheets are at hand in the field. ^{U.S. Engineers surveys} A comparison with Chart 6154 shows that the previous surveys differ widely from the present. The charted channel is misplaced by over 200 ^{see par 3 of Review} meters in places. Definite charted features still in existence are misplaced by as much as 35 meters. Agreement south of Lat. 45°39' ^{T-1562 (1884)} is somewhat closer although far from satisfactory. ^{The rock ledge charted at upstream end of Savie Island is not shown on Topo sheet 1562 (1884), sheet 4320 (1928), USE blueprint B-14-2/19 (1935) nor on the present (1938) survey.} A few scattered boulders in the bank indicate that some rock rip rap was placed here some time ago. ^{T-66116 (1938)}

GEOGRAPHIC NAMES:

Geographic names as charted are correct except that the words "log boom" charted at Lat. 45°40'.5 refer to the abandoned log dump above traverse cut-in station DAN. It is recommended that the name be removed as no longer applicable. Also the name "Miller" at Lat. 45°38' should be moved to Lat. 45°37'.1 as it is the name of a railroad flag station at that point. Information furnished by S.P. & S.Ry. officials, a sign on the highway, and a statement by persons living where the name is now charted all indicate that the name should be moved.

LANDMARKS:

(See also Form 567 dated March 23, 1939) *Chart letter 233-1939*
 No landmarks are recommended in the area covered by Sheet 6617a. On sheet 6617b the two stacks at Lat. $45^{\circ}37'.67$ and Lat. $45^{\circ}37'.95$ are shown as landmarks on Chart 6154 edition of February, 1935, but are not shown on the edition of September, 1937. However, tanks are shown as landmarks at Lat. $45^{\circ}38'.5$ and Lat. $45^{\circ}38'.7$ on both editions. These tanks are small and relatively inconspicuous and it is recommended that both of them be removed on future editions. No landmarks are needed in this easily navigated channel. The stack at Lat. $45^{\circ}37'.67$ is in poor condition and no longer used and its removal from the chart is warranted. The stack at Lat. $45^{\circ}37'.95$ is in use at present and maintained and conspicuous and is the only landmark to be charted other than aids to navigation. Inasmuch as this stack is on a sawmill (Johnson's mill) visited by ocean going vessels it is recommended that it be re-charted as a landmark.

STATISTICS:

Sheet 6617a.shoreline.21.1 statute miles
 Sheet 6617b.shoreline.9.8 statute miles

SHEET 6618a

ADDITIONAL DESCRIPTION:

Old piles in the vicinity of Post Office Bar Lower Light are apparently for the purpose of bank erosion protection.

CONTROL:

Control consists of 2nd order triangulation scheme of 1937 and 1938 with supplementary and intersection stations.

Field positions of the triangulation were computed down the Willamette River from the adjusted line, COLUMBIA, 1935-PITTOCK, 1935, and up the Willamette River from the line FOUR 2 (USE) 1937-DREDGE, 1937 (1937 field positions). Junction of the two sets of computations was made on the line WILLAMET, 1881-GATTON, 1883.

Discrepancy in junction is shown below:

Station GATTON -

	<u>Latitude</u>	<u>Longitude</u>
(a) Field position based on 1937 field computations of FOUR 2(USE)-DREDGE	$45^{\circ} 36' 41".921$	$122^{\circ} 45' 58".753$
(b) Field position based on adjusted positions COLUMBIA, 1935-PITTOCK, 1935	$45 36 41 .912$	$122 45 58 .793$
Discrepancy	$0."009$ (0.3 meter)	$0."040$ (0.8 meter)

DREDGE

Stations FOUR 2(USE),[^] MATT (USE), HAYDEN 2, and NETTLE, all on the Columbia River, were plotted on the basis of their determination from the 1937 field computations of FOUR 2(USE) and DREDGE. The remainder of the stations on this sheet were plotted on the basis of their determination from the adjusted line COLUMBIA, 1935-PITTOCK, 1935, latitude and longitude adjustments being made as indicated in the preceding comparison of triangulation junction on the line WILLAMET-GATTON.

The slight discrepancy introduced in the plotting of the ~~four~~ 5 stations on the Columbia River on a basis different from the others, being less than a meter, was considered negligible.

SURVEY METHODS AND CLOSING ERRORS:

Ordinary survey methods were used. Abundance of control made long traverses unnecessary. Three point fixes and plane table triangulation were frequently used. Short traverses closed without appreciable error. The following longer traverses were adjusted in the conventional manner (in proportion to the distance from the starting point).

From triangulation station KINE to triangulation station CAIN via topographic station OUT -1.2 miles - 6 meters.

From triangulation station MULTNOMAH CHANNEL ENTRANCE LIGHT to triangulation station MILLER -0.6 miles - 2 meters.

COMPARISON WITH PREVIOUS SURVEYS:

SHEET 1562 - 1884

Rather marked changes have taken place since the old survey, partly due to dredging and natural changes and partly due to industrial development,--due to the long time elapsed between surveys a detailed comparison is useless.

Chart 6154

The present survey is in substantial agreement with Chart 6154 except that dredged material has been deposited along the east shore of the Willamette River from the mouth to the south edge of sheet. Percy Slough has been filled in to join Percy Island to Ramsey Island.

GEOGRAPHIC NAMES:

Geographic names are correct as charted, except that since Ramsey Island and Percy Island are actually no longer existing, it is recommended that these names be removed from the chart.

LANDMARKS:

(See also Form 567 dated March 23, 1939)

There are no charted landmarks in the area covered by this sheet except "WH. TANK" (Lat. $45^{\circ} 38'.8$, Long. $122^{\circ} 46'.5$). As this ~~removed~~ tank is very old and no longer white it is recommended that it be removed from future editions of the chart inasmuch as fixed navigational aids serve abundantly as landmarks in this vicinity. It is recommended that the outline of the operating house of grain ~~charted~~ elevator at Municipal Terminal 4 be charted, as this elevator is very conspicuous both from the river and from the air, and is much taller than the bins of the elevator.

It is recommended that the outline of the unused light ~~charted~~ house at Kelley Point be charted.

STATISTICS:

Shoreline. 13.5 statute miles ✓

SHEET 6618b

DETAILED DESCRIPTION:

The land along the west bank of the Willamette River was ✓ mostly low land prior to the pumping in of considerable dredged sand which filled in lakes, etc. making industrial sites possible. Similar sand deposits on the east bank exist below St. Johns Bridge and just above the S.P.&S. Railway Bridge.

See note in blue ink by the field on page 5.

CONTROL:

Control consists of 2nd order triangulation executed in ✓ 1938 with supplementary and intersection stations, with field positions based on the adjusted line COLUMBIA, 1935-PITTOCK, 1935. Two intersection stations from the 1935 scheme were also used.

SURVEY METHODS AND CLOSING ERRORS:

Ordinary survey methods were used. Abundance of control ✓ made long traverses unnecessary. Three point fixes and plane table triangulation were frequently used. The short traverses used closed without appreciable error.

COMPARISON WITH PREVIOUS SURVEYS:

SHEET 1562 - 1884

Very marked changes have taken place since the old survey, partly due to dredging and partly due to industrial and commercial development, especially the improvement of Swan Island airport and the improvement at Lat. 45° 34'.6, Long. 122° 44'.3, now an almost abandoned site.

CHART 6154 & 6155

The chart seems to agree fairly well with the present survey except that numerous piers shown on the chart are now in ruins and several new piers have been built- notably those at Lat 45°34', Long. 122°44'.3. Also considerable dredged in fill west of these oil docks is incorrectly shown on the chart and the extensive log raft storage grounds to the east are not shown.

GEOGRAPHIC NAMES:

Geographic names as charted are correct except that the name of Columbia University has been changed to Portland University.

LANDMARKS:

(See also Form 567 dated March 23, 1939)

The tank at Lat. 45° 33'.3, Long. 122° 41'.8 should continue to be charted. It is recommended that the bridge towers on the St. Johns Bridge be shown on Chart 6154 as well as on Chart 6155 where they now appear. The two tall spires on each pier are best shown by outline as at present on Chart 6155. They are topped by blinking red lights.

charted
To be charted from Letter 233-1939

The air beacon on Swan Island should be charted (see form 567 submitted under separate cover).

STATISTICS:

Shoreline. 12.3 statute miles

SHEET 6620

DETAILED DESCRIPTION:

An earth dike extends along the south shore of the Columbia River from the eastern limit of the sheet westward toward the Interstate Bridge and another extends around part of Tomahawk Island.

Several wrecks exist in North Portland Harbor. It may be noted that these were placed here and burned (with varied success) in the process of recovering iron parts as scrap.

CONTROL:

Control used was second order triangulation and intersection stations of 1938 and one station (ORT-USE) computed from observations of the U.S. Engineers from stations common to the schemes of both bureaus. One of the intersection stations (Black Tank) was computed using computed azimuths as shown on attached computation and is considered as a 4th order station. Recomputation by inverse is not warranted.

Field positions are based on the line FOUR 2(USE)-DREDGE (1937 field computations).

SURVEY METHODS AND CLOSING ERRORS:

Ordinary survey methods were used. Due to the abundance of control traverses were not needed on many parts of the sheet. Three point fixes and plane table triangulation were frequently used. Short traverses closed without appreciable error. The following longer traverses were adjusted in the conventional manner (in proportion to the distance from the starting point).

<u>From</u>	<u>To</u>	<u>Distance</u>	<u>Error</u>
Dol. B ORE(USE) 3 point fix Triangulation Station BUG	Triangulation Station JANT	2 miles	5 meters
" ROK	" ROK	1 mile	3 meters
" ROK	" NETTLE	2 $\frac{1}{2}$ miles	7 meters
" ORT	" 1st DISTRICT	1 mile	2 meters

COMPARISON WITH PREVIOUS SURVEYS:

SHEET 2007 - 1890
SHEET 2521 - 1900

Very marked changes have taken place in this area. Hayden Island has been increased in size on both the north and south sides. Percy Island has become part of the mainland. Tomahawk Island has been formed and North Portland Harbor (formerly Oregon Slough) has extended along the shore to the east thru the old sand flat.

Dredged material has been deposited along the Washington shore from Vancouver to Mathews Point. Columbia Slough has been cut through to the Columbia River and is controlled by a tide gate at Lat. $45^{\circ} 36.08'$ Long. $122^{\circ} 38'.47''$. Of course numerous bridges and piers have been built since the old surveys were made.

Chart 6154.

Changes that are not correctly charted consist chiefly of accretions caused by dredged in fill. Dike V 1.5 is not shown long enough as the length has been increased in recent years.

GEOGRAPHIC NAMES:

Geographic names are correct as charted except that Percy Island is no longer an island. (See page 8 this report, paragraph 1)

LANDMARKS:

(See also Form 567 dated March 23, 1939) *Ch. letter 233 (739)*

The dolphin charted at Lat. $45^{\circ} 38.3'$, Long. $122^{\circ} 43'.5''$ is no longer in existence and should be removed from the chart. Tomahawk Island Upper Dike Light is charted some distance from the dike on Chart 6154 and 6155 and the dike is bent on chart 6146 to allow for the misplacement. The light should be on Dolphin B, Washington (USE) (see form 567). The chimney at Lat. $45^{\circ} 37'.1''$, Long. $122^{\circ} 42'.9''$ is inconspicuous or missing and it is recommended that it be removed from the chart. KGW radio mast shows up well as a landmark and should be charted. The outline of the grain elevator at triangulation station Pacific should be charted (see air photographs for outline). *Elevator plotted from air photographs in office and shown in red on survey.*

STATISTICS:

L.S.S. 12/14/39

Shoreline. 23.5 statute miles

Respectfully submitted:

Clarence R. Reed

Clarence R. Reed
Jr. H. & G. Engineer
U.S.C. & G. Survey

Approved and forwarded:

W. M. Scaife

W. M. Scaife
H. & G. Engineer
Chief of Party.

MAGNETICS FOR TOPOGRAPHIC SHEETS

6617a & b, 6618a & b, and 6620..

Magnetic meridians on these sheets were determined with the declinatoire accompanying alidade No. 223. No meridian was shown on sheet 6617b as the survey was completed before triangulation station MILLER was reached and said station is in the vicinity of railroad tracks and power lines. Declinatoire with alidade ~~223~~ was checked with compass declinometer No. H21 on January 5, 1939 at triangulation station HAZEL, 1938 (Clark County, Washington). The declinatoire was found to have a net correction of $- .07'$. (The compass declinometer had an index correction of $+ 12'.2$) (Data furnished by office).

Meridians on the sheets are uncorrected. They have been scaled and corrected and are tabulated herewith. The values at 38 2(USE) and ALBERT seem somewhat wild. At ALBERT this may be partly due to an extensive ^{underground} sprinkler system for the airport. At 38 2(USE) there is the possibility that there may be earth fill on top of metal junk.

<u>SHEET</u>	<u>PLACE</u>	<u>DATE</u> and <u>TIME</u>	<u>DECLINATION</u>	<u>SCALED</u>
6617a	JOHNSON ✓	10/17/38--12:45 ✓	22° ⁰² 16'	22° 09'
"	WATTS ✓	10/ 9/38 11:00 ✓	22 ²¹ 58' ₀₆	22 05
"	ROSE ✓	10/10/38 11:30 ✓	22 ⁰ 05	22 07
6618a	CAIN ✓	6/28/38 14:45	22 ²¹ 55' ₀₂	22 02
6618b	38 2(USE) ✓	6/13/38 9:30	20 [✓] 24' ✓	20 31
"	ALBERT ✓	6/17/38 12:30	23 ²⁰ 35	23 27
6620	BEACH ✓	8/25/38 15:45	22 ²¹ 54	22 28
"	STATE ✓	9/1/38 13:00	22 ¹⁴ 29	22 21

LIST OF RECOVERABLE PLANE TABLE POSITIONS - SHEET 6617a 1938

Name & Description	Latitude	Longitude
Noga north gable barn	45° 44' 388 meters	122° 50' 307 meters
Gabl N gable N barn	44 655'	50 490'
Barn N gable barn	46 233'	49 52'
Gable S gable barn	44 1639'	50 197'
Mill windmill	44 1575'	50 325'
Yell yellow tank	44 1439'	50 493'
Clay std. hydrographic disk cemented in iron pipe	47 469'	48 408'
Back ditto	44 305'	50 1204'
See ditto	44 1439'	49 767'
Set ditto	45 377'	49 398'

LIST OF OTHER SIGNALS - Sheet 6617a

Wed - short pile	Move -N gable barn	Feb -pile
Black - snag	Nip -dolphin	Haw -wreck bow
*Zag - pile	*Fin -dolphin	Ap -pile
Trunk -tree	Nor -dolphin	May -dolphin
Toll - pile	Ox -dolphin	Pole -power pole
Dry -log	*Ana -dolphin	June -pile
Jan -pile	Lone -stake	July -pile
*Car -pile	*Tar -pile	Aug -pile
Oct -board	True -tree	*Dal -dolphin
Stack -on grounded ship	Nona -stake	Lad - "
	Car -pile	Oh - "
Sept -log	*Us -dolphin	New - piles
Nov -pile	*Doe - "	*Fig -pile
Gar -shed gable	Cos -structure	*Log -dolphin
Dec -log	Tank -round brick bldg	Foo -pile
Bent -on bridge	Rrx - RR crossing sign	Dump -dolphin
Snow -stake	Moo -pile	Ds -pile
Sc - stump	Hoss -pile	Wire -fence post
Clo -stake	*Ale -dolphin	Fend -stake
Nab -pile	*Bun -double pile	Nub -pile
Fat -dolphin	By -dolphin	Tues -dolphin
*5 - "	Tug - "	Float -pile
Post -fence post	High -banner	Chi -dolphin
Hip -N gable house	Grey- river gable house	17 - dolphin
Bum - dolphin	*Eta - dolphin	Tar -dolphin

List continued on next page.

*NOTE: Signal marked by brass plate 2 inches square spiked thru hole in center and stamped with signal name and "C. & G.S."

List of Signals (continued) Sheet 6617a

23 - sign on tree	Tree -tree	Spar - log
Gans - snag	Slu -pile	Co -pile
Snag - "	Last - "	*Gag - "
Stake -stake	Ben - "	*Zed - "
Help - "	Bus - flag	*38 -dolphin
*36 - dolphin	*34 - dolphin	*32 - dolphin
*30 - "	*28 - "	*26 - "
*24 - "	*22 - "	*20 - "
*18 - "	*16 - "	Floy -pile
Goo - signal	Way -pile	*Pil -pile
Bow -on wreck	Stern - on wreck	Lt -old light dolphin
*Peet -dolphin	Crow -dolphin	Raw -pile
Ro - "	Cone - "	Bob -dolphin
Mar - "	*Mud - "	*Si - "
Una - "	*Sow - "	Cry -pile
Miss -dolphin	Ray - "	*Sid -dolphin
Tri -pile	*Bun -pile	CW - "
*End -dolphin		

*NOTE: Signals designated by asterisk marked by brass plate 2 inches square spiked thru hole in center and stamped with signal name and "C. & G.S."

LIST OF RECOVERABLE PLANE TABLE POSITIONS - SHEET 6617b 1938

Name & Description		Latitude	Longitude
RB	Rear USE (rear rge beacon)	45° 37' 567meters	122° 48' 750 meters
Chan	Multnomah Channel 1 Light	37 1177	48 1106
Bur	Burner USE	37 1810	49 320
Swega	SW gable house	39 302	49 1162
Vert	green water tank	38 1385	49 741
Noir	black oil tank	38 1375	49 734
Nail	nails in triangle on end tie of RR bridge	38 590	49 458

LIST OF OTHER SIGNALS - Sheet 6617b

*Two -dolphin	Hue -pile	Mas - dolphin
*Three - "	Cargo- "	Stow- " "
*Four - "	Juc -corner of pier	Nix - "
*Five - "	Old - dolphin	Barb - "
*Six - "	Dust - "	Lee - "
*Zero - "	Bank - "	<u>Cable -cable Xing sign</u>
*Ace - "	*Box - "	*Ida - jetty dolphin
*Duck - "	*Can - "	13' - dolphin
*Trey - "	*Die - "	Gol - log
Fu - "	*Eno - "	*Mine - dolphin
*Fin - "	*Flo - "	*Quiz - "
Ham - pile	*Gag - "	Dub - pile
Rag - dolphin	Ant - "	*Sin - "
Gas - "	Bark - "	Jet - jetty dolphin
Slip - "	G5 - "	*Jug - dolphin
Fer - "	G6 - "	*Kid - "
*Pry - "	G7 - "	*Leg - "
*Oil -double pile	Bloc -hoist block	*Nut - "
Hose -fire hose	QRS - pile	Tuv - pile
Diam -cable Xing sign	Neat -dolphin	Smok -chimney on house

*NOTE: Signals designated by asterisk marked by brass plate 2 inches square spiked thru hole in center and stamped with signal name and "C. & G.S."

LIST OF RECOVERABLE PLANE TABLE POSITIONS - SHEET 6618a 1938

Name & Description	Latitude	Longitude
Rear Post Office Bar Rear Range Light	45° 37' 1672 meters	122° 47' 773 meters
Front Post Office Bar Front Range Light	37 1469	47 725
Ma Multnomah Channel 3 Light	37 427	48 112
Tide Dolphin end of dike	37 296	48 170
Bea Multnomah Channel Entrance Guide Beacon	37 56	47 134
Up Post Office Bar Upper Light	37 168	47 255
Dike Dike USE (hydro)	37 1049	47 350

LIST OF OTHER SIGNALS - Sheet 6618a

Scow -corner grounded scow	Tin -10 tree USE Post -fence post	Fen -fence post 8 -8 tree USE
Ice -board	*Nab -pile	*War -pile
Gaw -tree trunk	*Jud - "	Gable-upstream gable river barn
Ynez - " "	Xray - snag	Bo - rock
Strip - " "	Stum -stump	One - dolphin
Hus -pile	Take -stake	Rage -pile
Babe -dolphin	Glut -dolphin	Hank -dolphin
Date - "	Cor -corner pier	Ner -corner pier
Drug - "	Beat -dolphin	Store - dolphin
Yel -dolphin	Lay - "	Blow -corner pier
Grab -ww on pier	Rich - "	Non - " "
Rage -dolphin	Fel - "	29 -29 tree USE
Base -dolphin	Back -corner pier	Out -light pole
In -corner slip	Ship -dolphin	Carp -dolphin
Bass - pile	Par -corner pier	Fish - "
Slip - sign	Pier - " "	Hay -corner pier
Cross -post	Prom - " "	B1,B2,B3,B4,B5,B6,B7,B8,and
Chop - log	Han -dolphin	B9 - slip bollards
Brig -pile	Damp - "	Pud - banner
Ride - "	Out - "	Sc -Hope USE (hydro)
15 -15 treeUSE	Dol.1 - "	*Col -Columbia dolphin USE(hydro)
Aim -dolphin	*Dol 2 - "	*Wire -Old front USE (hydro)
Bet -Bet USE (hydro)	*Dol 3 - "	*Po - telephone pole
13 -13 tree USE	*Dol 4 - "	*Rip - dolphin
Cent -4 pileUSE	*Dol 5 - "	*Tea - "
Twin - tree	*Dol 6 - "	*Ate - "
Tom -gable house	*Dol 7 - "	*Ruby - "
Old -dolphin	*Drop - "	*Meek - "
Moor -pile	Low -LowBr dol USE	Up -Upper dol USE
*Hunt -dolphin	*Den -pile	Mice - dolphin
Hop - "		

*NOTE: Signals designated by asterisk are marked by brass plate 2 inches square spiked thru hole in center and stamped with signal name and "C. & G.S."

LIST OF RECOVERABLE PLANE TABLE POSITIONS - SHEET 6618b 1938

None on this sheet.

LIST OF OTHER SIGNALS - Sheet 6618b

Mat -pile	Bid -dolphin	Bone -dolphin
Jump -dolphin	Mm -pile	July - "
Tt - "	<u>Amp-cable Xing sign</u>	Meek -corner pier
Barb -pile	Dry -corner pier	Beg - " "
Yard -dolphin	Blst -blk.stack	Rig -river gable mill
Saw -dolphin	Cc -pile	Twist - dolphin
Row - "	War - dolphin	Tall -light pole on pier
Sept - "	Nov - "	Oct - dolphin
Tri - "	Feb - "	Bo - "
Load -pile	June - pile	Mar -pile
Lad -dolphin	Pole -dolphin	Nob -dolphin
Pp - "	Qq -pile	Dec - "
Two -dolphin	One - dolphin	Bot - "
Pipe - "	Pump- pump house	Flag -flagpole
Rad -d/s radio pole	Pebi - rock	Drr -d/s rear rge measured mile
Ramp -dolphin	Nome -pile	Uar -u/s " " statute mile
Tex - "	Ark -pile	Unr -up/s " " nautical "
Co - "	Bell -dolphin	Over -pile
Easy -pile	<u>Cable - Xing sign</u>	Jan - dolphin
Ruby -pole on pier	Rum -dolphin	Aug - "
Edge -corner ruins	Pack- "	<u>Volt-cable Xing sign on dolphin</u>
Band - dolphin pile	Lint-Linnton dol USE	
Beer - xlx "	Jj -dolphin	Set - corner pier

LIST OF RECOVERABLE PLANE TABLE POSITIONS - SHEET 6620 1938

Name & Description	Latitude	Longitude
Band Vancouver, Terminal 1 u/stream flagstaff	45° 37' 545 meters	122° 40' 487 meters
Vancouver Rear Range Light (on bridge)	37 409	40 474
Ramp Dike dol.V-0.3 USE	37 112	40 1015
Mast " " V-0.7 "	37 465	41 379
Veto " " V-1.1 "	37 908	41 900
Stay std.disk cemented in rock	37 679	42 1148
Vancouver Front Range Light (lt.on S.P.& S.bridge)	37 1057	41 412
Flg. Vancouver Terminal 2 upstream flagstaff	37 1736	41 1003
Bait Dol C USE (on Dike C)	36 353	38 36
Iron std.disk in iron pipe	38 65	44 18
Babe Dol B Wash USE	36 630	38 1033
Easy Dol B Ore USE	36 388	38 1060
Edge Dol D USE	36 1344	37 1040
Ryan Ryan Point Light(on dol)	36 1381	38 757
A Dol A USE (on Dike A)	36 1019	39 690
Math Mathews Point Light (on dolphin)	38 1822	44 895
Deal new dolphin	38 763	44 238
Black tank, elev(4th order triangulation)	36 0.0	39 925.9

LIST OF OTHER SIGNALS - Sheet 6620

Date -snag	Blow -end of culvert	*Zee -dolphin
Barb -dolphin	*Yen -corner wharf	*Xtra -dolphin
Runt -(*Wag)dolphin	Boot -light on bridge	
Mare-(*Vee)corner	Pack - " " "	Sk -tallest sawmill stack
Bone-dolphin pier	Bid -corner pier	Beg -corner of pier
Dol USE-dolphin	Shaw -river gable barn	
Leap - "	Rage -center of river	
Line - pile	<u>face of transmission station for cable Xing</u>	
Crow -dolphin	May -dolphin	June -dolphin
July -dolphin	Q - "	H - "
*Gat - "	*Hat - "	*Ike - "
*Jan - "	*Man - "	*Nat - "
*Oaf - "	3 - "	Doze -pile
2 - "	*Len - "	*Club-Club Dol USE
Feb - "	*Ken - "	Ride center of river face
*Pop - "	*Quo - "	Brig of transformer station
Co-Ed -flagpole	Crete -end of wall	<u>Base for cable Xing</u>
Army -pile	*Ape -dolphin	Haw -pile

LIST OF OTHER SIGNALS - (CONTINUED) Sheet 6620

*Sea -dolphin	Sco -dolphin	*Bay -dolphin
Rik - "	*Nake- "	Cab - pile
Lie -corner pile	Stub - pile	Cry -pile
structure	White - sign	*Hors - pile
Shell -sign on bridge		Step -ww on steps
Sign - " " "	Sock -snag	Sg - snag
Sma - dolphin	Cloth - stake	Ben -ww on bridge pier
Clp-center lt.post	*Age -dolphin	Bs -blk stack
Dt -dead tree	<u>By -cable sign</u>	Dip-flagstaff on "Dipper" at
Beer - stake	Over - " "	Jantzen Beach
Rum -pile	*Bud -dolphin	Load -corner wharf
*Dam -dolphin	Hank -derrick	*Eat -dolphin
*Cow -dolphin	Oct -pile	Sept - "
Buts-stub pile	Aim -pile	Ph - pumphouse river gable
*Fat - dolphin	Br -dolphin	Beat -dolphin
SW-corner shed	Sofa-corner pier	Nag-flag on riding academy
Ark -dolphin	Back -dolphin	Fend -pile
Bell -dolphin	Coy -chimney	Blot -board
Chop -board	*Tan -dolphin	*Uno -dolphin
Gala -dolphin	Salt -stump	Claw-gable shed (downstream)
Glut -dolphin	Grab -dolphin	6 -dolphin
5 -pile	Drip -dolphin	X -pile
*Rob -dolphin	*Cat -dolphin	*Sin -dolphin
*Bag -dolphin		

* NOTE: Signals designated by asterisk are marked by brass plate 2 inches square epiked thru hole in center and stamped with signal name and "C. & G.S."

APPROVAL BY CHIEF OF PARTY

Topographic Sheets 6617 a & b, 6618 a & b, and 6620
have been inspected and approved by me.

The field work was done under my occasional supervision.

No additional field work is considered necessary.



W.M.Scaife, H. & G. Engineer,
Chief of Party.

	Remarks	Decisions
1		457227
2		458227 USGB
3		456227
4		457227 USGB
5		457227
6		"
7		"
8		
9		
10		457227 USGB
11		458227 USGB
12		456227
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GEOGRAPHIC NAMES

Survey No. 617 ab

Name on Survey	On Chart No.		On previous survey No.		On U. S. quadrang. 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>Johnson Idg.</u>	✓	✓														1
<u>Multnomah Channel</u>	✓	✓														2
<u>Rocky Point</u>	✓	✓														3
<u>Sauvie Island</u>	✓	✓														4
<u>Gilbert River</u>	✓	✓														5
<u>Watts Island</u>	✓	✓														6
<u>Chapman Landing</u>	✓	✓														7
																8
																9
<u>Sauvie Island</u>		✓														10
<u>Multnomah Channel</u>		✓														11
<u>Burlington</u>		✓														12
																13
																14
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by L Heck on 7/13/39

Remarks

Decisions

	Remarks	Decisions
1		455226 USGB
2		" USGB
3		456227 USGB
4		455226 USGB
5		"
6		"
7		"
8		" USGB
9	<i>Anderson Island (not to be intsed)</i>	"
10		457227 USGB
11		USGB
12		USGB
13		456227
14		"
15		USGB
16		456227
17		458227 USGB
18		456227 USGB
19		456227 USGB
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GEOGRAPHIC NAMES

Survey No. **T6618ab**

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>St. Johns</u>	✓	✓														1
<u>Doane Point</u>	✓	✓														2
<u>Willamette River</u>	✓	✓														3
<u>Waud Bluff</u>	✓	✓														4
<u>Mocks Bottom</u>	✓	✓														5
<u>Swan Island Basin</u>	✓	✓														6
<u>Swan Island(Airport)</u>	✓	✓														7
<u>Portland</u>	✓	✓														8
<u>Portland Airport</u>	✓															9
<u>Sauvie Island</u>	✓	✓														10
<u>Washington</u>	✓	✓														11
<u>Columbia River</u>	✓	✓														12
<u>Columbia Slough</u>	✓	✓														13
<u>Post Office Bar</u>	✓	✓														14
<u>Oregon</u>	✓	✓														15
<u>Willamette River</u>	✓	✓														16
<u>Multnomah Channel</u>	✓	✓														17
<u>Linnton</u>	✓	✓														18
<u>Kelly Point</u>	✓	✓														19
																20
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																22
																23
																24
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																26
																27

Names underlined in red approved
by L. Heck on 7/13/39

Remarks

Decisions

	Remarks	Decisions
1		456227 USGB
2		USGB
3		USGB
4		456227
5		" USGB
6		" USGB
7		" USGB
8		" USGB
9		" USGB
10		" USGB
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GEOGRAPHIC NAMES

Survey No. 6620

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
<u>Mathews Point</u>												1
<u>Washington</u>												2
<u>Columbia River</u>												3
<u>Vancouver</u>												4
<u>Hayden Island</u>												5
<u>North Portland Harbor</u>												6
<u>Tomahawk I.</u>												7
<u>Oregon</u>												8
<u>North Portland</u>												9
<u>Ryan Point</u>												10
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												27

Names underlined in red approved
by L. Heck on 7/13/59

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT } ~~XXXXXXXX~~
~~XXXXXXXXXXXX~~ } No. T 6617 ab
 6618 ab
 6620

{ received
 registered June 30, 1939
 verified
 reviewed
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
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83			
88			
90			

RETURN TO

82	Lt. Reed
----	-----------------

✓ JBR

Section of Field Records

REVIEW OF TOPOGRAPHIC SURVEY NO. 6617 a & b (1938).

Harborton to Watts Island, Vicinity, Multnomah Channel, Oregon,
Surveyed in October, 1938, Scale 1:10,000.

Instructions dated February 26, 1935 (R.W. Knox), and
the Director's letter No. 22/MEK. 1990, dated July 14, 1938.

Plane Table Survey.

Aluminum Mounted.

Chief of Party - W. M. Scaife

Surveyed by - C. R. Reed

Inked by - C. R. Reed

Reviewed by - Leo S. Straw, December 5, 1939

Inspected by - H. R. Edmonston

1. Junction with Contemporary Surveys.

- a. The junction with T-6571a (1937) on the north at Lat. $45^{\circ}47.85'$ and T-6618a (1938) on the south in approximate Lat. $45^{\circ}37.2'$, Long. $122^{\circ}48.3'$ are satisfactory.
- b. The junction of T-6617a (1938) with T-6617b (1938) is satisfactory.

2. Comparison with Prior Surveys.

T-1542 (1882), scale 1:10,000; T-1562 (1884), scale 1:20,000.

The area of the present survey common to T-1542 (1882) extends from the south end of Watts Island to 1/2 mile north of the mouth of the Gilbert River. T-1562 (1884) covers about one mile of Multnomah Channel from its confluence with the Willamette River northwestward.

The descriptive report contains a comparison of the old and new surveys and additional comparisons are not considered necessary in this review. The present survey, supersedes the above old surveys in the common area.

3. Comparison with Chart 6154 (New Print dated February 10, 1939).
Chart 6155 (New Print dated April 28, 1939).

a. Topography.

The charts are based on surveys discussed in the foregoing paragraphs and U. S. Engineers' surveys. South of Watts Island to about two miles north of Harborton the charted information is based principally on U. S. Engineers' surveys. Between Lat. $45^{\circ}41'$ and Lat. $45^{\circ}43'$ Multnomah Channel is charted 140 to 180 meters too far east. The present survey, in so far as the topography actually included is concerned, should supersede the information from the Engineers' surveys.

b. Aids to Navigation.

The aids to navigation have been considered in the review of H-6334 (1938).

c. Magnetic Declination.

No observations were obtained in the area covered by T-6617b for the reason stated on page 12 of the descriptive report, however, the three determinations on T-6617a are in satisfactory agreement with the charted value.

4. Condition of Survey.

a. The descriptive report satisfactorily covers all items of importance.

b. The field drafting is very good.

5. Compliance with Instructions for the Project.

Satisfactory.

6. Additional Field Work Recommended.

None.

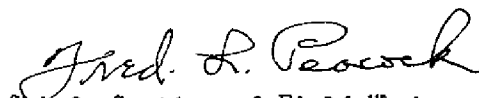
Examined and Approved:



T. B. Reed,
Chief, Section of Field Records.



K. T. Adams,
Chief, Division of Charts.



Fred L. Powell,
Chief, Section of Field Work.



G. H. de
Chief, Division of H. & T.

Section of Field Records

REVIEW OF TOPOGRAPHIC SURVEY NO. 6618 a & b (1938).

North Portland to Northwest End of Hayden Island, Willamette River, Oregon.

Surveyed in June-July, 1938, Scale 1:10,000.

Instructions dated February 26, 1935 (R.W. Knox), and the Director's letter No. 22/MEK 1990, dated July 14, 1938.

Plane Table Survey.

Aluminum Mounted.

Chief of Party - W. M. Scaife.

Surveyed by - C. R. Reed.

Inked by - C. R. Reed.

Reviewed by - Leo S. Straw, December 6, 1939.

Inspected by - H. R. Edmonston.

1. Junction with Contemporary Surveys.

- a. The junctions with T-6619a (1938) south of Swan Island and T-6617b (1938) in Multnomah Channel are satisfactory.
- b. The highwater line opposite triangulation station DREDGE is about 80 meters closer to the main channel of the Columbia River on T-6572 (1937) than on the present survey. The descriptive report for T-6572 (1937) states that "A large quantity of dredged material has been deposited at triangulation station DREDGE." H-6333 (1938) shows from 1 to 3 feet of water 40 meters inside of the highwater line as delineated on T-6572 (1937). Unquestionably, much of the dredged material has washed away thus accounting for change in the highwater line. In the overlapping section of the shoreline, T-6618a (1938) should supersede T-6572 (1937).
- c. The junction of T-6618a (1938) with T-6618b (1938) is satisfactory.
- d. The junction with T-6620 (1938) at the northwest end of Hayden Island will be considered in the review of that survey.

2. Comparison with Prior Surveys.

T-1562 (1884), scale 1:20,000.

This old survey entirely includes the area covered by the present survey. Because of the extensive artificial and natural changes a detailed comparison is unwarranted. Within the common area the present survey supersedes T-1562 (1884).

3. Comparison with Chart 6154 (New Print dated Feb. 10, 1939).
Chart 6155 (New Print dated Apr. 28, 1939).

a. Topography.

Within the area of the present survey the charts are based on the survey discussed in the foregoing paragraph and on various surveys of the U. S. Engineers and other agencies. The present survey, in so far as the topography actually included is concerned, should supersede the information from the above mentioned sources.

b. Aids to Navigation.

The aids to navigation have been considered in the review of H-6334 (1938).

c. Cable Crossings.

Cable crossings at St. Johns Bridge and the S.P.&S. Railroad bridge are marked by signs (see page 17 of the descriptive report).

d. Magnetic Declination.

The magnetic declinations obtained vary from 5' less to 1° 36' greater than the charted value. See comments by the surveyor on page 12 of the descriptive report.

e. A measured nautical and a measured statute mile course was determined on Swan Island.

4. Condition of Survey.

a. The descriptive report satisfactorily covers all items of importance.

b. The field drafting is very good.

5. Compliance with Instructions for the Project.


Satisfactory.

6. Additional Field Work Recommended.


None.

Examined and Approved:


T. B. Reed,
Chief, Section of Field Records.


Fred. L. Penock,
Chief, Section of Field Work.


K. T. Adams,
Chief, Division of Charts.


G. H. Hude,
Chief, Division of H. & T.

Section of Field Records

REVIEW OF TOPOGRAPHIC SURVEY NO. 6620 (1938).

Ryan Point and Vicinity to Northwest End of Hayden Island,
Columbia River, Oregon-Washington.
Surveyed in August-September, 1938, Scale 1:10,000.
Instructions dated Feb. 26, 1935 (R.W. Knox), and
the Director's letter No. 22/MEK 1990, dated July 14, 1938.

Plane Table Survey.

Aluminum Mounted.

Chief of Party - W. M. Scaife.
Surveyed by - C. R. Reed.
Inked by - C. R. Reed,
Reviewed by - Leo S. Straw, December 7, 1939.
Inspected by - H. R. Edmonston.

1. Junction with Contemporary Surveys.

The junction with T-6618a (1938) at the northwest end of Hayden Island is satisfactory.

No new work east of Ryan Point has as yet been received. The junction with chart No. 6146 at Dikes C and D is satisfactory.

2. Comparison with Prior Surveys.

T-2007 (1890), scale 1:10,000 and T-2521 (1900), scale 1:10,000.

The present survey falls within the limits of T-2007 (1890). Within the area of the present survey T-2521 (1900) covers about a mile of the Columbia River in the vicinity of Ryan Point.

The descriptive report contains an adequate comparison of the old and new surveys and additional comments are unnecessary in this review. The present survey supersedes these old surveys in the common area.

3. Comparison with Chart 6154 (New Print dated Feb. 10, 1939).
6155 (New Print dated Apr. 28, 1939).
6146 (New Print dated Jan. 3, 1939).

a. Topography.

Within the area of the present survey the charts are based principally on surveys by the U. S. Engineers and other agencies. Large differences in shoreline are noticed in North Portland Harbor and the northeast shoreline of Hayden Island. The latest Engineers' survey, blueprint 32618 (1939), which was made subsequent to the present survey, apparently used the shoreline from previous blueprints, however, it shows two dolphins in Lat. 45°37.25', Long. 122°42.09' and Lat. 45°37.52', Long. 122°43.64', which are not shown on the present survey. The present survey, insofar as the

topography actually included is concerned, should supersede the information from the above mentioned sources.

b. Aids to Navigation.

The aids to navigation have been considered in the review of H-6333 (1938).

c. Magnetic Declination.

The magnetic declinations obtained are in substantial agreement with the charted value.

d. Cable Crossings.

The cable crossing approximately a mile west of the S.P. & S. Railroad Bridge is in agreement with the charted position. For cable crossings from the S.P. & S. Railroad Bridge eastward see U. S. Engineers' survey, blueprint 32618 (1939).

4. Condition of Survey.

- a. The descriptive report satisfactorily covers all items of importance.
- b. The field drafting is very good.

5. Compliance with Instructions for the Project.

Satisfactory.

6. Additional Field Work Recommended.

None.

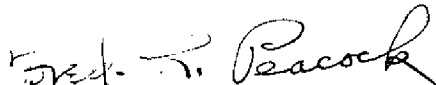
Examined & Approved:



T. B. Reed,
Chief, Section of Field Records.



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.