

8117

Diag. Cht. Nos. 6300-2 and 6380-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PA-05154 Office No. H-8117

LOCALITY

State Washington

General locality San Juan Island

Locality Roche Harbor & Mosquito Pass

19~~4~~54-59

CHIEF OF PARTY

J.C. Partington & M.J. Tonkel

LIBRARY & ARCHIVES

DATE October 22, 1956

B-1870-1 (11)

8117

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. H-8117

Field No. PA-05154

*see also title
sheet 1954WK*

State Washington

General locality San Juan Island

Locality Roche Harbor & Mosquito Pass

Scale 1:5000 Date of survey 3 April - 28 April 1959

Instructions dated 28 October 1958

Vessel Ship HODGSON

Chief of party M. J. Tonkel

Surveyed by R. E. Williams, R. E. Alderman, R. M. Sundean

Soundings taken by ~~XXXXXX~~, graphic recorder, hand lead, ~~XXX~~

Fathograms scaled by JDE, F.P.

Fathograms checked by M.J.T., R.E.W., R.E.A., E.M.

Protracted by J.E. Gearhart

Soundings penciled by J.E. Gearhart

Soundings in ~~XXXXXX~~ feet at ~~XXXXX~~ MLLW and are true soundings

REMARKS:

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. H-8117

Field No. PA-05154

*see also title sheet
1959 WIK*

State Washington

General locality San Juan Island

Locality Roche Harbor and Mosquito Pass

Scale 1:5,000 Date of survey 23 July to 15 Sept. 1954

Instructions dated Supplemental Instructions dated 11 March 1953, 8 May 1953, 20 January 1954 and 16 February 1954.

Vessel PATTON'S Launch No. 87

Chief of party J.C. Partington

Surveyed by F.X. Popper and R.F. Lanier

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

Fathograms scaled by P.T. Pediangco and R. Brooks

Fathograms checked by F.X. Popper, R.F. Lanier and L.W. Eason II

Protracted by L.W. Eason II

Soundings penciled by L.W. Eason

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

REMARKS: _____

702

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY NO. H-8117 (PA-05154)

ROCHE HARBOR AND MOSQUITO PASS, WASHINGTON

SCALE 1:5,000 - DATE 1954

U.S.C. & G.S.S. PATTON, J. C. PARTINGTON, COMDG.

#

A. PROJECT:

This survey was accomplished under Supplemental Instructions for Project CS-241, issued by the Director and dated 11 March 1953, 8 May 1953, 20 January 1954, and 16 February 1954.

B. SURVEY LIMITS AND DATES:

This survey includes Roche Harbor and its approaches from the north, Mosquito Pass, Nelson Bay, Garrison Bay, and Westcott Bay.

Junction was made on the north with H-8116 (PA-1254), a 1:10,000 scale survey of Spieden Chammel and adjoining water areas. Junction was made on the south with H-8086 (LJ-1353), a 1:10,000 scale survey of a portion of Haro Straits.

Field work was commenced on 23 July and was completed on 15 September 1954.

C. VESSEL AND EQUIPMENT:

All hydrography was done in Launch No. 87, a 30 foot diesel powered motorsailer operating from the PATTON. Soundings were taken with an 808A depth recorder (No. 51). Because there was a large amount of grass in the area, which made it very difficult to determine where the bottom actually was on the fathogram, a sounding chair was rigged on the bow of the launch and over a great portion of the survey, simultaneous hand lead and fathometer soundings were taken in an effort to determine where the bottom actually was. Difficulties were further increased because of a considerable current in Mosquito Pass which tended to bow the leadline; also for the first few days the leadsman was inexperienced; however he soon became proficient.

Bottom samples were taken by wire with a hand sounding machine mounted on the launch.

D. TIDE AND CURRENT STATIONS:

The records from the standard tide gage located at Friday Harbor were used for the reduction of soundings for the first three days of work; after that, records from a portable tide gage installed at Roche Harbor were used.

E. SMOOTH SHEET:

The smooth sheet ~~will be~~ constructed and plotted by personnel of the ~~Seattle Processing Office.~~

F. CONTROL STATIONS:

A scheme of second order triangulation was established by J. J. Gilbert in 1894 and additional stations were established by C. M. Durgin in 1942.

Additional signals, necessary for hydrography, were located by plane table on topographic sheets Pa-54-A and PA-54-B.

Sheets to be destroyed

G. SHORELINE AND TOPOGRAPHY:

The shoreline and topography of the area has already been compiled from air photographs of the area which were field inspected by personnel of the Portland Office.

Signals were located by plane table on a 1:5,000 scale because the air photo compilation was made on a 1:10,000 scale while the hydrography was done on a 1:5,000 scale.

H. SOUNDINGS:

Soundings were taken with an 808A-type depth recorder (No. 51) operated on the foot scale. Hand lead soundings were taken simultaneously over a considerable portion of the area because clumps of dense grass made fathogram interpretation difficult, if not impossible in some cases.

No hard and fast rules can be given as to which sounding - hand lead or fathometer - should be used. There are discrepancies between fathometer and leadline soundings. Part of these discrepancies are caused in the deeper water (six to nine fathoms) by a bow in the line caused by current in Mosquito Channel. In the very shoal waters there are often discrepancies caused by the fact that the sounding chair was mounted on the bow about 4 meters ahead of the transducers. As a general rule the fathometer soundings should be used except where the appearance of the fathogram indicates the existence of grass.

See RP 7 Review

see manuscript

When the leadline is used, it will be necessary to interpolate corrections for the leadline soundings as the leadline was measured on 23 July and again on 14 September.

H-8117 Velocity corrections as obtained from observations taken on ~~H-8116~~ were used. Phase or scale comparisons were taken on flat bottom and in good weather.

see abstract of bar checks in this report

Vol. 1, p. 17-18, c day

I. CONTROL OF HYDROGRAPHY:

The hydrography is controlled by three-point sextant fixes on signals ashore. No unusual or substandard methods were used for this purpose.

J. ADEQUACY OF SURVEY:

This survey is adequate and complete and should supersede previous surveys of this area. X

K. CROSSLINES:

The crosslines on this sheet constitute about 9% of the total miles of soundings for normal spacing of lines. Crossings are satisfactory.

L. COMPARISON WITH PRIOR SURVEYS:

Previous surveys of this area were made in 1894 at a scale of 1:10,000. The area covered by this survey includes parts of surveys H-2115 and H-2116. Soundings lines on previous surveys were more widely spaced and details and developments were not as complete, however the old survey and the new survey agree very well. Only one new shoal was found; and in at least two cases the modern survey failed to find as shoal depths as did the old survey. Both the old survey and charts 6379 and 6381 show a 9-foot shoal at Latitude 48° 37'.28 N., and Longitude 123° 10'.50 W; the shoalest depth determined in this survey was 11.6 feet. The old survey shows a 3½ foot spot and the charts show a ½ fathom spot at Latitude 48° 35'.07 N., and Longitude 123° 10'.31 W. The shoalest depth determined in this survey was 9.7 feet. 9ft shoal transferred to H-8117
pos 6.1
26 x 20 r

In short, the old survey, the new survey and the chart are very similar.

See PS&C of Review

M. COMPARISON WITH CHART:

With one exception, this section is covered in section L. For that exception, see Item Number 3 under "Dangers" in Section N. ✓

N. DANGERS AND SHOALS:

DANGERS:

1. A group of broken off, submerged piles located in Westcott Bay. The approximate center of this group of piles is Latitude 48° 35'.98 N., and Longitude 123° 08'.88 W; positions 5, 6, 7, 8, 9, and 10m. ✓

2. A group of broken off submerged piles located on the east side of Westcott Bay. The approximate center of this group of piles is Latitude 48° 35'.85 N., and Longitude 123° 08'.55 W. These piles are shown on the charts; at present however many of the piles have rotted off and are submerged at various stages of the tide and judging from their appearance the rest soon will be. These piles were located in this survey by plane table on Sheet PA-54-B. ✓

Item 3 of the preliminary review mentions, and chart 6379 shows, a rock 200 yards off White Point. A fairly close system of lines was run in this area and a visual search was also made. The shoalest sounding obtained was 6.4 feet (position 23) about 165 yards off White Point in Latitude 48° 35'.45 N., Longitude 123° 10'.30 W. ✓

See Review PC

Item 4 of the preliminary review mentions a 2-foot sounding in Latitude 48° 37' .17 N., and Longitude 123° 09' .26 W. There was no evidence of any such a sounding. *Disregard. Falls in depths of 8 ft on H-8117. Removed from chart on basis of early SE chart letters.*

SHOALS: 1. a ²⁷ ~~28~~ foot shoal ^{5E} ~~SW~~ of Barren Island in Latitude 48° 37' .³²20N, and Longitude 123° 09' .⁴³48 W., Position 1s. ✓

O. COAST PILOT:

Referring to Page 415, Line 32. The statement is made that "Water can be had at the wharves". This is no longer true. Lines 33 and 34 state that "Minor repairs to small craft can be made". There are no longer any facilities for boat repairs at Roche Harbor.

Currents up to two knots (estimated) are present in Mosquito Pass.

P. AIDS TO NAVIGATION:

There are no aids to navigation, either fixed or floating, within the limits of this survey.

Q. LANDMARKS FOR CHARTS:

There are no landmarks for charts in this area which have not already been charted.

R. GEOGRAPHIC NAMES:

There are no new geographic names. ✓

S. SILTED AREAS:

There is no evidence of any silting taking place within the limits of this survey. ✓

Z. TABULATION OF APPLICABLE DATA:

The following listed Special Reports are pertinent to this survey and report:

- ✓ 1. Descriptive Report to accompany topographic Sheets PA-54-A, PA-54-B, PA-54-C, PA-54-D.
- ✓ 2. Temperature and Salinity Observations

The following applicable data are attached to this report:

1. Table of Statistics
2. Tide Note
3. Abstract of bar checks, computation of index error and phase comparison note.

Respectfully submitted,

Francis X. Popper
Francis X. Popper
LCDR USC&GS

Approved & Forwarded:
J.C. Partington
J.C. Partington, CDR USC&GS
Cmdg., Ship PATTON

STATISTICS FOR HYDROGRAPHIC SURVEY H-8117 (PA-05154)

USC&GSS PATTON - PROJECT CS-241

Date 1954	Day Letter	Vol. Number	Hand Lead & Wire Snags	Number of Positions	Statute Miles of Sounding
23 July	a	1	24	24	--
6 Aug.	b	1	32	43	0.6
11 Aug.	c	1	45	45	--
18 Aug.	d	1	--	126	7.8
19 Aug.	e	1 & 2	9	87	5.8
20 Aug.	f	2	--	299	15.0
21 Aug.	g	3	17	285	16.5
22 Aug.	h	3 & 4	157	107	3.0
23 Aug.	j	4	27	141	5.8
24 Aug.	k	4 & 5	249	180	9.6
25 Aug.	l	5	3	6	--
26 Aug.	m	5	383	253	12.2
29 Aug.	n	5 & 6	402	301	14.2
10 Sept.	p	6 & 7	88	97	6.8
11 Sept.	q	7 & 8	264	319	16.7
12 Sept.	r	8	369	211	15.8
13 Sept.	s	8 & 9	204	144	7.1
14 Sept.	t	9 & 10	467	286	13.2
15 Sept.	u	10	<u>186</u>	<u>131</u>	<u>4.6</u>
			2906	3085	154.7

Area = 3.1 Sq. Stat. Miles

1959 Ad. Wk.

1131
4037

.1596
4681

TIDAL NOTE

to accompany

Hydrographic Sheet, Field No. PA-05154, Office No. H-8117

The portable automatic tide gage at Roche Harbor, Washington was used to reduce all of the soundings on this sheet. This tide gage was installed 25 June 1954 and operated continuously to 15 Sept. 1954. ✓

ROCHE HARBOR PORTABLE TIDE GAGE

Location:

At the east face of wharf owned by Roche Harbor Lime and Cement Company, Roche Harbor, Washington.

Latitude: 48° 36.55' Longitude: 123° 09.90' ✓

Plane of reference:

Mean lower low water. This value corresponds to 3.8 feet on the tide staff as furnished by letter from the Washington office. ✓

ABSTRACT OF BAR CHECKS

PA-05154

Date	Day	Correction at Depth				Remarks	
		4 ft.	12 ft.	30 ft.	42 ft.		
6 Aug. 54	b		+0.1	0.0	+0.2	Fathometer #51 Phase Corrections - Feb A = 0.0 ft. ✓ B = +0.6 ft. ✓ C = +1.1 ft. ✓ D = +0.8 ft. ✓ (From P. 18, Vol. 1, PA-05154)	
11 Aug. 54	c		0.0	-0.1	+0.2		
18 Aug. 54	d		0.0	0.0	+0.3		
		<u>4 ft.</u>	<u>12 ft.</u>	<u>24 ft.</u>	<u>42 ft.</u>		
19 Aug. 54	e		-0.1	-0.1	-0.6		
20 Aug. 54	f		0.0 -0.2	-0.2 -0.1	0.0 -0.3		
21 Aug. 54	g		-0.3 0.0	-0.4 -0.3	-0.3 -0.4		
22 Aug. 54	h		+0.1 0.0	0.0	0.0		Inboard transducers this bar check only
23 Aug. 54	j		-0.1 -0.1	-0.4 -0.2	-0.5 -0.4		
24 Aug. 54	k		0.0 +0.1	-0.1 0.0	0.0 0.0		
26 Aug. 54	m		-0.4	-0.5	-0.5		
29 Aug. 54	n		+0.1 0.0	0.0 0.0	0.0 -0.3		
10 Sept. 54	p		+0.4 +0.2	+0.2 +0.2			
11 Sept. 54	q		+0.4 0.0	+0.5 0.0	+0.7 -0.3		
12 Sept. 54	r		+0.3 +0.1	+0.1 +0.1	+0.3 0.0		
13 Sept. 54	s		0.0 0.0	-0.1 0.0	+0.2 0.0		
14 Sept. 54	t		0.0 0.0	+0.1 0.0	+0.2 0.0		
15 Sept. 54	u		+0.4 0.0	+0.7 0.0	+0.6 0.0		
Means:			+0.03	-0.02	-0.03		

Mn = 0.0

-0.1 range

1.2' range

1.3' range

LIST OF HYDROGRAPHIC SIGNALS SHEET H-8117 (PA-05154)

ROCHE HARBOR, WASHINGTON

Hydrographic Name	Source	Hydrographic Name	Source
Abe	PA-54-B	Gob	PA-54-B
Ace	"	Gus	PA-54-A
Add	PA-54-A	Hat	PA-54-B
Alp (Alp)	PA-54-A	Hex	PA-54-A
Ask	"	Hod	PA-54-B
Azo	PA-54-B	Hoe	PA-54-A
Bah	PA-54-B	Hub	PA-54-A
Bar	Tri.Sta. BARREN	Hum	PA-54-B
Bat	Tri.Sta. BATTLESHIP	Ice	Pages 13 & 14, Vol. 5, H-8117
Bed	PA-54-A	Ida	PA-54-B
Bell	PA-54-A	Ion	PA-54-A
Big	"	Irk	PA-54-B
Box	"	Its	PA-54-A
Bum	"	Ivy	PA-54-B
But	PA-54-B	Jap	PA-54-B
Cat	PA-54-A	Jar	PA-54-B
Cut	PA-54-A	Jay	PA-54-A
Cod	PA-54-B	Jim	PA-54-B
Cop	PA-54-A	Joe	PA-54-A
Cow	"	Joy	PA-54-B
Cry	PA-54-B	Ked	PA-54-B
Cur	PA-54-A	Ken	PA-54-B
Cut	"	Key	PA-54-B
Dave	Tri.Sta.DAVE 1942	Kid	PA-54-B
Day	PA-54-A	Kim	PA-54-A
Dim	PA-54-B	Lad	PA-54-A
Dip	"	Lax	PA-54-B
Dog	"	Leo	PA-54-B
Dud	PA-54-A	Lip	"
Dun	"	Log	PA-54-A
Ear	PA-54-B	Low	"
Egg	"	Mag	PA-54-A
Eel	PA-54-A	Moo	PA-54-B
Elf	"	Mug	"
Ev ^a	"	Mum	"
Far	PA-54-B	Nac	Tri.Sta.BARNACLE 1894, 1942
Fat	"	Nat	PA-54-A
For	PA-54-A	Nig	"
Fox	"	Nip	"
Fro	"	Nix	"
Gal	Page 63, Vol.5 H-8117	Non	PA-54-B
Gas	PA-54-B		
Gam	"		
Gin	PA-54-A		
Goat	"		

LIST OF HYDROGRAPHIC SIGNALS, SHEET H-8117 (BA-05154) Continued

Hydrographic Name	Source	Hydrographic Name	Source
Oak	PA-54-B	Sad	PA-54-B
Odd		Sag	PA-54-A
Ohm	PA-54-B	Sam	PA-54-A
Ohm	PA-54-A	Sky	"
Open	Tri.Sta.OPEN ₂ 1942	Tan	PA-54-B
Owl	PA-54-A	Tide	PA-54-A
Pad	Page 53, Vol. 2, H-8117	Tom	PA-54-A
Pal	PA-54-A	Toy	PA-54-A
Pass	Tri.Sta. PASS 1942	Use	PA-54-B
Paw	PA-54-B	Val	PA-54-B
Pet	Tri.Sta. KOPET 1894	Vet	PA-54-A
Pine	PA-54-A	Vex	PA-54-A
Pix	PA-54-A	War	PA-54-A
Pole	PA-54-A & B	Wee	PA-54-A
Pug	PA-54-B	Wes	Tri.Sta.WESTCOTT 1942
Quo	PA-54-B	Woo	PA-54-B
Rag	PA-54-B	Yak	PA-54-B
Ram	PA-54-A	Yea	PA-54-A
Rat	"	Yes	"
Rim	"	Zig	PA-54-A
Roc	Tri.Sta. ROCHE 1942	Zoo	"
Rock	PA-54-B		

PROCESSING OFFICE NOTES
H-8117 (PA-05154)

SMOOTH SHEET

The smooth sheet was hand constructed on Whatman paper in the Seattle Processing Office. Standard methods were used. The transfer of all topographic signals and detail from manuscript T-5590N, PA-A-54 & PA-b-54 was verified by persons other than the cartographer. ✓

SHORELINE

Some of the short sections of shoreline delineated on graphic control sheets PA-A-54 and PA-B-54 could not be reconciled with the photo compilation, T-5590N, and were rejected. Those revisions of shoreline which were accepted are shown in pencil on the smooth sheet. ✓

sec 71
REVIEW

SOUNDINGS

Considerable difficulty was encountered with fathogram interpretations because of grass mentioned in report. Because of many unknown factors such as currents bowing the leadline, displacement between sounding chair and fathometer transducers, synchronization of hand-lead and fathometer soundings and the large and somewhat arbitrary leadline correction that had to be applied, (the general rule suggested under par. 2 of the hydrographers report was applied.) ✓

Sec. H

A table was devised for interpolating corrections for leadline soundings. The table considers only the days during which the leadline was used and is attached to these notes. ✓

L.L.L. reducers corrected in 549 vols.

corr. instead of
+ as applied
etc

Leadline, phase and initial corrections were entered and checked in the Seattle Processing Office. ✓

The soundings were reduced and checked in the Processing Office. ✓

ADEQUACY OF SURVEY

The junctions, on the north with H-8116 and on the south with H-8086 were found to be satisfactory and the depth curves can be adequately drawn. ✓

Respectfully submitted

Leo W. Eason II

Leo W. Eason II
Cartographer, C&GS

Examined and Approved

William M. Martin

William M. Martin
Cart.-in-Charge S.P.O.

Approved and Forwarded

Frank G. Johnson

Frank G. Johnson, Captain C&GS
Seattle District Officer

Lead Line Corrections LL #1

PA - 0515A.

Date	% Cor'n.	FEET					FEET					FEET				
		0	5	10	15	20	25	30	35	40	45	50	55	60		
July 23	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Aug 6	7.1		.02	.04	.06	.07	.09	.10	.11	.12	.13	.13	.13			
11	14.3		.06	.09	.11	.14	.17	.20	.23	.24	.26	.26	.26			
19	21.4	.04	.05	.06	.09	.12	.15	.17	.21	.25	.26	.26	.26			
21	28.6	.06	.07	.14	.17	.23	.26	.29	.31	.33	.34	.34	.34			
22	35.7	.07	.09	.14	.18	.21	.25	.29	.31	.33	.34	.34	.34			
23	42.9	.09	.11	.17	.21	.26	.30	.34	.39	.43	.46	.46	.46			
24	50.0	.10	.12	.15	.20	.25	.30	.34	.39	.43	.46	.46	.46			
25*																
26	57.1	.11	.14	.17	.23	.29	.34	.40	.46	.51	.56	.60	.60			
29	64.3	.13	.16	.19	.26	.34	.38	.45	.51	.57	.64	.69	.73			
Sept 10	71.4	.14	.18	.21	.29	.36	.43	.50	.57	.64	.71	.78	.85			
11	78.6	.16	.20	.24	.31	.39	.47	.55	.63	.71	.78	.85	.90			
12	85.7	.17	.21	.26	.34	.43	.51	.60	.69	.77	.86	.94	.97			
13	92.9	.18	.23	.28	.37	.46	.55	.65	.74	.84	.93	.100	1.07			
14	100.0	.22	.25	.28	.37	.46	.55	.65	.74	.84	.93	1.00	1.07			
15	100.0	.22	.25	.28	.37	.46	.55	.65	.74	.84	.93	1.00	1.07			

As recommended in paragraph 3 under heading 'H.' of the hydrographers report, this table was derived through a percentage of use (2nd column) between calibrations. All corrections are positive since it was discovered at the end of the season that L.L.#1 was too short.

minus

L.W.E., II (Seattle Processing Office)

* L.L. used on 25 of Aug. for only 3 soundings, thus it was not used as a separate entry for corrections.

J.L.H.

Leadline measured 23 July and 14 Sept
page 3 & 7, Vol. F

DESCRIPTIVE REPORT

to accompany additional work to

HYDROGRAPHIC SURVEY NO. H-8117 (PA-05154)

SHIP HODGSON

1959 M. J. TONKEL, COMDG.

A. PROJECT

This survey was executed as a part of Project CS-241 in accordance with revised instructions, dated 28 October 1958, Paragraph 21. It supplemented a hydrographic survey by the ship PATTON in 1954, Registry No. H-8117.

B. SURVEY LIMITS AND DATES

This survey is in an area beginning at Hanbury Point, San Juan Islands, Lat. 48° 34.7', Long. 123° 10.4', through Mosquito Pass north to Roche Harbor and Pearl Island, further northwest to McCracken Point, Lat. 48° 37.4', Long. 123° 10.6', and northeast to Davison Head, Lat. 48° 37.4', Long. 123° 09.1'.

Field work began 3 April 1959 and was terminated on 28 April 1959.

No junctions with contemporary or prior surveys were made with the exception of a continuous comparison with Survey No. H-8117 (Field No. PA-05154).

C. VESSEL AND EQUIPMENT

The survey work was performed by Launch No. 95, and motor whaleboat No. 1189, both operating from the Ship HODGSON.

Soundings were obtained with 808 type fathometers Nos. 106 and 628 on Launch No. 95, and by vertical casts taken with leadline from both the motor whaleboat and launch.

D. TIDE AND CURRENT STATION

Soundings were referred to the standard tide gage at Friday Harbor, San Juan Island. All soundings were reduced to mean lower low water.

No current stations were observed.

E. SMOOTH SHEET

(The smooth plotting of this survey ^{was} ~~will~~ be executed by the Washington Office as per instructions.)

F. CONTROL STATIONS

All control was furnished on the blue-line print of hydrographic survey

H-8117 with the exception of three additional hydrographic signals established by sextant angles during the progress of the survey.

Signals used are listed in Section Z-5a of this report. A list of signals is also attached to Page One of Sounding Volume 1.

G. SHORELINE AND TOPOGRAPHY

The shoreline and topography was furnished on the blue-line print boat sheet.

H. SOUNDINGS

The purpose of this survey was to complete Field Sheet H-8117 (PA-05154) which had numerous holidays caused by dense grass on the bottom. During the early spring, the grass generally is not so thick, but still grew abundantly in much of the area (See Section T). Launch No. 95, with 808 fathometers, was used initially, until grass was encountered and made delineation of the true bottom impossible. Echo sounding lines were then supplemented by lead-line casts. However, because of inexperienced leadsmen, inaccurate leadline soundings were obtained. This practice was therefore modified to taking leadline soundings while the launch was motionless i.e., detached positions. In areas where there was little or no grass, sounding lines were run as close to the blue pencil lines on the boat sheet as was possible. Simultaneous fathometer soundings were taken with the leadline values for comparison. These showed the grass usually to be of a depth of approximately 2 feet with some growths of up to 5 feet. Only the leadline values were used. *in some areas* *in these particular areas*

Concurrently, motor whaleboat No. 1189 was used in obtaining leadline soundings in shoals, close to shore, and foul areas as detached positions.

Strong currents delayed all field operations.

During "d" - "g" days, 808 fathometer, No. 106 was substituted for 808 fathometer, No. 628, when the latter developed a mechanical breakdown.

Velocity and instrumental corrections were obtained by bar check three times daily in so far as possible. The bar was set at depths ranging from 6 to 48 feet at 1 fathom intervals.

A check was made by the hydrographer on the fathometer speed at the time of bar checks and at various other times during each day.

See Section Z-5c, d, e and f for tabulations of corrections.

F. CONTROL OF HYDROGRAPHY

All hydrography was controlled by sextant fixes, generally at $1\frac{1}{2}$ minute intervals.

J. ADEQUACY OF HYDROGRAPHY

This survey completes the area and the coverage is now believed to be adequate. No additional field work is deemed necessary at this time.

The junction with the 1954 survey is satisfactory and no excessive

differences exist.

K. CROSSLINES

One principal crossline was run across Roche Harbor. Soundings compared favorably with those of the 1954 and 1959 work.

L. COMPARISON WITH PRIOR SURVEYS

This survey compares satisfactorily with the 1954 survey. There are, however, a few previous soundings in grassy areas that were apparently interpreted at the top of the grass instead of the true bottom. It is recommended that these soundings be deleted.

Least depths on shoals are in good comparison but some new rocks were discovered (See Section N).

Also the following three items:

- 1. After an hour's time, a shoalest depth of 4 feet was found 3ft on the shoal near Lat. 48° 35.1', Long. 123° 10.3', comparing with a previous 3 feet. A fathometer sounding line produced a 3 foot sounding here, but this may be kelp. *shown on S/S.*
- 2. A previous 12 foot sounding of the main dock is believed to be in error. A development here did not produce any shoaling. *(H-2216, 1894)*
Lat. 48° 36.55'
Long. 123° 09.13'
- 3. A ~~low~~ ^{new} float system was under construction near the main dock at the time of this survey. See boat sheet.

M. COMPARISON WITH CHART

A comparison with the existing chart is generally satisfactory, with the following exceptions:

- 1. The rock shown west of White Point (Item 3, Preliminary Review dated 24 March 1953) was found to have a least depth of 6 feet, in agreement with the 1954 value. However, this is a small shoal, not a single rock as chart shows. *see RP6 Review*
- 2. Depths in the area between Pearl Island and the west end of Davison Head were found to be more than indicated on the chart. The shoalest is near 7 feet in an area generally 8 - 9 feet in depth. (Refer to Item 4, Preliminary Review dated 24 March 1953). *see item 184, part 4 of this Desc. Rpt.*

N. DANGERS AND SHOALS

Lat. 48° 36.12', Long. 123° 10.02'
 No new important dangers or shoals were found. Two new rocks, one north of Pole Island and one west of Delacombe Point, are indicated on boat sheet and in sounding volumes. *Lat. 48° 35.15', Long. 123° 10.21'*

O. COAST PILOT INFORMATION

Roche Harbor has its main entrance on the eastern side of the northern end of Henry Island, between it and Pearl Island. There is a 2nd channel for shallower draft vessels between the eastern end of Pearl Island and San Juan Island. Vessels using this channel should favor the east bank to avoid rock reef that bares two feet at MLLW. The harbor, which is landlocked, is about 1/2 mile in extent and has depths of 5 to 8 fathoms. It has good anchorage and is used extensively by yachts during the summer season. Regular communication is available by launch, ferry and highways with neighboring ports and islands. Telephone, mail and custom service is available in the town of Roche Harbor. Gasoline, water and provisions in small quantities are available at the dock and floats. Minor repairs can be made to small craft. Moorage is available for small craft at an extensive system of finger floats. The depth along the face of the main dock is 11-17 feet. The depth along the west side of the finger floats varies from 9 to 16 feet, and along the east side from 4 feet to 13 feet above MLLW.

P. AIDS TO NAVIGATION

There is one aid to navigation within the limits of this sheet. It is on the west end of Pearl Island. It was established in 1958 and appears as Pearl Island Light, No. 1962.5 in the Light List. Refer to Section Z-5h.

Q. LANDMARKS FOR CHARTS

The Roche Harbor Church Steeple is recommended as a landmark. Refer to accompanying Form 567. Refer to Section Z-5h.

R. GEOGRAPHIC NAMES

It is recommended that the following geographic names be accepted for publication:

A short sand beach at the head of a small cove on Henry Island, San Juan County, Washington, Lat. 48° 36' 30", Long. 123° 10' 50" is called "SMUGGLERS ROW" by local residents. Inquiries made thru Mr. Neil Tark, Manager of the Roche Harbor Yacht Club, verifies this usage.

These names are not to be applied
etc.
Auth
Jan 1960
MLB

It is also recommended that the point of land on San Juan Island, Wash., Lat. 48° 36' 55", Long. 123° 09' 20" be called "GOVERNOR'S POINT". This name appears to be in use by local residents, as was verified by Mr. Tark.

S. SILTED AREAS

There were no silted areas found during the course of this survey.

T. BOTTOM CHARACTERISTICS

No effort was made to determine bottom characteristics.

Grassy areas where the bottom had to be determined by handlead sound-

ings are outlined on boat sheet. ✓

A strange and interesting comb-like profile appeared near position 8d and 18d on the 8^A April bathogram. *Fath. governor malfunctioning.* ✓

Z. TABULATION OF APPLICABLE DATA

1. Topographic Sheets PA-54-A; PA-54-B & PA-54-D - to be forward separately.
2. Friday Harbor Std. Tide Gage Level and Inspection Report - forwarded 4/7/59.
3. Boat Sheet, (1959 work) H-8117 - to be forwarded.
4. Triangulation Recovery Data - to be forwarded.
5. Attached Material:
 - a. List of Signals ✓
 - b. Statistics
 - c. Velocity and instrument corrections (Bar Check Data)
 - d. Phase Comparisons
 - e. Settlement and Squat Test
 - f. Leadline Calibrations
 - g. Tidal Note
 - h. Non-Floating Aids or Landmarks for Charts
 - i. Approval Sheet

Respectfully submitted,

Richard E. Alderman

Richard E. Alderman
ENS, C&GS

LIST OF SIGNALS USED ON H-8117

NAME	ORIGIN
ABE	Furnished on Blueline Boatsheet
ACE	" " " "
ASK	" " " "
AZO	" " " "
BAN	" " " "
BAR	BARREN 1894
BED	Furnished on Blueline Boatsheet
BIG	" " " "
B(BON	Sextant Angle, Vol. 3, Page 54
BOX	Furnished on Blueline Boatsheet
BUT	" " " "
CAP	" " " "
CUT	" " " "
DIP	" " " "
DOG	" " " "
DUD	" " " "
EAR	" " " "
EEL	" " " "
EVA	" " " "
FAT	" " " "
FOX	" " " "
FRO	" " " "
GAM	" " " "
GAS	" " " "
GOB	" " " "
GUS	" " " "
HAD	" " " "
HUB	" " " "
HUM	" " " "
ION	" " " "
IRK	" " " "
JAR	" " " "
JOE	" " " "
KEY	" " " "
KID	" " " "
LEO	" " " "
LIN	Sextant Angle, Vol. 6, Page 2
LIP	Furnished on Blueline Boatsheet
MOO	" " " "
MUM	" " " "
NAC	BARNACLE 1894
NAT	Furnished on Blueline Boatsheet
NIG	" " " "
NAN	Sextant Angle, Page 2, Vol. 1
NOL	Furnished on Blueline Boatsheet
ODD	" " " "
OPEN	OPEN 2 1942
PAD	Furnished on Blueline Boatsheet
PET	KOPET 1894
POLE	POLE 1950 (Topo station)
PUG	Furnished on Blueline Boatsheet
QUO	Furnished on Blueline Boatsheet
RAG	" " " "
RAM	" " " "

NAME	ORIGIN
ROE	ROCHE 1942
ROCK	ROCK 1950 (Topo Station)
SAD	Furnished on Blueline Boatsheet
SKY	" " " "
TIDE	TIDE 1950 (Topo Station)
TOM	Furnished on Blueline Boatsheet
VAL	" " " "
VEX	" " " "
WAR	" " " "

Z-5b

STATISTICS

HYDROGRAPHIC SURVEY H-8117 (PA-05154)

USC&GSS HODGSON

PROJECT GS-241

LAUNCH NO. 95

VOL.	DAY	DATE	POS.	NAUT. MI. SDG.LINE	H. L.
1	a	4/4/59	80	3.2	--
1	b	4/5/59	67	3.9	38
1	c	4/6/59	72	3.8	73
1&2	d	4/7/59	94	5.1	--
2	e	4/8/59	79 ⁹⁰	5.6	--
3	f	4/9/59	48	3.2	13
3	g	4/15/59	50	--	50
3	h	4/16/59	116 ⁷	1.1	99
4	j	4/17/59	84	5.1	7
4	k	4/18/59	65	1.3	47
4	l	4/19/59	78	1.0	73
4	m	4/28/59	20	0.7	--
TOTALS			853	34.0	400

865

WHALEBOAT NO. 1189

5	a	4/6/59	133	--	133
5	b	4/7/59	83	--	83
5	c	4/8/59	170	--	170
6	d	4/9/59	51	--	51
6	e	4/17/59	145	--	145
6	f	4/18/59	119	--	119
6	g	4/28/59	31	--	31
TOTALS			731	--	731
GRAND TOTALS			1584	34.0	1131

1596

Z-5c
 808 MODEL
 FATH NO. 628
 LCH NO. 95

SUMMARY OF BAR CHECK CORRECTIONS
 PROJECT CS-241 SHEET H-8117(PA-05154)
 ROCHE HARBOR, WASHINGTON (1:5000 - 1954)
 LCH 95, Ship HODGSON APRIL 1959

(Corrected for 1.0 foot initial) Depth in Feet

DAY - DATE	6	12	18	24	30	36	42	48	Vol. & Page
808 No. 628									
a 4/4/59		0.0							1 3
		0.0							1 15
b 4/5/59	+0.1	+0.1	+0.1	+0.1	+0.0				1 25
	0.0	0.0	0.0	0.0	0.0				1 33
	0.0	0.0	0.0	0.0	0.0				1 42
c 4/6/59	0.0	+0.1	0.0	0.0	0.0	+0.2			1 44
	0.0	0.0	0.0	+0.1	0.0				1 55
	0.0	0.0	+0.1	0.0	+0.2	0.0			1 65
Sums	+0.1	+0.2	+0.2	+0.2	+0.2	+0.2			
Mean	0.0	0.0	0.0	0.0	0.0	0.0			
0.0 correction all depths sounded these days.									

h 4/16/59	+0.4R	+0.6	+0.4	+0.2	+0.2	+0.6	Reject		3 29
	+0.2	-0.4R	-0.2R	0.0R	0.0R	reject			3 40
	0.0	+0.2	+0.4	+0.2	0.0R				3 52
j 4/17/59	-0.4R	+0.3	+0.2	+0.3	+0.2				4 3
	+0.5R								4 14
	+0.2	+0.1	+0.3	+0.3	+0.1				4 24
	+0.1	+0.3	+0.4	+0.5	+1.0				4 26
k 4/18/59	+0.1	+0.4	+0.5	+0.65	+0.8				4 33
	+0.4	+0.55	+0.7	+0.9	+1.1				4 41
l 4/19/59	+0.2	+0.25	+0.35	+0.5	+0.6				4 56
	+0.05	+0.15	+0.4	+0.45	+0.7				4 56
Sums	+1.25	+2.85	+3.65	+4.0	+4.7	+0.6			
Mean	+0.16	+0.32	+0.41	+0.44	+0.59	+0.6			

Correction to Apply to h thru l days
 +0.0 ft. 0 thru 4.0
 +0.2 ft. 4.1 thru 11.3
 +0.4 ft. 11.4 thru 26.3
 +0.6 ft. 26.4 thru 36.0

Z-5c (Cont.)

SUMMARY OF BAR CHECK CORRECTIONS

808 MODEL

FATH NO. 106

LCH NO. 95

SHIP HODGSON

(Corrected for 1.0 foot initial)

DAY - DATE	DEPTH IN FEET							VOL. & PAGE	
	6	12	18	24	30	36	42			48
808 No. 106									
d 4/7/59	0.0	0.0	-0.2	-0.4	-0.4	-0.4			1 66
	-0.4	-0.2	-0.4	-0.3	-0.7	-0.6			2 10
	-0.4	-0.2	-0.3	-0.8R	-0.8	-0.4	-0.2		2 24
e 4/8/59	-0.4	-0.2	-0.2	-0.2	-0.6	-1.0			2 25
	-0.4	-0.2	-0.4	-0.5	-0.5	-0.8			2 35
	-0.1	-0.3	-0.3	-0.3	-0.5	-0.5	-0.7		2 48
Sum	-1.7	-1.1	-1.8	-1.7	-3.5	-2.7	-0.9		
Mean	-0.28	-0.18	-0.30	-0.34	-0.58	-0.45	-0.45		

Corrections to Apply
 0.0 thru 2.7 ft.
 -0.2 thru 15.9 ft.
 -0.4 thru 29.5 ft.
 -0.6 thru 34.9 ft.
 -0.4 thru A scale only

f 4/9/59	0.0	-0.2	+0.1	+0.2	0.0	0.0			3 3
	0.0	+0.2	+0.2	+0.2	0.0	0.0			3 16
g 4/15/59	0.0R	+0.6R	+0.4R	+0.7R	+0.8R	Reject			3 17
	+0.1	+0.4	+0.2	+0.4	+0.2	+0.4			3 27
Sum	+0.1	+0.4	+0.5	+0.8	+0.2	+0.4			
Mean	0.0	+0.13	+0.17	+0.27	+0.07	+0.13			

Corrections to Apply
 0.0 thru 10.3 ft.
 +0.2 thru A scale

Z-5d

PHASE COMPARISONS

(See Vol. 3, Page 53)

No. 62S:

No correction applied between the two scales used, A & B. ✓
Phase difference = 0

No. 106:

"A" scale used only. ✓

✓

Z-5e

SETTLEMENT SQUAT TEST

(SEE VOL. 2, PAGE 50)

Settlement and squat correction of +0.2 applied for sounding speed ✓
of launch.

✓

Z-5f

LEADLINE CALIBRATIONS

No. 23E (See Vol. 3, Page 53)

0 ft. to 30 feet No correction applied
30.1 ft. to 60 feet +0.2 correction applied

No. 41G (See Vol. 6, Page 57)

DEPTH	CORRECTION
0.0 to 4.0 ft.	0.0
4.1 to 12.0 ft.	-0.2
12.1 to 20.0 ft.	-0.4
20.1 to 36.0 ft.	-0.6
36.1 to 48.0 ft.	-0.8

sub volume stands say 23E

✓

Z-5g

TIDAL NOTE

TIDE STATION:

FRIDAY HARBOR

Lat. 48° 32.2' North
Long. 123° 00.9' West

MLLW on staff = 3.6 feet

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

Z-5h

TO BE CHARTED
~~NON-FLOATING AIDS~~

STRIKE OUT ONE

Roche Harbor, Washington

16 April 1959

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

The positions given have been checked after listing by T. E. Williams

Miller J. Thomas
LCDR, C&GS Chief of Party

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION			METHOD OF LOCATION SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED	
				LATITUDE*	LONGITUDE*								DATUM
					D. M. METERS	° ' "								D. P. METERS
	CUPOIA	Frame cupola on west end of small frame church. Visible over all of inner harbor	ACE # 510 1-6 PA-54-B	48 36	33.1'	123 08	59.9'	7-54	X			6579	
	LIGHT	Small unattended light on N end of Pearl Island	checked to PA-54-B	48 36	1819.7'	123 10	168.1'	7-54	X			6579	
					1853.3								
					926.6								
		*Scaled from Graphic Control Sheet PA-54-B.											
		*Horizon closed by sextant at light. Cuts plotted on sheet PA-54-B and position scaled.											
												1959	

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

Z-5j

APPROVAL SHEET
SUPPLEMENTAL HYDROGRAPHY
ON HYDROGRAPHIC SURVEY NO. H-8117


All field work on this (1959) portion of the sheet was done under my supervision. The boat sheet and records were examined daily. The survey is considered complete and adequate.

Disagreement with the 1954 work was practically all within the areas of dense grass. As was indicated in this report, the true bottom profile in these areas could not be adequately delineated by echo sounders alone. Considerable time was spent on headline soundings which were necessary to insure true depth determination.

A combination of rather strong currents through the working areas and inexperienced personnel, also contributed toward slow progress at the beginning.

Attention is called to the interesting bottom profile characteristic mentioned in Section T of this report. No investigation was made, but it appears to be a geological phenomenon of some nature. *See note Sect. T.*

No additional work on this survey is believed necessary.


Miller J. Tonkel
LCDR, C&GS
Commanding Ship HODGSON

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

Each Topographic and Graphic Control Sheet, and each Air Photographic Drawing should be accompanied by this form, completed so far as practicable, when forwarded to the Washington office.

REGISTRY No.

Field No. PA-54-A, B, C, D

Scale 1:5,000 and 1:10,000

State Washington General locality San Juan Islands

Specific locality San Juan Channel, Roche Harbor, Wasp Passage & Vicinity

Dates: Survey began Completed

Photography....., Supplemented by ground surveys to

Project No. CS-241 Instructions dated

Vessel } PATTON Chief of party J. C. Partington

Party } Office work by F. X. Popper

Field work by F. X. Popper Final inking by F. X. Popper

Ground elevations } in feet above { M. H. W.
Treetop elevations } or {

Contours } by { Planetable } Interval ft.
Approximate contours } Multiplex }
Form lines }

REMARKS Graphic Control sheets; some MHWL near set ups.

DESCRIPTIVE REPORT TO ACCOMPANY

TOPOGRAPHIC SHEETS PA-54-A, PA-54-B, PA-54-C, PA-54-D

also H-8114 8115
VICINITY OF

SAN JUAN CHANNEL, ROCHE HARBOR, AND WASP PASSAGE

USC&GSS PATTON, J. C. PARTINGTON, CHIEF OF PARTY

1954

AUTHORITY:

This survey was made in accordance with supplemental instructions dated 11 March 1953, 8 May 1953, and 20 January 1954, Project CS-241.

PURPOSE:

The object of this survey is to locate signals for the control of hydrography in areas where there are no photographs or where the hydrographic survey is made on a larger scale than the photographs.

CONTROL:

Second order control triangulation extends throughout this area. Two stations, GEORGE and PARKS BAY were established to furnish control for Parks Bay. The position of SHIRT TAIL REEF LIGHTHOUSE was determined by triangulation.

SURVEY METHODS:

Signals were located by standard planetable graphic control methods. Where necessary, traverses were run and when necessary, they were adjusted. All traverses closed within allowable limits.

SHORELINE:

Where practicable, a short section of high water line was rodded in at each set-up. Data for rocks awash etc., was reduced with the observed tide from either Friday Harbor or Roche Harbor gages.

COMPARISON WITH PRIOR SURVEYS:

The shoreline on the two five thousand scale sheets corresponds very closely with the shoreline as determined from the ten thousand scale photo manuscript expanded to a five thousand scale.

Sections of shoreline that were rodded in on PA-54-D corresponded fairly well with the shoreline as determined from T-5590.

On Sheet PA-54-C, such shoreline as was rodded in corresponded closely with T-5591. Rodded in shoreline corresponded fairly well with T-2229, the original topographic survey made in 1895.

A number of marked topographic stations were established in 1950 and located by air photographic plot. There was a considerable difference between the air photographic plot positions and the positions as determined by plane table. Detailed discussions were made on the recovery cards.

GEOGRAPHIC NAMES:

No new names recommended.

SIGNAL NAMES:

The names "ACE", "BAH", and "ICE" occur twice on PA-54-C. This occurred because the topographic sheet covers parts of two hydrographic sheets and while the signals were located by the topographer, they were named by the hydrographer.

DISPOSITION OF RECORDS:

The original copy of this report and recovery cards on marked topographic stations are being forwarded to the Washington Office. The topographic sheets, a copy of this report, and (duplicate copies of the marked topographic stations) are being furnished the Seattle Processing Office.

Respectfully submitted,

Francis X. Popper

Francis X. Popper
LCDR USC&GS
Ship PATTON

Approved and Forwarded:

J. C. Partington

J. C. Partington
CDR USC&GS
Cmdg., Ship PATTON

PA-54-C to be destroyed as all useful information thereon has been transferred to H-8115 (1954).

WE
12/20/57

Information from PA-54-B & PA-54-C transferred to H-8116 (1954)

WE
1/20/58

Information from PA-54-A transferred to 8117 (1954-54)

WE
1/22/60

GEOGRAPHIC NAMES ON H-8117

BARREN ISLAND

BATTLESHIP ISLAND

BAZALGETTE POINT
BELL POINT
DAVISON HEAD

DELACOMBE POINT

GARRISON BAY

GUSS ISLAND

HANBURY POINT

HENRY ISLAND

HORSESHOE BAY

MCCRACKEN POINT

MITCHELL BAY

MOSQUITO PASS
NELSON BAY
PEARL ISLAND

POLE ISLAND

POSEY ISLAND

ROCHE HARBOR

SAN JUAN ISLAND
SPEDEN CHANNEL
WESTCOTT BAY

WHITE POINT

YACHT ~~HARBOR~~ HAVEN (peninsula)

GEOGRAPHIC NAMES
Survey No. H-8117

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Washington</u>			(for title)						BGN	1	
<u>San Juan Islands</u>		<i>✓ 9/13/12/100</i>	(" ")						"	2	
<u>San Juan Island</u>										3	
<u>Mitchell Bay</u>										4	
<u>Hanbury Point</u>										5	
<u>Mosquito Pass</u>										6	
<u>Henry Island</u>										7	
<u>Yacht Haven</u>			(peninsula between Mosquito Pass and Garrison Bay).							8	
<u>Delacombe Point</u>										9	
<u>Horseshoe Bay</u>										10	
<u>White Point</u>										11	
<u>Garrison Bay</u>										12	
<u>Guss Island</u>										13	
<u>Bell Point</u>										14	
<u>Westcott Bay</u>										15	
<u>Pole Island</u>										16	
<u>Nelson Bay</u>										17	
<u>Bazalgette Point</u>										18	
<u>Roche Harbor</u>			(tide station)							19	
<u>Pearl Island</u>										20	
<u>Posey Island</u>										21	
<u>McCracken Point</u>										22	
<u>Battleship Island</u>									BGN	23	
<u>Barren Island</u>										24	
<u>Davison Head</u>			(not Davidson Head)							25	
<u>Spieden Channel</u>										26	
			Names approved 10-30-56.								27
			L. Heck								M 234

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8117

FIELD NO. PA-05154

Washington, San Juan Island, Roche Harbor and Mosquito Pass

SURVEYED: July-Sept. 1954 & April 1959

SCALE 1:5,000

PROJECT NO. CS-241

SOUNDINGS: 808 Depth Recorder
Leadline

CONTROL: Sextant fixes on
shore signals

Chief of Party ----- J. C. Partington and M. J. Tonkel
Surveyed by ----- F.X. Popper, R.F. Lanier, R.E. Williams
R.E. Alderman and R.M. Sundean
Protracted by ----- L. W. Eason II and J. E. Gearhart
Soundings plotted by ----- L. W. Eason II and J. E. Gearhart
Verified and inked by ----- J. E. Gearhart
Reviewed by ----- I. M. Zeskind
Inspected by ----- R. H. Carstens

DATE: 1/22/60

1. Shoreline and Control

The shoreline originates with reviewed air-photographic survey T-5590N (1949-54), supplemented by shoreline shown in red from planetable surveys PA-54A and PA-54B. All useful information on these plane table surveys has been transferred to the present survey and surveys H-8116 (1954) and H-8086 (1953-55). Plane table surveys PA-54A and PA-54B have been marked for destruction.

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated. The 3-ft., 24-ft. and 36-ft. curves have been drawn to more clearly define the bottom configuration.

The bottom is very irregular. Submarine features such as pinnacles, deeps, reefs, ledges and shoals contribute to the bottom irregularity. The bottom generally drops abruptly from shore to depths of as much as 48 ft. in Mosquito Pass. Elsewhere in several bays the bottom slopes gradually from shore to depths ranging from 7-18 ft.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-8116 (1954) on the north and H-8086 (1953-55) on the south.

5. Comparison with Prior Surveys

H-2215 (1894), 1-10,000

H-2216 (1894), 1-10,000

The prior surveys together cover the area of the present survey. A comparison between the prior and present surveys reveals, in general, only minor differences in depths of 1-3 ft. Piers have been constructed and remodeled and land has been reclaimed in the vicinity of lat. $48^{\circ}36.5'$, long. $123^{\circ}09.3'$. The controlling depth thru the passage on the east side of Pearl Island was formerly $5\frac{1}{2}$ ft. and is now 8 ft. Depths on the flats north of Pearl Island have deepened 1-2 ft. Attention is specifically directed to the following differences between the prior and present surveys:

1. The 3-fm sounding charted in lat. $48^{\circ}37.08'$, long. $123^{\circ}10.25'$, from H-2215 (1894) falls in present depths of 29-32 ft. and should be deleted from the chart. The area is adequately developed on the present survey to discredit the existence of the 3-fm. sounding.
2. The $3\frac{1}{2}$ -fm sounding charted in lat. $48^{\circ}34.82'$, long. $123^{\circ}10.35'$, from H-2216 (1894), falls in present depths of 29-32 ft. The sounding is plotted out of position on the prior survey and should actually fall about 25 meters further inshore where comparable depths are found on the present survey.
3. The piling charted in lat. $48^{\circ}36.87'$, long. $123^{\circ}09.32'$, are the remains of a pier shown on H-2216 (1894). A search of 10 minutes in this area by the field party at a time when the bottom was clearly visible, failed to reveal the existence of these piles. The piles should be deleted from the chart.

4. The rock awash charted in lat. $48^{\circ}35.33'$, long. $123^{\circ}09.89'$, from an advance print of survey T-5590N (1949-54) should be deleted from the chart. The feature is not shown on air-photographic survey T-5590N after review and a note on the boat sheet of the present survey states the feature is "not here".

Two soundings have been carried forward from H-2215 (1894) to the present survey. With the addition of these soundings, the present survey is adequate to supersede the prior surveys within the common area.

6. Comparison with Chart 6379 (Latest print date 11/18/57)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which need no further consideration, supplemented by a few soundings from the present survey prior to verification and review. The following discrepancies between the charted data and the present survey were noted:

1. The 1-fm. sounding charted in lat. $48^{\circ}34.93'$, long. $123^{\circ}10.36'$, originates with British Admiralty Chart 602 (see pencil note on H-2216, 1894). The charted sounding is considered discredited by hydrography on the present survey where it falls on a shoal whose least depth is 12 ft. The 1-fm. sounding should be deleted from the chart.
2. The $\frac{1}{2}$ -fm. sounding charted in lat. $48^{\circ}37.27'$, long. $123^{\circ}09.16'$, from the present survey prior to verification and review should be deleted from the chart. The charted sounding is considered to be a grass trace on a fathogram and not the true bottom. The 3-ft. sounding has been erased from the smooth sheet.
3. The sunken rock charted in lat. $48^{\circ}35.46'$, long. $123^{\circ}10.36'$, originates with chart letter 353, 1936, which states that a vessel drawing 6 ft. struck a rock 200 yds. west of white Point. A least depth of 6 ft. was found on the present survey in a rocky bottom about 20 meters west north-west of the charted sunken rock. The rock symbol should be deleted from the chart and the 6-ft. sounding should be charted.

4. The 1-fm. sounding charted in 2-3 fm. depths in lat. $48^{\circ}36.96'$, long, $123^{\circ}10.18'$, from the boat sheet of the present survey was revised to 7 ft. during verification and review and replotted inshore in comparable depths. The unverified sounding should be deleted from the chart.
5. The rock awash which is located on the present survey in lat. $48^{\circ}35.67'$, long. $123^{\circ}09.65'$, in depths of 3 ft. about 55 meters east of a ledge should be charted.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

The light on the west side of Pearl Island is the only aid to navigation falling within the area of the present survey. Its survey position is in adequate agreement with its charted position and adequately marks the feature intended.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was accurately done, except as follows:
 1. A plus instead of a minus correction was erroneously applied to hand lead soundings during the 1954 work. Only those lead line soundings applied to the smooth sheet were changed where, by applying the proper lead line correction, the sounding changed 1 ft. or more in depth.
 2. In many areas the true bottom traces on the fathograms were obscured by grass traces and rescanning of fathograms was required. In these areas supplemental lead line soundings, if available, were plotted whenever they were in agreement with the surrounding hydrography. In many areas, portions of the 1954 work were rejected in the Washington Office because of lack of reliable soundings and additional fathometer and hand lead soundings were obtained in 1959.

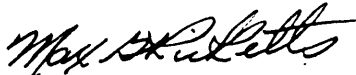
8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

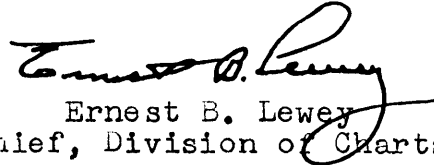
9. Additional Field Work Recommended

This survey is considered basic and no additional field work is recommended.

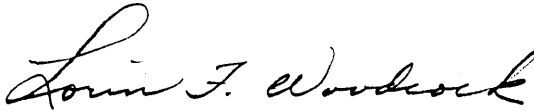
Examined and Approved:



Max G. Ricketts
Chief, Nautical Chart Branch



Ernest B. Lewey
Chief, Division of Charts



Lorin F. Woodcock
Chief, Hydrography Branch



Samuel B. Grenell
Chief, Division of Coastal Surveys

RMC

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens:

4 December 1956

Plane of reference approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 8117

Locality San Juan Islands, Washington

Chief of Party: J. C. Partington in 1954

Plane of reference is mean lower low water, reading
3.8 ft. on tide staff at Roche Harbor
8.4 ft. below B.M. 1 (1954)

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

Condition of records satisfactory except as noted below:


Signature

Chief, Tides Branch

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

24, June 1959

Division of Charts: R. H. Carstens:

Plane of reference approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 8117

Locality San Juan Island, Washington

Chief of Party: M. J. Tonkel in 1959
Plane of reference is mean lower low water, reading
3.6ft. on tide staff ~~at~~ (1934) at Friday Harbor
18.7ft. below B. M. 2 (1932)

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

Condition of records satisfactory except as noted below:

~~FOR THE CHIEF OF THE TIDES BRANCH~~

William Shafro

Chief Tides Branch

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ..8117..

Records accompanying survey:

Boat sheets ..1...; sounding vols. .10...; wire drag vols.; bomb vols.; graphic recorder rolls 11-Envelopes special reports, etc. 1-Descriptive report and 1-Smooth sheet.
.....

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

Number of positions on sheet	.....	3085
Number of positions checked	.....	141
Number of positions revised	.....	11
Number of soundings revised (refers to depth only)	.....	*
Number of soundings erroneously spaced	.....	0
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	..... 80
Junctions	Time	..... 2
Verification of soundings from graphic record	Time	..... 80

Verification by *James E. Gearhart* Total time 4.5! Date 6-17-58

Reviewed by *J. Jeskeid* Time Date
* see 1954 WK.

* During verification many sdg. were deleted or revised due to the original scanning of grass and numerous others were corrected due to the application of a revised hand lead correction.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8117... (Wk. of 1959.)

Records accompanying survey:

Boat sheets .1...; sounding vols. .6...; wire drag vols.; bomb vols.; graphic recorder rolls .4-Envelopes special reports, etc. .1-Descriptive report.....

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

Table with 2 columns: Description and Value. Rows include: Number of positions on sheet (1596), Number of positions checked, Number of positions revised, Number of soundings revised (refers to depth only) (x*), Number of soundings erroneously spaced, Number of signals erroneously plotted or transferred, Topographic details (Time 8), Junctions (Time 12), Verification of soundings from graphic record (Time 40).

Verification by *J. E. ...* Total time 490.* Date 9-23-59

Reviewed by *Lu Zeskind* Time 93 Date 1-22-60

* Includes both smooth plotting and regular verification of the 1959 work.

** Many fathometer soundings were deleted or revised due to the field scanning of grass.

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8117

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
3/28/57	6386	<i>Jam</i>	Before After Verification and Review <i>Made a few critical changes. 2711A</i> <i>Examined only.</i>
4-29-57	6379	<i>F.M.A.</i>	Before After Verification and Review <i>Applied critical data only</i>
8-7-57	6300	<i>F.M.A. Bogus</i>	Before After Verification and Review <i>Examined</i> <i>no critical changes from chart 6380</i>
			Before After Verification and Review
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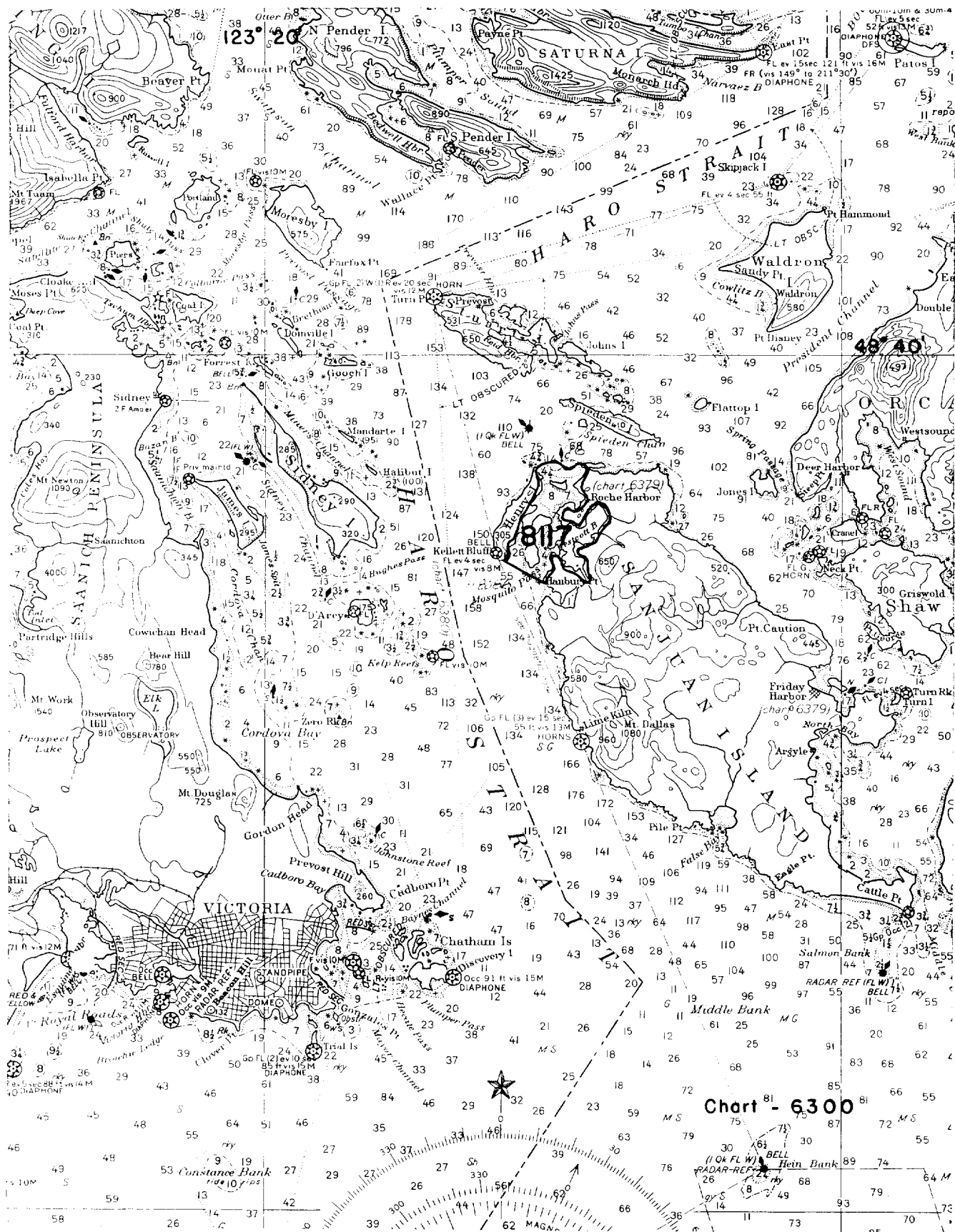
See last of this Jam.

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.

Topo:
T-5590 N
PA-A-54
PA-B-54

Hydro
H-8116-NORTH



NAUTICAL CHARTS BRANCH

SURVEY NO. 8117 (Wk. of 1959)

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6/29/59	6379	M. Rogers	Examined Before After Verification and Review <i>critical revisions</i> <i>only applied (from boat sheet)</i>
6/29/59	6380	M. Rogers	Examined <i>Examined thru chart 6379</i> Before After Verification and Review,
8-26-59	6300	M. Rogers	Before After <i>Examined thru B.P. 58,104</i> Verification and Review <i>No critical corr.</i>
10-17-60	6379	M. Rogers	Before After Verification and Review <i>Fully applied</i> <small>MM</small>
12-14-60	6380	M. Rogers	<i>Fully applied thru chart 6379</i> Before After Verification and Review
12-15-60	6300	M. Rogers	<i>Fully applied</i> Before After Verification and Review <i>thru chart 6380</i>
5-29-79	18433	Stephen M. Hill	<i>Fully Applied</i> Before After Verification and Review <i>5-30-79-RCG</i>
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

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.