8113

Diag. Cht. No. 6154

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. WCFP-05154 *Office No.* H-8113

LOCALITY

State OREGON

General locality PORTLAND-WILLAMETTE RIVER

Locality SWAN ISLAND

19~~4~~54

CHIEF OF PARTY

C. A. George

LIBRARY & ARCHIVES

DATE JULY 2, 1954

B-1870-1 (1)

8113

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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

REGISTER No. .....

Field No. WCFP 05154

State Oregon

General locality Portland, Willamette River

Locality Swan Island

Scale 1:5000 Date of survey 5 to 25 May 1954

Instructions dated Acting Director's letter 22/MEK; FP-West Coast dated 16 April 1954

Vessel U. S. Coast Guard Launch No. CG 24135

Chief of party C. A. George

Surveyed by K. A. MacDonald and R.M. Sylar

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

Fathograms scaled by K. A. M., G. E. H., D. W. I., A. W. B.

Fathograms checked by G. E. H. and K. A. M.

Protracted by R. M. S.

Soundings penciled by R. M. S.

Soundings in ~~fathoms~~ feet at ~~MEAN LOW WATER~~ Columbia River Datum And are true depths

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

DESCRIPTIVE REPORT

TO ACCOMPANY SPECIAL HYDROGRAPHIC SURVEY
Vicinity of Swan Island, Willamette River, Oregon

No. H- (Field No. WCFP 05154)

5 to 25 May 1954

Scale of Survey: 1:5000
Chief of Party: C. A. George
Surveyed by: K. A. MacDonald and R. M. Sylar

A. PROJECT

The project is a special hydrographic survey in the vicinity of Swan Island, Portland, Oregon

No project number was assigned for this survey.

Instructions for the survey are set forth in the Acting Director's letter 22/MEK; FP-West Coast, dated 16 April 1954 and addressed to Comdr. C. A. George.

B. SURVEY LIMITS AND DATES

The field work was completed between 5 - 25 May 1954.

The limits of the survey include Swan Island Basin and that portion of the Willamette River between Latitudes 45° 32' 45" and 45° 34' 34", Longitudes 122° 41' 30" and 122° 44' 36".

The area covered by this survey had been previously done in 1938 and 1946 as shown on hydrographic survey sheet H-6334 (1:10,000) 1938 and H-7124 (1:5,000) 1946. + H-6335 (1:5,000) 1938

C. VESSELS AND EQUIPMENT

The vessel used for this project was obtained from the U. S. Coast Guard on a loan basis. It was a 24-foot, gasoline powered work launch (No. CG 24135).

The launch was based at the U. S. Navy Reserve pier at the head of the Swan Island Basin throughout the working period.

The turning radius of the launch is about 7 meters at 5.5 knots, the speed at which the hydrography was accomplished.

C. VESSELS AND EQUIPMENT (Contd)

An 808 J fathometer, No. SFX 154, calibrated at 800 fathoms per second and a regulation hand leadline were used for obtaining the soundings. The general unreduced depths encountered throughout the area was about 50 feet with extremes of 8 to 70 feet.

D. TIDE AND CURRENT STATIONS

A tide gage and staff were installed on the Union Oil Company pier (Latitude 45° 34' 00", Longitude 122° 44' 06") at Willbridge, Oregon on the southwest side of the Willamette River opposite the entrance to the Swan Island Basin. The tide gage was in operation from the 11th to the 24th of May 1954. The resulting record was reduced to the Columbia River Datum as a plane of reference and was used for the reduction of soundings throughout the area covered by the survey.

The tide staff was connected to tidal bench marks V 14 (1920) and E 30 = 1286 (City of Portland) as shown on the Tidal Bench Marks sheet entitled "Oilton (Texaco Oil Company Dock) Willamette River, Oregon" and dated 2/19/48, and the Columbia River Datum as referred to these bench marks was used for the survey.

A U. S. Engineer's tide staff was found located in the Swan Island Basin and was compared with the tide gage staff installed at Willbridge. The Engineer's staff read 0.2 feet lower than the tide gage staff.

There were no current stations established.

E. SMOOTH SHEET

In accordance with item No. 7 of the instructions (see reference A.) the boat sheet was used as a smooth-sheet with the field plotting of positions serving as a final record of the survey. It is the consensus of this party that this method of presenting the final record tends to detract from the working efficiency of the field unit. It is believed that a more complete survey involving the same amount of time for field work and processing would have been done had the regular method of plotting the smooth sheet after completion of the field work been adhered to.

The projection of the boat-(smooth)-sheet was ruled on the ruling machine in the Washington Office by Austin Riley. There is no record of the projection being checked. *Checked by verifier.*

Shoreline and topographic detail is to be recompiled using new photography (see item 4 of the instructions). Where topographic detail was determined in the field it has been inked on the sheet.

F. CONTROL STATIONS

Triangulation used to control the survey was established in 1935 and 1938 by parties of Charles Pierce and Wm. Scaife, respectively.

Additional control was established by the West Coast Field Party using planetable methods and is submitted under a separate topographic survey report. The graphic control was determined during the period of this survey. [WCFP-B-54] G.C. sheet to be destroyed. some signals adjusted to agree with positions on T-11463 sounding lines were not replotted.

T- 8679 (1945)
T- 8680 (1944-45)
T- 8686 (1944-45)
T- 8687 (1945)

G. SHORELINE AND TOPOGRAPHY

The shoreline and topographic detail, as shown on the sheet, was taken from a composite print of planimetric maps compiled in 1945 - 46 at 1:9600 scale and expanded to a 1:5000 scale. It was transferred to the boat-(smooth)-sheet in the Washington Office. Temporary shoreline to guide hydrographer in blue. Shoreline inked in black on smooth sheet is from T-11463 (1954-55).

The U. S. Navy pier at the head of the Swan Island Basin. (Latitude 45° 33' 30", Longitude 122° 41' 58") and the pier at the northwest end of Swan Island (Latitude 45° 34' 05", Longitude 122° 43' 21") have been determined by planetable methods and are shown in black ink. in agreement with T-11463

The low water line has not been delineated in various spots over the sheet due to log booms and raft storage.

H. SOUNDINGS

An 808 J fathometer no. SPX 154, calibrated at 800 fathoms per second was used throughout the survey except in the vicinity of the Navy pier at the head of Swan Island Basin where some handlead lines were ran in order to obtain additional soundings in the area.

Handlead soundings used for bottom samples and fathometer comparisons were taken throughout the area covered by the sheet.

At the time of this survey the Columbia and Willamette Rivers were in flood stage due to the yearly spring "freshlet". This condition caused excessive tide corrections to be applied to all soundings.

A daily correction to soundings, as determined by bar checks, was applied to all fathometer soundings. Abstracts of these corrections are attached to this report.

I. CONTROL OF HYDROGRAPHY

The hydrography was controlled by sextant fixes throughout the area. In some of the docks between high wharves or piers it was necessary to control the lines by time and course. Only a few positions were plotted in this manner.

J. ADEQUACY OF SURVEY

The survey is considered complete except for certain areas that are as follows:

Lat. 45° 33' 47" Long. 122° 42' 18", logs covering area prevented development.

Lat. 45° 33' 55" Long. 122° 42' 40" to Lat. 45° 34' 13" Long. 122° 43' 11", logs covering area prevented development.

Lat. 45° 33' 28" Long. 122° 42' 00" to Lat. 45° 33' 38" Long. 122° 42' 18", Pontoons covering area prevented development.

Lat. 45° 33' 51" Long. 122° 42' 40" to Lat. 45° 34' 07" Long. 122° 43' 15", ships tied alongside wharf.

Lat. 45° 34' 02" Long 122° 43' 23", a ship was tied up to the pier to west of dry dock. A split was desirable in the slip south of the dry dock but it was not obtained.

Shore area from Swan Island Basin entrance to northwest limits of the sheet; dolphins, piles, barges and boats prevented further developement of the area.

Lat. 45° 33' 52" Long. 122° 44' 00", log booms prevented further developement.

Lat. 45° 33' 40" Long. 122° 43' 40", extensive log storage prevented developement of the area.

Lat. 45° 33' 15" Long. 122° 42' 45", extensive log storage prevented developement of the area.

Lat. 45° 32' 59" Long. 122° 42' 11", it was desirable to have a split in this area but it was not obtained.

Lat. 45° 33' 05" Long. 122° 41' 42", extensive log storage prevented developement of the area.

This sheet covers an area that was surveyed in 1938 and in part in 1946. Dredging operations, and harbor changes have caused considerable change in the channel area and around the wharves in the Swan Island Basin.

The depth curves can be adequately drawn throughout the sheet, except in the log storage areas where soundings could not be obtained.

The survey is considered adequate to supersede prior surveys for charting.

K. CROSSLINES

12 % crosslines were run throughout the area.

The crossing of lines were found to be in very good agreement except in the vicinity of Latitude 45° 34' 17" Longitude 122° 44' 15" where the depths are 03 % in error when using integral feet. rectified by verifier

L. COMPARISON WITH PRIOR SURVEYS

The area covered by this survey was previously surveyed in 1938, sheet H 6334, scale 1:10,000, and part of the area was redone in 1946, sheet H 7124, scale 1:5,000. Due to dredging operations over the years the area had changed considerably so that the present work is not in good agreement.

A comparison with the latest U. S. Engineers survey (March 13 1953 No. WR 1-79/3 scale 1:5000) shows the two to be in close agreement except that the Engineers work appears to be from one to two feet deeper throughout.

On March 15 1954 the U. S. Engineers made a survey of the upper end of Swan Island Basin (WR 8-10 scale 1:5000). Comparison shows the depth curves to be in close agreement with this survey but the depths are from 2 to 3 feet deeper.

M. COMPARISON WITH CHART

The inshore areas of the latest edition of chart 6155 (54-4/12) are in fair agreement with this new survey but the channel areas show considerable change due to dredging operations.

In comparing the topographic detail of the chart with the new work it was found that the following features will need to be changed.

Lat. 45° 34' 04" Long. 122° 44' 21", charted pier has been removed.

Lat. 45° 34' 20" Long. 122° 44' 30", charted wreck is a "floating hulk" of a ship with a concrete hull. Additions to the pier south of the hulk should be added.

Lat. 45° 33' 47" Long. 122° 43' 54", pier to be added to the chart.

Lat. 45° 32' 59" Long. 122° 42' 12", the 5 charted dolphins in this area no longer exist.

Lat 45° 33' 19" Long 122° 42' 03", charted dolphin has been removed and should be expunged from the chart.

Lat. 45° 34' 00" Long. 122° 43' 28", charted dolphins at ends of ruined shipways do not exist.

M. COMPARISON WITH CHART, (Contd)

Lat. 45° 33' 31" Long. 122° 42' 00" to Lat. 45° 33' 45" Long. 122° 42' 15", the charted dolphins between these limits have been removed.

On 7 May 1954, when the river stage was only 5 feet above the Columbia River Datum, the area covered by this survey was inspected for broken piles and other features that would be covered by the forthcoming "freshlet" stage of the river. The resulting locations are recorded in Hydrographic Record Vol. VI and accepted positions are shown on the sheet using a red day letter.

N. DANGERS AND SHOALS

No new dangers or shoals were found in the course of this survey.

P. AIDS TO NAVIGATION

Swan Island Lighted Buoy 2 (see 1953 Pacific Coast Light List, No. 1627) was found to be located at Lat. 45° 33' 580 m. Long. 122° 42' 674 m. in 37 feet of water (see position 73 b, 17 May 1954). This is the only floating aid that falls with the limits of the sheet.

The Swan Island Lower Light and the Swan Island Middle Light were located by planetable cuts and are submitted with the topographic sheet report.

A flashing red light, privately maintained by the Port of Portland is located on the outer end of the most northerly pier on Swan Island at Lat. 45° 34' 244 m. Long 122° 43' 461 m.

The positions of fixed aids to navigation are reported on Form 567, Chart Letter: WCFP-54-1, dated 16 June 1954.

Objects selected for use of the U. S. Coast Guard have been plotted on a copy of chart 6155.

This chart has been forwarded to Supervisor, Midwestern District for delivery to the proper Coast Guard authorities.

Q. LANDMARKS FOR CHARTS

Data for Landmarks for Charts are submitted on Form 567, Chart Letter WCFP-54-2, dated 16 June 1954, a copy of which is included in this report. Attention is called to the note in regard to charting of objects in Swan Island Basin as requested by the Commanding Officer, U. S. Naval Reserve Training Center, Swan Island.

U. MISCELLANEOUS

An abstract of the velocity corrections to be applied to echo soundings is included in this report.

Roy M. Sylar
Roy M. Sylar
Supervisory, Cartographer

Approved & Forwarded

C. A. George

C. A. George
CDR., USC&GS
OinC, West Coast
Field Party

SPECIAL HYDROGRAPHIC SURVEY

Vicinity of Swan Island - Portland, Oregon

STATISTICS

Vol. No.	Day Letter	Date	HL Sdgs.	No. Pos.	Stat Miles Sdg.
I	a	13 May		144	10.7
II	b	17 May		179	20.9
III	c	18 May		208	25.0
IV	d	20 May	1	127	11.3
V	e	21 May	20	120	9.9
VI	f	24 May	37	13	0.9
TOTALS			67	791	77.7
VI	a	7 May		21	
VI	a	25 May	35	35	0.2
Grand Total			102	847	77.9

Total area 1.25 square statute miles.

TIDE NOTE

TO ACCOMPANY SPECIAL HYDROGRAPHIC SURVEY

Vicinity of Swan Island - Portland, Oregon

Sheet No. H- (WCFP 05154)

A tide gage and staff was installed at the Union Oil Company Pier, Willbridge, Oregon, Latitude 45° 34' 00" Longitude 122° 44' 06" and the resulting record was used for reducing all soundings plotted on the sheet.

The Columbia River Datum, to which all soundings are referred, reads (minus) -4.76 feet on the tide staff. No corrections for differences in time and height were applied to the observed tides.

This plane of reference value was obtained from level connections to Tidal Bench Marks V 14 (1920) and E 30 = 1286 (C of P) using the elevations above the Columbia River Datum as referred to on Tidal Bench Mark sheet entitled "Oilton, (Texaco Oil Company Dock) Willamette River, Oregon" and dated 2/19/48.

SPECIAL HYDROGRAPHIC SURVEY

Vicinity of Swan Island - Portland, Oregon

VELOCITY CORRECTION ABSTRACT

Date & Day Letter	Depth ft.	Corr.	Scale	Depth ft.	Corr.	Scale	Remarks
13 May a	0 to 6.5	0.0	A				Use entire day
	6.6 to 9.5	-0.2					
	9.6 to 12.0	-0.4					
	12.2 to 14.8	-0.6					
	14.9 to 17.0	-0.8					
	17.1 to 24.0	-1.0					
	24.1 to 32.5	-1.2		36.0 to 48.0	-1.0	B	
	32.6 to 48.0	-1.0		48.1 to 57.0	-1.2		
	48.1 to 54.0	-1.2	A				
17 May b	0 to 8.2	+0.2	A	42.0 to 48.0	-0.4	B	Use entire day
	8.3 to 14.2	0.0		48.1 to 52.2	-0.6		
	14.3 to 18.0	-0.2		52.3 to 55.5	-0.8		
	18.1 to 36.0	-0.4		55.5+	-1.0		
	36.1 to 48.0	-0.6					
	48.0+	-0.8	A				
18 May c	0 to 4.4	+0.2	A	42.0 to 44.0	0.0	B	Use from 1c to 97c
	4.5 to 7.6	0.0		44.1 to 48.0	-0.2		
	7.7 to 12.0	-0.2		48.1 to 51.2	-0.4		
	12.1 to 21.6	-0.4		51.3 to 54.0	-0.6		
	21.7 to 40.6	-0.6					
	40.6+	-0.8	A				
18 May c	0 to 4.8	+0.2	A	42.0 to 44.0	+0.4	B	Use from 98c to 208c
	4.9 to 7.8	0.0		44.1 to 50.6	+0.2		
	7.9 to 38.8	-0.2		50.7 to 56.0	0.0		
	38.9 to 48.0	-0.4					
20 May d	0 to 13.0	0.0	A	42.0 to 49.0	0.0	B	Use entire day
	13.1 to 18.5	-0.2		49.1 to 53.0	-0.2		
	18.6 to 24.0	-0.4		53.0+	-0.4		
	24.1 to 46.0	-0.6					
	46.0+	-0.8	A				
21 May e	0 to 12.4	0.0	A	up to 48.0	+0.2	B	Use until pos 107e @ 13-19-00
	12.5 to 18.0	-0.2		48.0+	0.0		
	18.1 to 24.0	-0.4					
	24.1 to 28.8	-0.6					
	28.9 to 38.0	-0.8					
	38.0+	-1.0	A				

VELOCITY CORRECTION ABSTRACT

(Continuation)

Date Day Letter	Depth ft.	Corr.	Scale	Depth ft.	Corr.	Scale	Remarks
21 May @	0 to 14.0 14.1 to 19.2 19.2+	0.0 -0.2 -0.4	A	41.0 to 48.0 48.0+	+0.6 +0.8	B	Use from Pos. 108 @ to end of day

NAMES OF HYDROGRAPHIC SIGNALS

USED ON SHEET NO. H-

(WOFP 05154) to be destroyed

Hydro. Name	Origin
OCM	Portland, Concrete Stack, 1913 - 430
HAM	39½ (WHK), 1912 - 791
KER	Portland, Union Pacific R.R. Co. Elevated block tank, 1935 - 368
GIF	Portland, Kerr-Gifford elevator flagstaff, 1938 - 436, 437
PAC	Portland, Union Pacific R.R. Co. dock, flagstaff, 1938 - 436
BLO	Portland, black signal, at SW end SP&S R.R. bridge, 1938 - 432
GIL	Portland, Bethlehem Steel Co. Stack, 1938 - 432
SHE	Portland, Shell Oil Co. taller of 2 stacks, 1938 - 432
TAN	Portland, Standard Oil Co. dock flagpole, 1938 - 433
UNI	Portland, Union Oil Co. dock flagpole 1938 - 433
EVE	Portland, dolphin No. 9, 1938 - 434
SOH	Portland, Oceanic Terminals tank, 1935 - 367
KIT	KITTRIDGE, 1938, 1945 - 419 (dm.)
LIM	Graphic Control Sheet (WOFP-B-54)
RUE	" " " " " "
CAT	" " " " " "
DOL	" " " " " "
WOL	" " " " " "
HOW	" " " " " "
IPP	" " " " " "
AL	" " " " " "
ITE	" " " " " "
LAG	" " " " " "
MAC	" " " " " "
ACK	" " " " " "
VEN	" " " " " "
BOO	" " " " " "
RED	" " " " " "
TOM	" " " " " "
YAR	" " " " " "
ANK	" " " " " "
ROD	" " " " " "
DOC	" " " " " "
STA	" " " " " "
HID	" " " " " "
SKEL	" " " " " "
RAN	" " " " " "

Δ Vol 2, OREGON p 1180 (Swan Is. lower light)

TEE	Graphic Control Sheet (WGTR-B-54)					
WAN	"	"	"	"	"	"
LIT	"	"	"	"	"	"
TEL	"	"	"	"	"	"
USE	"	"	"	"	"	"
SHO	"	"	"	"	"	"
DOM	"	"	"	"	"	"
CRE	"	"	"	"	"	"
OCK	"	"	"	"	"	"
SET	"	"	"	"	"	"
XEL	"	"	"	"	"	"
TEX	"	"	"	"	"	"
HAR	"	"	"	"	"	"
TRI	"	"	"	"	"	"
POD	"	"	"	"	"	"
DOS	"	"	"	"	"	"
TAT	"	"	"	"	"	"
VER	"	"	"	"	"	"
ROW	"	"	"	"	"	"
DEW	"	"	"	"	"	"
SOC	"	"	"	"	"	"
AIR	"	"	"	"	"	"

Form 5
April 1

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

[redacted] LANDMARKS FOR CHARTS

TO BE CHARTED } STRIKE OUT ONE

[redacted]

I recommend that the following objects which have [redacted] been inspected from seaward to determine their value as landmarks to be charted on [redacted] the charts indicated.

The positions given have been checked after listing by [redacted]

[redacted]
Chief of Party

STATE [redacted] See L. 587 (54)

CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION LATITUDE * ° ′	POSITION LATITUDE * ″ D. M. METERS	POSITION LONGITUDE * ° ′	POSITION LONGITUDE * ″ D. P. METERS	DATUM	METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHART AFFECTED
[redacted]													

* = not used as signal on hydro survey

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating*

Form 7
April 1

DEPARTM IT OF COMMERCE
U. S. COAS, AND GEODETIC SURVEY

[redacted] page [redacted]

[redacted] LANDMARKS FOR CHARTS

TO BE CHARTED } STRIKE OUT ONE

[redacted]

I recommend that the following objects which have [redacted] been inspected from seaward to determine their value as landmarks be charted on [redacted] the charts indicated.

The positions given have been checked after listing by [redacted]

[redacted] *Chief of Part*

STATE [redacted] L 587(54)

CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION LATITUDE* ° ′	LATITUDE* ″ D.M. METERS	LONGITUDE* ° ′	LONGITUDE* ″ D.P. METERS	DATUM	METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHART AFFECTED
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]			[redacted]
	[redacted]												
	[redacted]												
	[redacted]												
	[redacted]												
	[redacted]												
	[redacted]												
	[redacted]												
	[redacted]												
	[redacted]												
	[redacted]												
	[redacted]												

Pg 15

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating*

APPROVAL SHEET

TO ACCOMPANY SPECIAL HYDROGRAPHIC SURVEY

Field No. WCFP 05154 - Vicinity of Swan Island - Portland, Oregon

The sheet and accompanying records have been inspected.

The boat sheet was examined daily as the field work progressed.

Soundings could not be taken in certain areas due to ships and log rafts. Otherwise, the survey is considered to be complete and adequate. No additional work is recommended.

C. A. George

C. A. George
CDR., USC&GS
Chief of Party

Ref.

22/MEK
FP-West Coast

16 April 1954

To: Comdr. Clarence A. George
CinC, USC&GS West Coast Field Party
P. O. Box 1429
San Diego 12, California

Subject: SPECIAL HYDROGRAPHIC SURVEY, VICINITY SWAN ISLAND, PORTLAND, OREGON.

1. After terminating field work in the vicinity of San Diego, California, and prior to taking up field work on Project CS-372 at Willapa Bay, Washington, a hydrographic survey shall be made in the vicinity of Swan Island, Portland, Oregon.

2. The Hydrographic Office, U. S. Navy, has requested a large-scale chart of Swan Island Basin and a large-scale hydrographic survey is required to furnish charting information.

3. The limits of the area to be surveyed are shown on a section of chart 6155, which is furnished. The survey shall be made at 1:5,000 scale. A boat sheet is furnished.

4. A composite print of planimetric maps compiled in 1945-46 at 1:9,600 scale has been made on a metal-mounted sheet at 1:5,000 scale. This sheet shall be used to locate hydrographic signals by graphic-control methods. Triangulation stations shall be used as control for graphic-control surveys. The shoreline will be recompiled using new photography and, in general, relocation of the shoreline during the present survey is not required, but detail which cannot be located by photogrammetric methods shall be located during the graphic-control survey. Signals which are near the shoreline shall be described in sufficient detail to permit small discrepancies between the graphic-control survey and the shoreline located by photogrammetric methods to be adjusted.

5. In general, the spacing of sounding lines shall not exceed 50 meters. A copy of prior survey H-6334 (1:10,000-scale 1938) is furnished at 1:5,000 scale.

6. Soundings obtained during the present survey shall be reduced to depths below the Columbia River Datum. Staff readings shall be obtained at hourly intervals during the time hydrographic surveys are in progress, either from a staff of the Corps of Engineers which is in a suitable location to furnish water-level control for the survey area, or from a staff established in the survey area. The elevation of the tide staff used shall be checked by connecting the staff with three bench marks in accordance with standard practices. Bench-mark data for Clifton (Texas Oil Company dock) are furnished. It is suggested that the Corps of Engineers may have bench marks on Swan Island and that it may be feasible to establish a staff on Swan Island where it can be read by personnel of the Photogrammetric Office.

7. The records for this survey will not be smooth processed and the boat-sheet positions shall be plotted with sufficient accuracy to serve as a final record of the survey. Soundings shall be checked and reduced before being penciled on the sheet, and care shall be taken to make the figures legible.

8. All data for this survey will be sent to the office of the Supervisor, Midwestern District, Portland, Oregon. Triangulation data will not be furnished as they will be available locally.

9. The records for this survey shall be sent to the Washington Office in the form of a special report at an early date after completing the field work.

10. Detail within the survey limits now charted outside the high-water line on chart 6155 shall be inspected to determine the present condition of the features. Where features, such as piling, etc., can no longer be seen, information shall be obtained as to whether any underwater part of the feature still remains in place.

11. All field work shall be in accordance with the Hydrographic Manual and General Instructions to Hydrographic Parties dated 25 February 1954.

12. Travel for civilian personnel shall be in accordance with Chapter T-8 of the Bureau Finance Manual.

13. The receipt of this letter shall be acknowledged.

(Signed) Robert W. [illegible]
Acting Director

cc. Supervisor, Midwestern Dist.
Portland Photogrammetric Office
Tides and Currents Division
Photogrammetry Division

GEOGRAPHIC NAMES

Survey No. H-8113

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Oregon			(for title)						B.G.N.	1
Portland									"	2
Willamette River									"	3
Swan Island										4
Swan Island Basin										5
					Names approved					6
					7-12-54. h. Heck					7
										8
										9
										10
										11
										12
Willbridge			(tide station)							13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

M 234

FORM 537a
(9-24-47)

DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

REGISTER NO. T -

TOPOGRAPHIC TITLE SHEET

FIELD NO. WCFP-B-54

Each Planetable and Graphic Control Sheet should be accompanied by this form, completed so far as practicable, when forwarded to the Washington Office.

STATE: Oregon

GENERAL LOCALITY: Willamette River - Portland, Oregon

LOCALITY: Vicinity of Swan Island

SCALE: 1:5000

DATE OF SURVEY: May, 1954

VESSEL: West Coast Field Party

CHIEF OF PARTY: C. A. George

SURVEYED BY: G. E. Haraden

INKED BY: G. E. Haraden

HEIGHTS IN FEET ABOVE MHW OR_____ ☐ TO GROUND ☐ TO TOPS OF TREES

CONTOUR APPROXIMATE CONTOUR FORM LINE INTERVAL_____FEET

PROJECT NUMBER

REMARKS:

Graphic-Control Survey for special hydrographic survey;

vicinity of Swan Island.

As noted in D.R. p. 1 some displacement assisted in control on bluelines. Adjustment was made in positions of several signals in transfer to H-8113 to harmonize with positions on T-9463

All applicable data transferred to H-8113

-APS-

7/19/55

12136

DESCRIPTIVE REPORT TO ACCOMPANY GRAPHIC CONTROL SHEET: WCFP-B-54

Special Survey - Vicinity of Swan Island - Portland, Oregon

A. PURPOSE

The purpose of this survey was to locate sufficient signals to control a special hydrographic survey in the vicinity of Swan Island, Portland, Oregon.

B. LANDMARKS

Objects recommended to be charted as landmarks are submitted on Form 567.

C. CHARACTER OF CONTROL USED

Thirteen, USC&GS triangulation stations were used to control the survey. The positions of eleven of these were furnished on the projection. In addition, two stations: WALL and MADRONA, established by the Port of Portland and based on the State Plane Coordinates, Oregon North Zone, were used. These stations were plotted using the State Grid which was furnished on the sheet. Coordinate positions of these two stations can be found on the topographic description cards, Form 524.

D. METHODS USED

A metal-mounted sheet prepared in the Washington Office was used. The scale of the sheet was 1:5000. Shoreline and topographic detail from a composite print of planimetric maps compiled at 1:9600 scale had been enlarged and transferred to the sheet. This transfer included triangulation stations used for control.

Some difficulty was encountered in orienting the planetable due to the fact that the composite sheet was made from four maps and there appeared to be some displacement of the control. To compensate for this displacement, the following method was used: At triangulation station setups, the table was oriented so as to distribute the error equally over the area where cuts were taken. At some setups, where only a few cuts were taken and where the cuts were nearly the same in azimuth, the table was oriented on the triangulation station nearest in azimuth to the signals being cut in.

Eleven three-point fixes, five setups over triangulation stations, and three eccentric setups were made. All signals were located by four or more cuts.

Positions of some signals corrected on H-8113 to agree with location on T-11463

E. SHORELINE

Although the mean high water line could not be identified because of the river stage, a few sections of shoreline were located.

At the southeastern end of Swan Island Basin, about 0.25 mile of shoreline was located and shown in pencil on the sheet. The height of water at the time was 9.2 feet above the Columbia River Datum. The only high water line that could be identified was a line of debris left on the beach by previous freshlets; this line was also rodded in and shown in pencil. A short section of debris line near signal ANK was also penciled in.

The pier at the head of Swan Island Basin serving the U. S. Naval Reserve Training Center and the U. S. Marine Corps Reserve was rodded in. The long pier at the northwest end of Swan Island was also located. Also shown on T-11463 (1954-55)

F. SPECIAL OBJECTS LOCATED

The radio masts, (signals MAY, JUN, and WED) and the flagstaff (signal TAF) were located at the request of the Commanding Officer, U. S. Naval Reserve Training Center.

G. PLANETABLE POSITIONS

A list of positions of recoverable objects is attached to this report.

H. RECOMMENDATIONS

The shoreline and topographic detail transferred to the graphic control sheet from the composite print of planimetric maps was very helpful in the field. However, when an enlargement of scale is involved, it is recommended that the projection and control be plotted on the control sheet before the detail is transferred. It is believed that this would eliminate the discrepancies noted in Paragraph D above, and would result in a more accurate determination of signals.

Respectfully submitted

G. E. Haraden

G. E. Haraden
Ensign, USC&GS

Approved and Forwarded

C. A. George

C. A. George
CDR., USC&GS, OinC, West Coast Field Party

PLANETABLE POSITIONS

RECOVERABLE TOPOGRAPHIC STATIONS

Object & Description	Lat	DM	Long	DP	Signal Name	Remarks
Chimney, Sears Roebuck Building	45 33	(556) 1296	122 42	(1242) 59	Ack	Center of top
Elev. Silver Tank, Willamette Iron & Steel Corp.	45 32	(462) 1390	122 41	(330) 971	AIR	Finial
Telephone booth, end of Pier	45 33	(932) 920	122 41	(31) 1270	Boo	Center of top
E'ly gable, tin bldg, Penna. Salt Co.	45 34	(1367) 485	122 44	(759) 542	Don	
Flag pole on Port of Portland Bldg.	45 34	(1735) 117	122 43	(1098) 203	Hid	
Swan Island Middle Light	45 33	(729) 1123	122 42	(178) 1123	Lit	
Flag pole on U. of P. Campus	45 34	(1361) 491	122 43	(716) 585	Lum	
Sign "Oregon Steel Mills, Keep Off, Pumping Station"	45 33	(346) 1506	122 43	(193) 1108	Ore	Center of sign
Wooden tripod atop 20' tower	45 33	(694) 1158	122 42	(894) 407	Pod	Center of top
Swan Island Lower Light	45 33	(134) 1718	122 43	(654) 647	Ran	
Red Light on end of Pier	45 34	(1608) 244	122 43	(840) 461	Red	
Black Stack of SP & SRR	45 32	(110) 1742	122 42	(314) 987	Row	Center of top
Skeleton Tower on end of Pier	45 34	(1670) 182	122 43	(671) 630	Skel	Center of tower
Black Stack of Standard Marine Supply Inc.	45 33	(212) 1640	122 42	(234) 1067	Sta	Center of top
Red fire box on Texaco Pier	45 33	(127) 1725	122 43	(999) 302	Tex	Center of box
Wh.brick chimney of USN & MCR Training Center Bldg.	45 33	(1092) 760	122 41	(124) 1177	Tow	Center of top
N'ly cor. Shaver Trans. Co. Bldg.	45 33	(1779) 73	122 42	(647) 654	Ver	

Object & Description	Lat	DM	Long	DP	Signal Name	Remarks
Flag pole U.S.Coast Guard	45 33	(1137) 715	122 41	(368) 933	Yar	
SW Corner largest bldg on Swan Island	45 33	(318) 1534	122 43	(1106) 195	Wan	

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8113

Records accompanying survey:

Boat sheets .....; sounding vols. 6; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 5 Env.

special reports, etc. Hydrosheet (Combined boat & smooth sheet); 1 Descriptive Report; Miscellaneous Data filed with a-day fathograms; 1 copy of Corps of Engineers Drawing No. WR-8-10; 1 each Photostat Copies of H-6334 & H-7124;

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

Number of positions on sheet		847
Number of positions checked		81 (9%)
Number of positions revised		16
Number of soundings revised (refers to depth only)		98
Number of soundings erroneously spaced		26
Number of signals erroneously plotted or transferred		6 *
Topographic details	Time	(topo not available)
Junctions	Time	1
Verification of soundings from graphic record	Time	9½ hrs

Topo. Application EE Thomas

Verification (without topo) by Gordon J. Thompson Total time 116 hrs Date 30 Aug 54

Reviewed by A.R. STIRNI Time 28 34 64 hrs Date 19 July 55 20 Oct 54

* Extra time used to detect errors in signal positions partly because of distortion in blueline projection on planetable.

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8113 FIELD NO. WCFP 05154

Oregon, Portland, Willamette River, Swan Island

Project No. Instructions, 16 April 1954

Surveyed 5-25 May 1954 Scale 1:5000

Soundings: Control:

808.J Fathometer
Leadline

Sextant fixes on
shore signals

Chief of Party - C. A. George
Surveyed by - K. A. MacDonald and R. M. Sylar
Protracted by - R. M. Sylar
Soundings plotted by - R. M. Sylar
Verified and inked by G. J. Thompson and E. E. Thomas
Reviewed by - A. R. Stirni 20 July 1955
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with the manuscript of reviewed air-photographic survey T-11463 (1954-55)

Signals were located on graphic control sheet WCFP-B-1954. All applicable information thereon has been applied to the present survey and the graphic control sheet is marked for destruction.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated except in some inshore areas where log-booms and other obstructions prevented the complete development of the low-water line by the regular system of sounding lines.

The bottom in the Willamette River area is a fairly smooth

dredged channel subject to scouring and silting during spring freshets and low river stages. Swan Island Basin has an irregular bottom caused by dredging and current action.

4. Junctions with Contemporary Surveys

This is a special survey in a changeable area. Junctions with other surveys were not effected. Soundings charted from recent Corps of Engineers surveys at the limits of the present survey are in adequate agreement with present depths.

5. Comparison with Prior Surveys

A. H-1672 (1885), 1:10,000

This prior survey has been superseded by H-6334 and H-6335 of 1938 and is considered in the review of those surveys. Further consideration is unnecessary

B. H-6334 (1938), 1:10,000
H-6335 (1938), 1:5,000

A comparison between these prior surveys and the present survey reveals numerous changes due to erosion by river currents, construction and periodic dredging. The entire northwest end of Swan Island has been changed by the construction of drydocks, a large pier and shipways. The latter are now in a state of ruin.

Depths on the present survey generally differ by 1-to 6 ft. from former depths. Areas of most pronounced differences are shown in the following comparison:

Latitude	Longitude	Prior Depth	Present Depth
45°33.65'	122°43.50'	24-33 feet	6-8 feet
45°33.80'	122°43.75'	26-27 "	15-17 "
45°33.10'	122°42.35'	12-20 "	5-6 "

C. H-7124 (1946), 1:5,000

This prior survey covers a portion of the present survey east of long. 122°42' and a small area in Willamette Channel at lat. 45°33.50', long. 122°43.25'. Numerous changes in the bottom have occurred subsequent to the prior survey. Depths of 29-to 30 ft. at lat. 35°33.6', long. 122°43.31' in the channel area of the prior survey fall in present depths of from 35-to 37 ft. East of long. 122° 42' there are irregular differences of 1-to 3 ft. between the prior survey and the present survey.

The present survey is adequate to supersede the prior surveys within the common area.

6. Comparison with Chart 6166 (First Edition 5/2/55)
Chart 6155 (Latest print date 4/12/54)

A. Hydrography

Hydrography on Chart 6166 originates with the present survey after verification but prior to review. No charting discrepancies are noted.

Hydrography on Chart 6155 originates with various surveys by the Corps of Engineers, the latest of which are the Willamette River survey of January 1952 (BP's 48572-73) and Swan Island Basin surveys of September 1951 (BP's 50990-91) and March 1954 (BP-51282), supplemented by two soundings from the present survey at lat. 45°34.08', long. 122°43.05' and one sounding at lat. 45°33.54', long. 122°42.05' (published in H.O.N.M. 34, 1954.)

Numerous differences of as much as 3-6 ft. are noted between the charted hydrography and the present survey. The present survey supersedes the charted hydrography in the Swan Island Basin except the 3 soundings from the present survey mentioned above. In the remaining area the present survey is superseded by a subsequent survey by the Corps of Engineers made in January 1955, (BP's 52162-63) except for 3 shoal soundings (27,28 and 30 ft.) at lat. 45°33.48', long. 122°43.17'. These 3 soundings, on the same shoal, lie between two sounding lines on the survey by the Corps of Engineers and are not disproved.

B. Aids to Navigation

The present survey positions of all aids to navigation are in agreement with the charted positions and adequately mark the features intended.

7. Condition of Survey

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

(b) This survey was field plotted directly on the smooth sheet. No boat sheet was used. The field plotting complies with the normal accuracy standards of smooth plotting.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions, except as noted below in paragraph 9.

9. Additional Field Work

Within the area covered, the survey is basic and no additional field work is recommended. Many of the areas noted on page 4 of the Descriptive Report as being obstructed by log rafts at the time of the survey have been subsequently surveyed by the Corps of Engineers. No recent soundings, however, have been taken in the large unsurveyed area centered in lat. 45°33.15', long. 122°42.45'. Soundings of this area would be desirable.

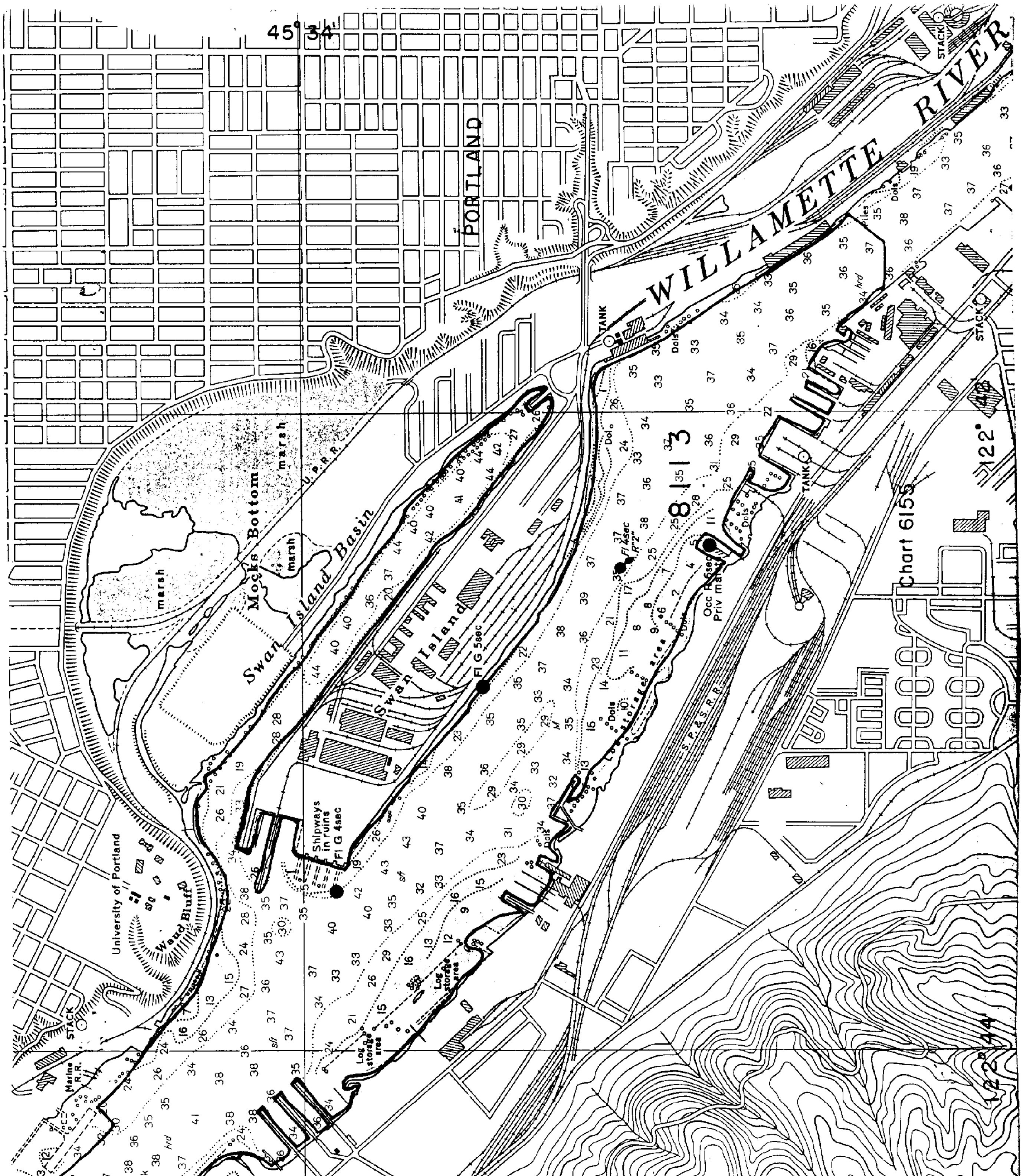
Examined and Approved:

H. R. Edmonston
Chief, Nautical Chart Branch

E. R. McCarthy
Acting Chief, Chart Division

J. C. Bull
Chief, Hydrography Branch

Earl O. Heaton
Chief, Division of Coastal Surveys


45° 34'
PORTLAND
WILLAMETTE RIVER
Swan Island Basin
Swan Island
Mocks Bottom
marsh
U.P.R.R.
University of Portland
Waud Bluff
STACK
TANK
Marine R.R.
Wreck
HORN
Piles
Dols
Shipways in ruins
Fl G 4sec
Fl G 5sec
Occ R 6sec Priv maint
Log storage area
S.P.&S.R.R.
8113
Chart 6155
122° 42'
122° 44'
750
1000

RHC

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~: 15 July 1954

Division of Charts: R. H. Carstens

Plane of reference approved in
7 6 volumes of sounding records for

HYDROGRAPHIC SHEET 8113

Locality Williamette River, Oregon

Chief of Party: C. A. George in 1954
Plane of reference is Columbia River Datum, reading
-4.8 ft. on tide staff at Willbridge (Union Oil Co. Dock)
37.0 ft. below B. M. V 14 (1920)

Condition of records satisfactory except as noted below:

E. C. McKay
Tides Branch

Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE 877933

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8113

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
9/1/54	6166	L.a.m.	~~Before~~ After Verification and Review.
9/4/56	6155	L.a.m.	~~Before~~ After Verification and Review ✓
			No corr except in Bryan Island Basin superseded in part by later U.S.E. surveys.
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.