8050
WIRE DRAG

Diag. Cht. No. 6460-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Wire Drag

Field No. LJ-1153 W.D. *Office No.* H-8050 W.D.

LOCALITY

State Washington

General locality Puget Sound

Locality Carr Inlet

19~~4~~53

CHIEF OF PARTY

Kenneth S. Ulm

LIBRARY & ARCHIVES

DATE September 28, 1953

B-1870-1 (1)

8050
WIRE DRAG

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WIRE DRAG ~~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. H-8050

Field No. LJ-1153 W.D.

State WASHINGTON

General locality PUGET SOUND

Locality CARR INLET

Scale 1:10,000 Date of survey 25-31 July - 1953 4-7 Aug - 1953

Instructions dated 22 JUNE 1953

Vessel LESTER JONES

Chief of party KENNETH S. ULM

Surveyed by KENNETH S. ULM

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

Fathograms scaled by G. Palms

Fathograms checked by GCP JEG

Protracted by Wm. M. Martin

Soundings penciled by H.C.Parsons

Soundings in fathoms feet at ~~MLW~~ MLLW

REMARKS: DUAL CONTROL VISUAL FIXES.

Wire drag strip subdivisions by Kennth S. Ulm & H.C.Parsons.

Depths on smooth sheet and area-depth sheet in feet.

Depths on sounding overlay tracing in fathoms

U. S. GOVERNMENT PRINTING OFFICE 777032

DESCRIPTIVE REPORT

TO ACCOMPANY

WIRE DRAG SHEET NO. 1153

PROJECT NO. CS-359

CARR INLET, WASHINGTON

INSTRUCTIONS:

Instructions for this work were dated 22 June 1953.

CHARACTER AND LIMITS OF SHEET:

This sheet is a wire drag survey in Carr Inlet requested by the Research and Development Planning Division, Bureau of Ships, Department of the Navy. It is proposed to establish an acoustic range for submarines in the area covered by the sheet. The submarines will operate along a course 316° true beginning at latitude 47°-12.87' N, longitude 122°-37.20' W ending at latitude 47°-16.48' N, longitude 122°-42.28' W. Instrumentation will be installed in the center of the course at latitude 47°-14.68' N, longitude 122°-39.80' W. The area covered by the wire drag lies between lines normal to the ends of the course between the 50 fathom curves in the area southeast of the instrument station and between the 45 fathom curves in the area northwest of the instrument station.

Two shoals, one of 20 fathom in latitude 47°-16.15', longitude 122°-43.05' and one of 23 fathoms in latitude 47°-16.05', longitude 122°-42.65 were cleared by an effective depth within 5 feet.

The scale of this sheet is 1:10,000.

The position interval was 5 minutes practically throughout the sheet, except at the beginning and ends of lines.

Dual control and visual fixes were used throughout the sheet.

Effective depths ranged from 117 to 359 feet.

CONTROL AND DATUM:

This sheet is on the North American 1927 datum. Signals were taken from graphic control sheets A-1953 and B-1953 this vessel.

DATES OF SURVEY:

Tendays work was done on this sheet as follows: 25,-31 July inclusive and 4-6 August inclusive. In addition a small amount of sounding was accomplished on 7 August.

TIDAL REDUCERS:

Tide reducers for this sheet were taken from the records of the portable automatic tide gage at Steilacoom, Washington. For futher tidal information see attached tidal data sheet.

HYDROGRAPHIC INVESTIGATIONS:

In the area from latitude 47°-16', longitude 122°-42.5' to latitude 47°-16', longitude 122°-42.5', the wire drag was grounded several times in depths that should have been clear from soundings obtained on Survey No. 6103, 1935.

A hydrographic investigation was therefore made of this area to determine the extent of shoaling. The sounding was done with 808 fathometer No. 75 mounted in Launch 92 and by personnel of the LESTER JONES. Control was by three point fixes on signals which had been located to control the wire drag.

Tide corrections were obtained from the portable tide gage at Steilacoom, Washington.

This investigation disclosed a shoal in latitude 47°-16.7', longitude 122°-42.5' with a least depth of 37 fathoms. The least depth previously shown in this area is 42 fathoms. The investigation also indicates that the 23 fathom shoal in latitude 47°-16.05', longitude 122°-42.6' has been extended ~~considerably~~ to the northeast. Except for these discrepancies there is good general agreement between the old soundings and the new.

It is recommended that the processing office plot this investigation on an overlay so as not complicate the drag strips. Attached to Desc. Report

It is recommended that shoaler soundings obtained on this investigation be charted.

SPLITS:

None. except where shoals were dragged { 47° 15.8 / 122° 42.9

HOLIDAYS:

Every attempt was made to drag into the limits laid down on copy of Survey H-6103 furnished with the instructions. However in some instances this could not be complied with due to the following reasons:

1. Due to the length of the tow line (approximately 1500') there was not room for the guide launch to tow the N buoy close enough to the beach without grounding the launch.

2. Due to the length of the tow line it was impossible to make some of the angular turns as laid out.

3. On the northwest corner of the limits of the course the forty five fathom curve extended further into the area of the course than was anticipated by the old survey. A hydrographic investigation was undertaken to define the limits of the 45 fathom curve in this section.

4. In order to make the required drag tests by the tender change of upright depths had to be held to a minimum, due to the length of time necessary in making the tests.

5. The slope of steep banks on the sides of the course were greater than allowable 2½% of section between upright lengths of adjacent buoys.

It is believed that the holidays along the edges of the project are not critical, and the area covered is sufficient for the needs of the course. In order to meet the time limit set for the completion of the survey it was felt that there was no justification for taking additional time covering these holidays or attempting to clear shoal areas verified by the hydrographic investigation of this vessel.

GENERAL:

The following notes on the plotting of this sheet may be of value to the smooth plotter, verifier and reviewer.

A day - This days work should not be plotted due to excessive lift. The area is covered by subsequent strips.

B day - On G.L. position 23 F buoy grounded but slipped off before an investigation could be made by the tender. At the time the uprights were set at 330 feet with an effective depth of 320 feet due to 10 feet lift. The general depths from hydrographic sheet are 54 fathoms (324'). It is recommended that no depth be plotted on this grounding as it is quite possible that maximum lift did not exist at the time of the grounding. This is based on the action of the F buoy in slipping off the grounding before an investigation could be made.

C day - Drag grounded on known shoal depths after starting to drag. Drag was entirely free with a normal bight on position 5C. Strip was plotted starting at position 5C. The grounding of No. 6 (52c) buoy set at 296 feet effective depth is in agreement with the hydrographic investigation of this vessel which shows general depths of 49 fathoms instead of 50 fathoms from hydrographic sheet H-6103.

D day - The F buoy grounded between EL positions 18.2 and 19.4 and was dragged through the soft mud along the edge of a steep bank, however buoy No. 6 was floating normally. So No. 6 buoy path was inked instead of F buoy path while F buoy was aground. The area was later covered on G day. As the grounding of F buoy is in agreement with the hydrography the grounding was not plotted.

E day - At the end of the drag strip opposite G.L. position 56, N buoy, No. 1 buoy and No. 2 buoy grounded. This area was outside the project limits and the sounding lines from previous surveys were quite widely spaced. A hydrographic investigation by this vessel verified the groundings. As time in completing this survey was an essential factor no attempt was made to clear these groundings.

There was no indication that N buoy was aground between G.L. positions 51 to 56. However there is a discrepancy as the hydrographic investigation and the grounding at tender position 2f, show shoaler water than the effective depth of the drag. Therefore buoy path No. 1 was inked instead of N buoy between positions 51 and 56. The only explanation being that the mud in this area was very soft and gave no indication of a ground at N or that there was excessive lift at N buoy which had not been tested due to the fact N-1 was a slant section.

F-day - N buoy was inadvertently dragged into shoal water of general depths of 42-43 fathoms. As No. 1 buoy was floating normally end launch continued dragging after grounding of N buoy and area between F & N buoys was inked and claimed.

Strip between G.L. positions 33-42 was not plotted as drag went aground in soft mud while moving into position and there is no assurance when drag was entirely free. Groundings observed by the tender were investigated and the positions plotted. These soundings by the tender were in agreement with hydrographic investigation by this vessel.

G day - Between G.L. positions 33 and 34 N buoy grounded on side of a steep bank. Buoy slipped off before tender could investigate. Hydrographic sheet shows 45 fathoms in the vicinity of the grounding. At time of the grounding buoy No. 1 was towing normally, so buoy path No. 1 was inked instead of N buoy path for the period of the grounding.

H day - Between G.L. positions 2.6 to 4.4 N buoy was aground being dragged through the mud which is in agreement with the hydrography. No. 1 buoy was floating normally so buoy path No. 1 was inked instead of N buoy path for the period N buoy was aground.

J day - The groundings at No. 1 buoy, tender position 1j and N buoy, tender position 2j are in agreement with the depths found on the hydrographic investigation of this vessel.

K day - The 20 fathom shoal in latitude 47°-16.15', longitude 122°-43.05' was cleared by 117 feet effective depth. The 23 fathom shoal in latitude 47°-16.05', longitude 122°-42.65' was cleared by 136 feet effective depth. Grounding at No. 3 buoy, tender position 1k shoalest sounding obtained 22.2 fathoms (133') cleared with 126 feet effective depth. It was intended to clear this shoal by five feet and it was thought until the records had been processed that this had been accomplished. The correction to the fathometer sounding was larger than anticipated.

not noted in review

DISCREPANCIES AND COMPARISON WITH PREVIOUS SURVEYS AND CHARTS:

The only discrepancy noted in the field was the area in the northwest corner of the project. This has been discussed under the previous paragraph "Hydrographic Investigation".

The smooth plotter should make a detailed comparison with previous surveys and the charts covering the area, after the smooth sheet has been plotted.

PERSONNEL AND EQUIPMENT:

The Ship LESTER JONES was used as the Guide Launch with the Chief of Party in charge. The YTL-363, USN, was used as the End Launch LCDR. C. A. Schoene in charge. Motor sailor No. 92 was used as the tender. Ensign J. E. Guth and Bos'n H. R. Tomlinson took turns acting as drag-master. The drag was set out from the end launch with the tender towing the drag into position. LCDR. Schoene, an angleman and recorder were assigned to the end launch. The crew of the YTL-363, J.W.Pettibone, BM2 in charge operated the vessel while dragging and assisted in setting out the drag and picking it up. The Navy personnel co-operated fully, worked ~~out~~ long hours cheerfully and were certainly a factor in completing the project within the allowable time.

A special report will be written going into detail on equipment and procedure of deep wire drag.

MISCELLANEOUS:

The buoy on Toliva Shoal was located by sextant angles, recorded in the tender record and plotted on the drag sheet.

The proposed location of the instrument barge and the hydrophone buoy was furnished by the Public Works of the 13th Naval District.

The Pacific Telephone & Telegraph Co. delayed laying their submarine cable across Carr Inlet until the wire drag survey was completed.

Respectfully submitted,

Kenneth S. Ulm,
Commander, C&GS
Comdg., Ship LESTER JONES

GROUNDINGS AND SHOALS:

There are listed below in tabular form, the groundings and shoals located.

POS. NO. & DAY LETTER	LATITUDE & LONGITUDE	GROUNDED EFFECTIVE DEPTH	LEAST SOUNDING DEPTH	CLEARED EFFECTIVE DEPTH	DEPTH PLOTTED	REMARKS
	o '	feet	feet	feet	fms.	
23B	47 - 15.30 122 - 40.35	320	None obtained	305		For depth plotted, see attached notes under General.
1c	47 - 16.50 122 - 42.33	296	295	2798	49	General depths 49 fms. from hydro investigation this vessel. Grid not plotted
2e	47 - 16.72 122 - 42.70	270	273½	Not cleared	45	Not cleared due to proximity to 37 fm. shoal found on hydrographic investig.
4e	47 - 16.43 122 - 42.65	270	261½	Not cleared	43	Not cleared in agreement with depths found on hydrographic investigation.
5e	47 - 16.43 122 - 42.51	275	261½	Not cleared	43	Not cleared in agreement with depths found on hydrographic investigation.
1f	47 - 16.54 122 - 40.98	282	255½	Not cleared	42	Not cleared outsided area involved. Agrees with general depths.
2f	47 - 16.20 122 - 42.12	275	264½	271	44	For discrepancies of clearing depth see explanation see attached notes under general.
3f	47 - 16.43 122 - 42.40	282	284½	279	47	Hydrographic Investigation shows general depths of 47 fms.
4f	47 - 16.25 122 - 42.50	275	188	126	31	Outside area 31 fms. in agreement with hydrographic investigation.
1j	47 - 16.11 122 - 42.25	272	247	Not cleared	41	In agreement with hydrographic investigation.
2j	47 - 16.15 122 - 42.35	272	255	Not cleared	42	In agreement with hydrographic investigation.
1K	47 - 16.14 122 - 42.63	136	133	126	126	Not discussed in review

HCR

LJ 1153 Wire Drag & Soundings.

Carr Inlet, Wash.

Processing Office Notes.

Smoothsheet.

The projection was made by hand on Whatman paper. The basic control is the adjusted triangulation of 1935. Topographic signals are from graphic control plate LJ-A & B- 53. As there is no recent shoreline for this area none was placed on the smooth sheet. The hydrography was placed on an overlay tracing.

H W Line added from topo. sheets of 1935 for identifying general area

49e to 56e. ϕ 47 16.5 λ 122 42.7

This is in the area covered by soundings. The end of the drag grounded. A contour was drawn at the drag depth. Effective depth of drag was claimed to the first buoy on the deep side of the contour.

ϕ 47 16.9 λ 122 42.

The edge of the 277 ft. drag strip passed over a shoaler 35 fm. sounding, per Sheet H 6103. It is recommended that this be cut back to the next buoy.

ϕ 47 15.8 λ 122 42.9

This area between the strips is incidental to sweeps over two shoal spots which were covered. The shoals, not general coverage, were the only objectives here.

Comparison with H 6103.

Lat.	Long.	Fms. LJ 1153	Fms. H 6103
47 16.2	122 42.46	36	41
16.25	42.55	30	36
16.26	42.5	32	37

The important differences between the two sheets is in this small area. Other parts of the common area are in good agreement, or agree within a fathom.

Area-depth sheet.

On account of the unusually great depths of the dragged area the color code of Page 40 Pub. 118 Wire Drag manual would not apply. The color code is shown on the sheet.

Area-depth sheet for Navy.

For the benefit of the Navy an area-depth sheet was made using black ink only to obtain good prints. Soundings in the vicinity of ϕ 47 16.2 λ 122 42.3 were shown in feet. Also, a tracing of the sounding sheet was made, in fathoms. Six sets of prints of these two sheets were furnished to the Navy.

Edgar L. Smith
Cart. Engr.

2 September 1953

C-17
CP/mls

To: District Public Works Officer
13th Naval District
Seattle, Washington

Subject: Carr Inlet, Puget Sound, Washington, wire drag survey of -

Reference:
(a) DPWO 13th ND msg 260200A May to BUDOCKS
(b) BUDOCKS msg 271814Z May to DPWO 13th ND
(c) BUSHIPS ltr A11/ Noise (371) Ser 371-235 dtd 20 May 1953 to Com.13
(d) DPWO ltr to USC&GS Seattle 29 May 1953 Ser.10112

The wire drag survey and processing of all records for Naval Restricted Area Carr Inlet in accordance with references has been completed.

Six copies are furnished you of an overlay sheet traced from the smooth plot showing outlines of dragged areas and the maximum effective drag depths at MLLW obtained over the entire project area. This is designated an area depth sheet.

Also furnished are prints of an overlay tracing from the smooth plot showing fathometer soundings taken at the north end of the project area where the Commanding Officer considered additional hydrography was required.

All sheets and records for this wire drag survey will be forwarded to Washington headquarters of the Coast and Geodetic Survey for verification and review and for record storage.

I wish to express my appreciation for the fine cooperation extended by your District Office in the execution of this wire drag project, which to my knowledge is the greatest depth dragged by this type of equipment.

Charles Pierce
Captain, USC&GS
Supervisor NW District

cc: Director, USC&GS
CO, LESTER JONES
Seattle Processing Office
District Engineer, C. of E.

Carr Inlet, Wash.

TIDAL NOTE

TO ACCOMPANY

WIRE DRAG SHEET NO. 1153

The data from Portable Automatic Tide Gage No. 296 at Steilacoom was used for reduction of soundings and wire drag depths.

Position of Gage - Latitude 47°-10.5'
Longitude 122°-35.9'

MLLW (from level records) = 4.9 feet on staff.

Carr Inlet, Wash.

STATISTICS

FOR

WIRE DRAG SHEET NO. 1153

DATE 1953	DAY LETTER	VOL-UME	STAT. MILES	POSITIONS	DRAG LENGTH FEET	TENDER SOUNDINGS	TENDER POSITIONS
July 25	A Blue	1	6.9	59	4200	- - -	- - -
26	B	1	4.5	52	4200	- - -	- - -
27	C	1	4.5	52	4200	1	1
28	D	1	6.1	65	4100(N-1=500)	- - -	- - -
29	E	2	4.6	56	4200	6	6
30	F	2	2.8	42	3600	4	4
31	G	2	4.9	54	2400	- - -	- - -
Aug. 4	H	3	1.6	15	2400	- - -	- - -
5	J	3	2.5	35	2400	2	2
6	K	3	2.6	27	2400	2	2

AREA DRAGGED 6.2 SQUARE STATUTE MILES

HYDROGRAPHIC
INVESTIGATION

Aug. 6	a Red	1	11.2	69	
7	b	1	4.8	38	

AREA SURVEYED 0.5 SQUARE STATUTE MILES

Lj 1153 Wire Drag.

Carr Inlet, Wash.

List of geographic names.

Carr Inlet

McNeil Island

Fox Island

Form 537a
Ed. Nov. 1929

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 No. LJ-A+B-1953

REGISTER NO.

State WASHINGTON

General Locality PUGET SOUND

Locality CARR INLET

Scale 1:10,000 Date of survey July, August, 1953

Vessel Ship LESTER JONES

Chief of party Kenneth S. Ulm

Surveyed by Jack E. Guth

Inked by Jack E. Guth

Heights in feet above ____ to ground to tops of trees

Contour, Approximate contour, Form line interval ____ feet

Instructions dated 22 June, 1953

Remarks:

GPO 266853

Planetable designated for destruction.
All applicable information transferred
to H-8050 WID. (1953)

ARS
11/16/55

DESCRIPTIVE REPORT

TO ACCOMPANY

TOPOGRAPHIC SHEET T-7058

USC&GSS LESTER JONES

Kenneth S. Ulm, Commander C&GS
Chief of Party

AUTHORITY:

Authority for this survey was the Director's Instructions, Project CS-359, to the Commanding Officer, Ship LESTER JONES, 22 June 1953.

LIMITS:

The sheet extends north from Latitude 47° 12' 30" Longitude 122° 36' 00" to Latitude 47° 17' 30" Longitude 122° 42' 00", west to Latitude 47° 16' 00" Longitude 122° 44' 00", south to Latitude 47° 12' 00" Longitude 122° 38' 00", then east to beginning.

CONTROL:

The control for this survey was furnished by third order triangulation executed by J. Senior 1935. About fifty per cent of the control was recovered and the rest was destroyed by a storm in the spring of 1951.

SURVEYING METHODS:

Signals and shoreline were located by intersections or rod readings. Standard practice was followed throughout the sheet.

Signal location was given priority and only that shoreline which could be rodded in without additional planetable set-ups was located.

GENERAL DESCRIPTION OF THE COAST:

The general coast area of the southwest side of Fox Island between signals GIBSON PT. LIGHT and PEG is steep and wooded. The

beach although steep is excellent for landing because of the smooth gravel and sand surface. Areas at the north of the island are flatter and more populated with homes and accessible roads.

The coast area on the mainland between signals QUO and HORSE is also steep and wooded with a steep beach but excellent for landing because of the gravel and sand surface.

The coast area on the mainland between signals COVE and MID to the west side of the inlet is generally low and sparsely wooded with a gradually sloping gravel beach. This area is very populated, and there are several accessible roads. The cove between Penrose Pt. and South Head make an excellent boat anchorage.

The general coast area on the northeast side of McNeil Island between signals WIG and ZOO, is steep and wooded, with the exception of Still Harbor. The beaches are steep and mostly of sand which makes landing excellent. The island is however a U.S. Penitentiary and trespassing is not allowed without permission.

GRAPHIC NAMES:

The geographic names that appear on Chart No. 6460 are adequate.

STATISTICS:

Number of hydrographic signals located 30
Statute miles of shoreline 0.2

Respectfully submitted,

Jack E Guth

Jack E. Guth,
Ensign, C&GS

Approved and Forwarded,

Kenneth S. Ulm

Kenneth S. Ulm,
Commander, C&GS
Comdg., Ship LESTER JONES

GEOGRAPHIC NAMES

Survey No. H-8050 W.D.

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	
Washington		(for title)							BGN	1
Puget Sound		"	"						"	2
Carr Inlet										3
McNeil Island										4
Fox Island										5
										6
				Names underlined in red are approved 10-14-53. L. Heck						7
										8
										9
										10
										11
Steilacoom		(location of tide station)								12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8050 W.D.

Records accompanying survey:

Boat sheets ..2...; sounding vols. .1...; wire drag vols. .6...;

bomb vols. .....; graphic recorder rolls .1 Env.;

special reports, etc. 1 Vol.-Tender Record ; 1 Smooth Sheet; 1 Descriptive Report; 2 Overlay Tracings; 1 Print H-6103;

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

Number of positions on sheet		564
Number of positions checked		44
Number of positions revised		2
Number of soundings revised (refers to depth only)		—
Number of soundings erroneously spaced		—
Number of signals erroneously plotted or transferred		—
Topographic details	Time	
Junctions	Time	8 hrs
Verification of soundings from graphic record	Time	4 hrs

Verification by A.R. STIRNI Total time 60 hrs. Date 11/10/55

Reviewed by A.R. STIRNI Time 45 hrs Date 11/21/55

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 8050WD FIELD NO. LJ-1153 WD

Washington, Puget Sound, Carr Inlet

Project CS-359 (Wire-drag)

Surveyed - July, August, 1953 Scale 1:10,000

Soundings: Control:

808 Fathometer Sextant fixes on shore signals

Chief of Party - K. S. Ulm
Surveyed by - K. S. Ulm
Protracted by - W. M. Martin
Soundings plotted by - H. C. Parsons
Verified by - A. R. Stirni
Reviewed by - A. R. Stirni 11/21/55
Inspected by - R. H. Carstens

1. Scope

The purpose of this wire-drag survey was to establish for the U. S. Navy an accoustic range for submarines in Carr Inlet along a course 316° true, beginning at lat. 47°12.87', long. 122°37.20' and ending at lat. 47°16.48', long. 122° 42.28'.

2. Shoreline and Control

The high-water-line originates with plane table surveys T-6447 (1935), T-6448 (1935), T-6449 (1935), and T-6450 (1935).

Graphic control surveys LJ-A-1953 and LJ-B-1953 have been designated for destruction. All applicable information thereon has been transferred to the present survey.

3. Comparison with Hydrographic Surveys

H-6103 (1935)
H-6104 (1935)

The effective depths on this wire-drag survey do not conflict with depths on hydrographic surveys H-6103 (1953 and H-6104 (1935).

In the vicinity of lat. 47°16.0' to lat. 47°17.0', long. 122°42.5' the wire-drag grounded several times where depths on prior survey H-6103 were deeper than the effective wire-drag depths. A hydrographic investigation therefore, was made of this area. This investigation revealed a least depth of 37 fms. at lat. 47°16.75', long. 122°42.50' on a shoal area approximately 200 by 400 meters in extent which had not been disclosed by the widely spaced soundings of H-6103 (see tracing in Descriptive Report).

Other differences in depth between the present survey development and the prior surveys are tabulated below.

Latitude	Longitude	Depths, H-8050	Depths, H-6103
47°16.13'	122°42.61'	22 fms.	25 fms.
47°16.20'	122°42.46'	36 fms.	41 fms.
47°16.25'	122°42.55'	30 fms.	36 fms.
47°16.27'	122°42.50'	32 fms.	37 fms.

These differences are probably due to slight errors in the position of soundings on the prior survey in an area of steep gradient.

The present soundings should supplement the prior survey in charting the area.

4. Comparison with Chart 6460 (print date 10/10/55

A. Hydrography

The hydrography originates with the previously discussed prior surveys supplemented by one sounding of 39 fms. from the present survey at lat. 47°16.65', long. 122°42.55'. There are no conflicts between the present survey and the charted information, however, it is recommended that the 37 fm. sounding on the present survey at lat. 47°16.75', long. 122°42.50' (closer to the channel) be charted instead of the aforementioned 39 fm. sounding.

B. Aids to Navigation

The only aid to navigation in the survey area is Toliva Shoal Lighted Bell Buoy which on the present survey is approximately 190 meters south of its charted position. A buoy testing area established subsequent to the present survey in the vicinity of lat. 47°15.0', long. 122°39.5', is indicated on the chart by area outlined with dashed line.

5. Condition of Survey

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

(b) The survey was accurately and neatly smooth plotted.

6. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

7. Additional Field Work

No additional field work is recommended on this survey.

Examined and Approved:

H. R. Edmonston
Chief, Nautical Chart Branch

E. R. McCarthy
Chief, Chart Division

J. C. Bull
Chief, Hydrography Branch

Earl O. Heaton
Chief, Division Coastal Surveys

RHC

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

15 October 1953

~~Division of Hydrography and Topography:~~

Division of Charts: R. H. Carstens

Plane of reference approved in
8 volumes of sounding ~~records for~~ and wire drag records for

HYDROGRAPHIC SHEET 8050

Locality Carr Inlet, Puget Sound, Washington

Chief of Party: K. S. Ulm in 1953
Plane of reference is mean lower low water, reading
4.9 ft. on tide staff at Steilacoom
58.4 ft. below B. M. 3 (1917)

Height of mean high water above plane of reference is 12.4 feet.

Condition of records satisfactory except as noted below:

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

U. S. GOVERNMENT PRINTING OFFICE 756675

43'-30"

42'30"

42'

45fms

Note: sndgs in red taken during wire-drag operations

Note: sndgs in red from wire-drag operations

45fms

GREEN 1935

QUO

40'-00"

17'-00"

39'-30"

16'-30"

PEG

OIL

16'-00"

15'-30"

H-8050 (1953) WD

Hydrography by Ship LESTER JONES in 1953

Scale . . . . 1 : 10,000

Soundings in fathoms at MLLW and are true depths

Overlay to accompany WD 1153 LJ.

WD1153
10,000

HCP WMM
HCP CAJP
HCP WMM

NA 1927
GREEN 1935
47°-16' 1609.0
122°-41' 691.8

47°-15'-00"

00"

42'-30"

42'-00"

41'-30"

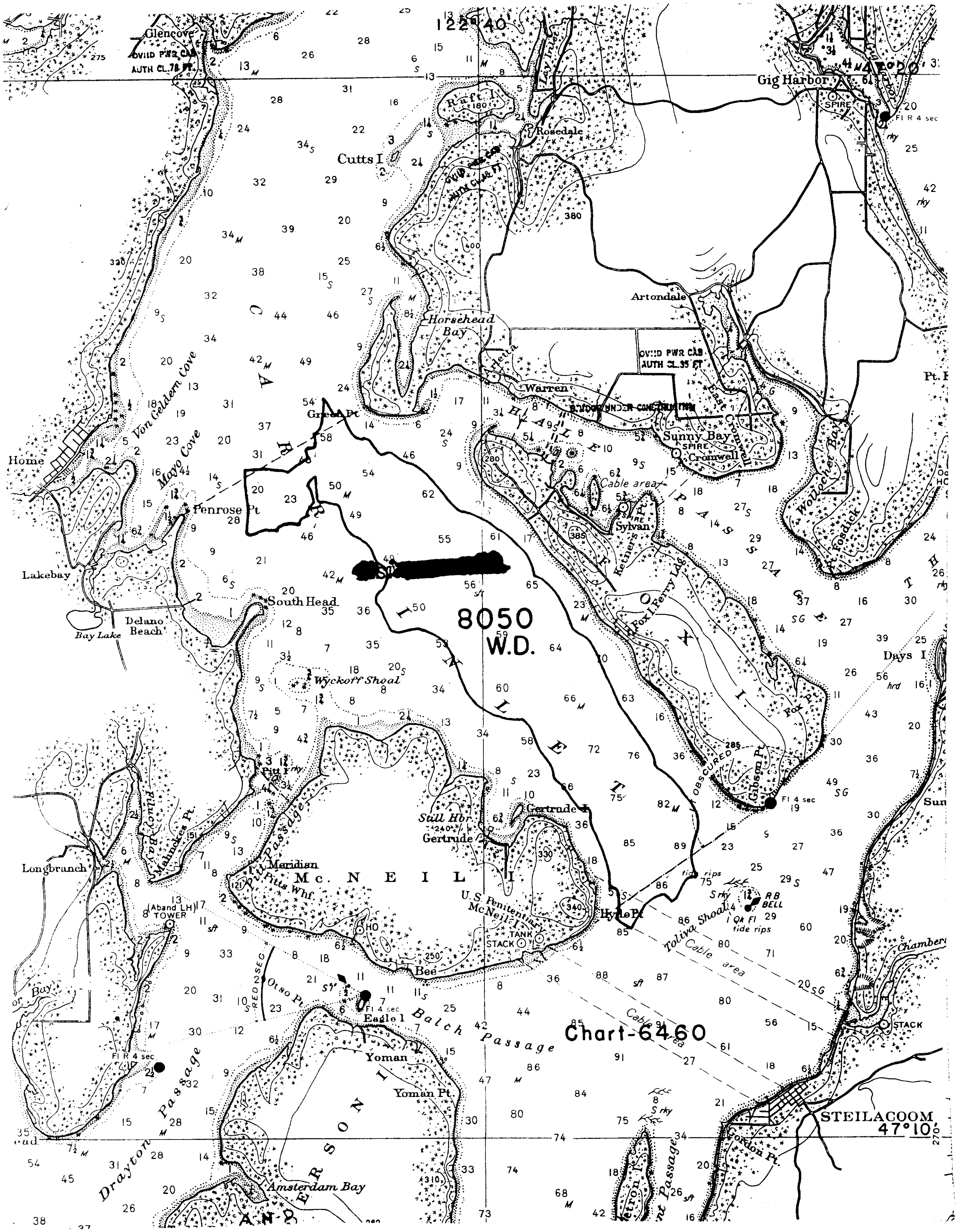
41'-00"

40'-30"

122° 40'-00"

14'-30"

39'-30"



122°40'
47°20'
Glencove
Gig Harbor
Raft I
Rosedale
Cutts I
Horsehead Bay
Artondale
Warren
Sunny Bay
Cromwell
Sylvan
Wollochet Bay
Fosdick
Home
Von Geldern Cove
Mayo Cove
Penrose Pt
Green Pt
Lakebay
South Head
Delano Beach
Bay Lake
Wyckoff Shoal
[redacted]
8050
W.D.
Fox I
Fox Pt
Gibson Pt
Days I
Longbranch
Pitt I
Pitt Passage
Mahnckes Pt
Meridian
Pitts Whf
McNeil I
Still Hbr
Gertrude I
Gertrude
U.S. Penitentiary McNeil I
Hyde Pt
Toliva Shoal
Cable area
Otso Pt
Eagle I
Balch Passage
Chart-6460
Yoman
Yoman Pt
Drayton Passage
Amsterdam Bay
Anderson I
STEILACOOM
47°10'
Gordon Pt
Chambers

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8050 W. D.

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
1/5/54	6401	D.H. Benson	Before ~~After~~ Verification and Review Shoal spots 37.23 only.
2/18/54	6460	EMB & JTW	Before ~~After~~ Verification and Review Completely
6-25-56	6460	R.K. DeSaulniers	~~Before~~ After Verification and Review
6-25-56	6401	R.K. DeSaulniers	Before After Verification and Review No condition
7-24-61	HO 15851	G.R. Johnson	~~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.