8324

Diag. Cht. No. 6380-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. LJ-1656 Office No. H-8324

LOCALITY

State Washington

General locality San Juan Islands

Locality Orcas Island - East Sound

19 56-57

CHIEF OF PARTY

G. C. Mast & W. C. Russell

LIBRARY & ARCHIVES

DATE November 7, 1960

USCOMM-DC 37022-P66

8324

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. H-8324

Field No. LJ-1656

State WASHINGTON

General locality SAN JUAN ISLANDS

Locality ~~EAST SOUND, ORCAS ISLAND~~ ORCAS ISLAND - EAST SOUND

Scale 1 : 10,000 Date of survey 25 October 1956 to Nov. 14/56 2 Oct. through 10 Oct 1957

Instructions dated 24 OCTOBER 1955 & 1 OCTOBER 1956

Vessel SHIP LESTER JONES, LAUNCH NO. 176 (1956)
SHIP PATTON, LAUNCH NO. 87 (1957)

Chief of party G. C. MAST (1956) & W. C. RUSSELL (1957)

Surveyed by J. J. DERMODY, W. E. RANDALL & T. E. SIMKIN

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

Fathograms scaled by SHIP PERSONNEL

Fathograms checked by SHIP PERSONNEL

Protracted by SHIP PERSONNEL & W. M. MARTIN

Soundings penciled by W. M. MARTIN

Soundings in fathoms ~~feet~~ at ~~MLW~~/ MLLW and are true depths

REMARKS: This survey was started by the Ship LESTER JONES in 1956 and completed by the Ship PATTON in 1957.

U. S. GOVERNMENT PRINTING OFFICE 693019

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-8324 (FIELD NO. LJ-1656)
EAST SOUND, ORCAS ISLAND
SCALE 1:10,000 Ship LESTER JONES G. C. Mast, Comdg.
SURVEYED BY: J. J. DERMODY

A. PROJECT:

This survey is part of Project 12410 and was executed under supplemental instructions No. 22/MEK S-2-LJ dated 24 October 1955, and Director's letter 22/MEK S-1-LJ dated 9 August 1956. ✓

B: SURVEY LIMITS & DATES:

General Locality - East Sound, Orcas Island from Buck Bay north to Fishing & Ship Bays. ✓

Field work began on 25 October and stopped before the survey was complete on 14 November 1956.

This survey is joined on the south by H-7080, 1947.

Progress was impeded by lack of power and poor design of Launch 176.

C. VESSEL & EQUIPMENT:

All hydrography was done by Launch 176 using 808 fathometer No. 102-S with reed tachometer calibrated for a speed of sound at 800 fathoms per second. ✓

D. TIDE & CURRENT STATIONS:

A portable tide gage was maintained during the time of this survey at Rosario pier, Cascade Bay, Lat. 48°-38.81' N, Long. 122°-52.15' W, and was used without time or height corrections to reduce all soundings. ✓

No current stations were observed within the limits of this survey.

E. SMOOTH SHEET:

The smooth sheet is to be plotted by the Seattle Processing Office - their addenda report will be attached to this report. ✓

F. CONTROL STATIONS:

The following triangulation stations were used as hydro signals: ✓

BLIND, 1889-1940	LIN
CAIRN 2, 1939	AIR
CASCADE, 1889-1940	CAS
HOUSE, 1889,1940	HOUSE
JUNIPER, 1889-1940	JUNI
KILN, 1889-1940	KILN
LARD, 1940	LARD
MOND, 1940	MOND
OLGA CABLE CROSSING SIGN, 1940	SIGN
PRECIPICE, 1889-1940	PREC
RANGE, 1889-1940	RAN
SHAG RK. BN., 1939	SHAG
THISTLE, 1889-1940	THIS
TONGUE, 1889-1940	TONG
TOUGH, 1889-1940	TOUGH
TWIN RK., 1889-1940	Offset to BEK
TWIST, 1889-1940	TWIST

Other stations were located by standard graphic control methods on sheets LJ-F-56 and LJ-G-56. ✓

Recovery of triangulation station CHURCH, 1889-1940 was made; however, there is no published G.P. for this station. Therefore, a graphic location of this mark was made on sheet LJ-F-56 (signal DON), and a Description of Recoverable Topographic Station submitted on Form 524. Description in Geodesy Book 743 page 37

G. SHORELINE & TOPOGRAPHY:

Shoreline for this survey originates with old Topo. Survey Sheets T-1953 (1889) and T-1954 (1889). A correction to the N.A. 1927 datum on T-1954 (1889) moves the parrellels 6.8 mm southward. This correction was applied by the verifier according to 1940 observations. ✓

High water line was spot checked on Graphic Control Sheets LJ-F-56 and LJ-G-56. ✓

The new waterfront construction at various places was also delineated on Graphic Control Sheets. ✓

The 9-lens photos of the area will aid in delineation of various alongshore features. ✓

H. SOUNDINGS:

Soundings on Launch 176 were taken by 808 fathometer No. 102-S, with initial set at zero. ✓

See Special Fathometer Report submitted by Ship LESTER JONES in 1956.

Attached to this report are abstracts of velocity corrections and of fathometer corrections.

Bar checks were taken twice daily, weather and sea permitting.

I. CONTROL OF HYDROGRAPHY:

All hydrography was controlled by sextant angles on shore objects using micrometer type sextants. ✓

J. ADEQUACY OF SURVEY:

This survey is incomplete. It is to be completed by the ship PATTON during the 1957 season. All applicable data will be turned over to that vessel. ✓ This survey is now complete.

K. CROSSLINES:

Approximately 8% of the lines run are crosslines. Crossed soundings are in adequate agreement on the boat sheet. ✓

L. COMPARISON WITH PRIOR SURVEYS:

Soundings from H-2114 (1891 - 1:20,000) were transferred to the boat sheet and in general, agree adequately with the boat sheet soundings. ✓

M. COMPARISON WITH CHART:

Soundings from chart 6380 in general agree favorably with soundings from the boat sheet. ✓

N. DANGERS & SHOALS:

Most dangers consist of shoals extending off points of land and are adequately delineated by the depth curves. ✓

5 fms. pinnacle	48-40.2 122-53.0	Not dangerous to type of ship normal to area. pos 41-42 d

O. COAST PILOT INFORMATION:

See special Coast Pilot Report submitted by Ship LESTER JONES in 1956. ✓

P. AIDS TO NAVIGATION:

There are no floating aids to navigation within the survey limits. ✓

There is a privately maintained day beacon on the rock south of the private pier called signal "HEM" KEM. It is constructed of 3/4" brass pipe in a "T" shape, cemented to the top of the rock, and painted red.

The cable crossing termini at Olga are shown on LJ-G-56.

There is a privately maintained red light on the end of the breakwater in Cascade Bay. (Signal POL)

There is a privately maintained day beacon on Twin RK. (⊙ BEK).

Q. LANDMARKS FOR CHARTS:

The steeple of the Community Church in Eastsound township is recommended for charting. It is signal "CHU" on LJ-F-56. Appears that the building charted on 6380 in lat. 48°41.7', long 122° 54.3 is the church. ✓

R. GEOGRAPHIC NAMES:

See special geographic names report submitted by this vessel in 1956. ✓

The beach along the north side of Ship Bay is called "Crescent Beach". not charted, space limited

The small cove on the west side of Fishing Bay is called "Judd Bay".

The township and post office of Rosario no longer exist. The area is now a private estate. Recommend to DELETE this name from charts and substitute the following:

"Rosario Pt." is the point to the west side of Cascade Bay - CHART this name. ✓

The township and post office of "Dolphin" no longer exist. Recommend to DELETE this name from charts, and substitute the following; ✓

"Dolphin Bay" is the small cove on the shores of which the old town of Dolphin used to stand. - CHART this name. Charted on 184SC 9th Ed 1969

S. SILTED AREAS:

All flat bottom on this survey is silted. See fathograms for depth of deposit. ✓

Z. TABULATION OF APPLICABLE DATA: ✓

1956 Coast Pilot Report	forwarded to Wash. Office
1956 Geographic Names Report	" " " "
1956 Fathometer Report	" " " "
1956 Tide Data	" " " "
1956 Landmarks for Charts Data	" " " "
Graphic Control Sheets LJ-F & G-56 mounted on 1 sheet	" to Ship PATTON for completion during 1957 season
Boat Sheet	" " " " "
4 sounding volumes	forwarded to Seattle Proc. Office
Tide Curves and Reducers	

Respectfully submitted,

John J. Dermody

John J. Dermody,
Lieutenant (j.g.), C&GS

APPROVAL SHEET ✓

This survey was done under the supervision of the Chief of Party. Applicable records and the boat sheet have been inspected and deemed complete and adequate to supersede all prior surveys.

G. C. Mast

G. C. MAST,
COMMANDER, C&GS
CHIEF OF PARTY

TIDE NOTE ✓

The portable tide gage maintained at Rosario operated very poorly due to cold weather.

Those hourly heights which could be scaled from the marigram were used without time or height correction for the reduction of soundings.

Hourly heights from the Friday Harbor gage were furnished for those times the Rosario gage was inoperative.

There is no time correction for Friday Harbor, but there is a 1.1 ratio of range. (Cf. Asst. Director's letter which is attached to the original copy of this report.)

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON 25

AND REFER TO NO.
36-537-982 1j

20 December 1956

To: The Commanding Officer
U.S.C.&G.S. Ship LESTER JONES
705 Federal Office Building
Seattle 4, Washington

Subject: Tidal data, Rosario, Washington

This is in reply to your letter of 15 November 1956. Tidal data for Rosario, Washington, are given below.

Mean lower low water on staff	4.5 ft.
Time difference, referred to Friday Harbor	0.0
Height ratio " " " "	1.1

Hourly heights from the Friday Harbor record, for the periods requested are enclosed. These heights are referred to mean lower low water and the time is Pacific Standard (120° W).

Robert M. Knox
Assistant Director

Enclosure

Form 362
Ed. May, 1929
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TIDES: HOURLY HEIGHTS

Station: Rosario Year: 1956

Observer: _____ Lat. _____ Long. _____

Time Meridian: 120 Height datum is MLLW which is 4.5 ft. ~~below~~ on staff B. M.

U. S. GOVERNMENT PRINTING OFFICE 11—792

Month and Day	mo. Oct	d. 25	Oct	d. 27	Nov. 8	d.	Nov 9	d.	Nov 10	d.	Nov 11	d.	Nov. 12	d.	Horizontal Sum
Day of Series															
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8	.		9.3	4.8	.		.		.		10.1	5.6	9.5	5.0	.
9	.		10.2	6.2	.		.	(8.0)	.		11.0	6.5	10.4	5.9	.
10	.		11.7	7.3	.		(12.5)	(1000)	.		11.6	7.1	11.3	6.8	.
11	.		12.5	8.1	.		.		.		12.0	7.5	12.0	7.5	.
Noon	.		12.8	8.4	.		12.2	7.7	.		12.0	7.5	12.2	7.7	.
13	.		12.6	8.2	10.9 (10.75)	6.4 (1331)	11.6	7.1	.		11.8	7.3	12.2	7.7	.
14	.		11.9	7.4	10.5	6.0	10.8	6.3	.		11.1	6.6	11.8	7.3	.
15	.		10.8	6.3	10.0	5.5	10.2	5.7	.		10.2	5.7	10.8	6.3	.
16	.		10.0	5.5	10.0 (9.95)	5.5 (1115)	9.8	5.3	9.7	5.2	9.2	4.7	9.7	5.2	.
17	10.8	6.3	9.4	4.9	9.9	5.4	9.6	5.1	9.1	4.6	8.6	4.1	8.7	4.2	.
18	10.8	6.3	9.2	4.7	9.8	5.3	9.4	4.9	8.8	4.3	8.2	3.7	7.9	3.4	.
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Sum for _____ = _____ Divisor=(28d) 672; (29d) 696; (30d) 720; (31d) 744. Mean for month=

Tabulated by _____ Date _____ Summed by _____ Date _____

Form 362
Ed. May, 1929
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TIDES: HOURLY HEIGHTS

Station: Rosario Year:

Observer: Lat. Long.

Time Meridian: Height datum is MLLW which is 4.5 ft. ~~below B.M.~~ on staff

U. S. GOVERNMENT PRINTING OFFICE 11—792

Month and Day	mo.	d.		d.		d.		d.		d.		d.		d.		Horizontal Sum
Day of Series																
Hour	Feet			Feet		Feet		Feet		Feet		Feet		Feet		Feet
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7	8.6	4.1		8.7	4.2	.		.		.		.		.		.
8	9.0	4.5		8.9	4.4	.		.		.		.		.		.
9	9.8	5.3		9.4	4.9	.		.		.		.		.		.
10	10.5	6.0		.		.		.		.		.		.		.
11	11.1	6.6		.		.		.		.		.		.		.
Noon	11.5	7.0		.		.		.		.		.		.		.
13	11.6	7.1		.		.		.		.		.		.		.
14	11.5	7.0		.		.		.		.		.		.		.
15	10.8	6.3		.		.		.		.		.		.		.
16	9.6	5.1		.		.		.		.		.		.		.
17	8.4	3.9		.		.		.		.		.		.		.
18	7.2	2.7		.		.		.		.		.		.		.
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Sum for = Divisor=(28d) 672; (29d) 696; (30d) 720; (31d) 744. Mean for month=

Tabulated by Date Summed by Date

Form 362
Ed. May, 1929
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TIDES: HOURLY HEIGHTS

Station: Friday Harbor, Wash. Year: 1956

Observer: _____ Lat. _____ Long. _____

Time Meridian: 120°W Height datum is MLLW which is _____ ft. below B. M.

16—47802-1 U. S. GOVERNMENT PRINTING OFFICE

Month and Day / Day of Series	mo. Oct. d. 25	d.	d.	Nov. d. 8	d. 9	d. 10	d.	d.	Nov. d. 14	Horizontal Sum
Hour	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet
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6	3.5 3.9	.	4.3 4.7	3.8 4.2	3.4 3.7	.	.	4.2 4.6	.	.
7	5.2 5.7	.	5.7 6.3	5.1 5.6	4.5 5.0	.	.	4.0 4.4	.	.
8	6.7 7.4	.	6.8 7.5	6.3 6.9	5.7 6.3	.	.	4.2 4.6	.	.
9	7.7 8.5	.	7.7 8.5	7.3 8.0	6.7 7.4	.	.	4.7 5.2	.	.
10	8.3 9.1	.	8.0 8.8	7.9 8.7	7.5 8.2	.	.	5.4 5.9	.	.
11	8.2 9.0	.	7.8 8.6	8.0 8.8	7.8 8.6	.	.	6.1 6.7	.	.
Noon	7.9 8.7	.	7.3 8.0	7.7 8.5	7.7 8.5	.	.	6.6 7.3	.	.
13	7.3 8.0	.	6.6 7.3	7.0 7.7	7.3 8.0	.	.	6.9 7.6	.	.
14	6.8 7.5	.	6.1 6.7	6.3 6.9	6.5 7.2	.	.	6.7 7.4	.	.
15	6.3 6.9	.	5.6 6.2	5.7 6.3	5.7 6.3	.	.	6.0 6.6	.	.
16	6.1 6.7	.	5.4 5.9	5.2 5.7	5.0 5.5	.	.	4.9 5.4	.	.
17	6.1 6.7	.	5.2 5.7	4.9 5.4	4.4 4.8	.	.	3.5 3.8	.	.
18	6.2 6.8	.	5.2 5.7	4.8 5.3	4.0 4.4	.	.	2.2 2.4	.	.
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Sum	.	.	.	.	.	.	.	.	.	.

Friday Hbr. to Rosario - Time Diff. 0.0
Ht. Ratio 1.1
Cf. Asst. Dir. Ltr. 36-537-982 1j dated 20 Dec. 1956

JD
PAS

Sum for _____ = Divisor = (28d) 672; (29d) 696; (30d) 720; (31d) 744. Mean for month = _____

Tabulated by _____ Date _____ Summed by _____ Date _____

Form 362
Ed. May, 1929
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TIDES: HOURLY HEIGHTS

Station: _____ Year: _____

Observer: _____ Lat. _____ Long. _____

Time Meridian: _____ Height datum is _____ which is _____ ft. below B. M. _____

16—47809-1 U. S. GOVERNMENT PRINTING OFFICE

Month and Day	*mo.* *d.*		*d.*		*d.*		*d.*		*d.*		*d.*		*d.*		Horizontal Sum
Day of Series															
Hour	*Feet*		*Feet*		*Feet*		*Feet*		*Feet*		*Feet*		*Feet*		*Feet*
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Sum	.		.		.		.		.		.		.		.

Sum for _____ = Divisor = (28d) 672; (29d) 696; (30d) 720; (31d) 744. Mean for month =

Tabulated by _____ Date _____ Summed by _____ Date _____

STATISTICS FOR HYDROGRAPHIC SURVEY ✓
H-8324 (LJ-1656) 1956 WORK ONLY
SHIP LESTER JONES PROJECT 12410

DATE	VOL.	DAY LTR.	POS.	STAT.MILES	L.L. SNDGS.
LAUNCH 176					
25 Oct.	1	a	217	30.2	3
27 Oct.	1 & 2	b	225	40.7	1
8 Nov.	2	c	36	6.4	- -
9 Nov.	2	d	72	10.9	1
10 Nov.	3	e	79	11.2	2
11 Nov.	3	f	125	15.6	2
12 Nov.	3	g	86	15.2	- -
13 Nov.	4	h	198	28.8	2
14 Nov.	4	j	39	3.7	- -
TOTALS			1,077	162.7	11

USC&GSS LESTER JONES
1956 VELOCITY CORRECTION ABSTRACT ✓
FROM
SERIAL TEMPERATURES

Applicable Depth	April	May	June	July	Aug.	Sept.	Oct.	Nov.
	Corrections in Fathoms							
7	+ 0.02	+0.05	+0.05	+0.06	+0.09	+0.07	+0.06	+0.05
12	+0.04	+0.10	+0.10	+0.12	+0.16	+0.14	+0.12	+0.09
17	+0.05	+0.15	+0.15	+0.18	+0.23	+0.21	+0.17	+0.14
22	+0.07	+0.19	+0.20	+0.25	+0.30	+0.28	+0.23	+0.18
27	+0.09	+0.24	+0.25		+0.36	+0.34	+0.29	
32	+0.11	+0.29	+0.30		+0.43	+0.41	+0.35	
37	+0.13	+0.34	+0.35		+0.49	+0.47	+0.40	
42	+0.14	+0.38	+0.40		+0.56	+0.54	+0.46	
47	+0.16	+0.43	+0.45		+0.62	+0.60	+0.51	
52	+0.18	+0.47	+0.50		+0.68	+0.66	+0.56	
57		+0.52	+0.55		+0.75	+0.73	+0.61	
62		+0.56				+0.79	+0.66	
67		+0.61						

NOTE: The above values are velocity corrections based solely on monthly serials. They were combined with Bar Check and Draft data to obtain the final fathometer corrections.

ALPHABETICAL LIST OF SIGNALS - LJ-1656 ✓

NAME	SOURCE
ABE	LJ-F-56
ACE	LJ-F-56
AIR	CAIRN 2, 1939
AKE	LJ-F-56
ALL	LJ-G-56
AZO	LJ-F-56
BAD	LJ-F-56
BEK	LJ-F-56
BEL	LJ-F-56
BIT	LJ-G-56
BON	LJ-F-56
BOW	LJ-F-56
CABL	LJ-G-56
CAP	LJ-F-56
CAS	CASCADE,1889-1940
CHU	LJ-F-56
CON	LJ-G-56 - Replaced by HYDRO signal RAP
COW	LJ-F-56
DEN	LJ-G-56
DID	LJ-F-56
DOL	LJ-F-56
DON	LJ-F-56
DUG	LJ-F-56
EAR	LJ-F-56
EGO	LJ-F-56
ELM	LJ-F-56
ERJ	LJ-F-56
EVE	LJ-G-56
FIB	LJ-G-56
FIX	LJ-F-56
FLY	LJ-F-56
FOP	LJ-F-56
FRO	LJ-F-56
GAP	LJ-G-56
GAS	LJ-F-56
GEO	LJ-F-56
GUM	LJ-F-56
HAM	LJ-F-56
HAW	LJ-F-56
HAY	LJ-G-56
HEX	LJ-F-56
HIN	LJ-G-56 (Buck Bay)
HOD	LJ-F-56
HOUSE	HOUSE,1889-1940
IDA	LJ-F-56
IMP	LJ-G-56
IPI	LJ-F-56
IVY	LJ-F-56
JAP	LJ-F-56
JEB	LJ-F-56
JIT	LJ-G-56
JOE	LJ-F-56

NAME	SOURCE
JUNI	JUNIPER,1889-1940
KAD	LJ-G-56
KEM	LJ-F-56
KID	LJ-F-56
KILN	KILN,1889-1940
KOA	LJ-F-56
LARD	LARD, 1940
LEA	LJ-F-56
LIE	LJ-G-56
LIN	BLIND,1889-1940
LIP	LJ-F-56
LOG	LJ-F-56
MAR	LJ-F-56
MAX	LJ-F-56
MAY	LJ-F-56
MOND	MOND, 1939
MOW	LJ-G-56
MUT	LJ-F-56
NAG	LJ-F-56
NED	LJ-F-56
NEP	LJ-F-56
NOT	LJ-G-56
OAT	LJ-F-56
OBI	LJ-G-56
OFF	LJ-F-56
OIL	LJ-F-56
PAN	LJ-F-56
PAR	LJ-F-56
PAY	LJ-G-56
PIE	LJ-F-56
PLO	LJ-F-56
POL	LJ-F-56
PREC	PRECIPICE,1889-41
RAN	RANGE, 1889-40
RAT	LJ-F-56
ROY	LJ-F-56
RUE	LJ-G-56
RUG	LJ-F-56
SAM	LJ-F-56
SAP	LJ-G-56
SHAG	SHAG RK.BN., 1939
SIGN	OLGA CABLE CROSSING SIGN, 1939
SIP	LJ-F-56
SOL	LJ-F-56
SUN	LJ-F-56
TAG	LJ-F-56
TAR	LJ-F-56
TAT	LJ-F-56
THIS	THISTLE, 1889-40
TIC	LJ-G-56
TONG	TONGUE, 1889-40
TOUGH	TOUGH, 1889-40

ALPHABETICAL LIST OF SIGNALS - LJ-1656 ✓

NAME	SOURCE
TWIST	TWIST, 1889-40
UNA	LJ-F-56
UP	LJ-F-56
VIM	LJ-F-56
WAR	LJ-F-56
WAX	LJ-G-56
WIN	LJ-G-56
WIT	LJ-F-56
YEL	LJ-G-56
YES	LJ-F-56
YOU	LJ-F-56
ZAM	LJ-G-56
ZEP	LJ-F-56
ZIG	LJ-F-56

SHIP LESTER JONES

1956 FATHOMETER CORRECTIONS ✓

(Derived from Bar Check and Sextal Data - 1956)

SHIP - FATHOMS

April

+ 0.3	0	to	16
+ 0.4	16	to	45
+ 0.5	45	to	70

MAY - JUNE

+ 0.3	0	to	7
+ 0.4	7	to	18
+ 0.5	18	to	28
+ 0.6	28	to	38
+ 0.7	38	to	48
+ 0.8	48	to	58
+ 0.9	58	to	68

JULY - SEPT.

+ 0.3	0	to	5
+ 0.4	5	to	11
+ 0.5	11	to	19
+ 0.6	19	to	27
+ 0.7	27	to	35
+ 0.8	35	to	43
+ 0.9	43	to	50
+ 1.0	50	to	58
+ 1.1	58	to	66
+ 1.2	66	to	74

OCT. - NOV.

+ 0.3	0	to	7
+ 0.4	7	to	17
+ 0.5	17	to	26
+ 0.6	26	to	36
+ 0.7	36	to	46
+ 0.8	46	to	57
+ 0.9	57	to	67

LAUNCH - FATHOMS

April

+ 0.3	0	to	5
+0.2	5	to	25
+ 0.3	25	to	54
+ 0.4	54	to	75

MAY - JUNE

+ 0.2	0	to	15.3
+ 0.3	15.3	to	25.5
+ 0.4	25.5	to	35.7
+ 0.5	35.7	to	45.7
+ 0.6	45.7	to	55
+ 0.7	55	to	66
+ 0.8	66	to	76

JULY - SEPT.

+ 0.2	0	to	9.5
+ 0.3	9.5	to	18.0
+ 0.4	18.0	to	26.0
+ 0.5	26.0	to	35.0
+ 0.6	35.0	to	43.0
+ 0.7	43.0	to	51.0
+ 0.8	51.0	to	59.0
+ 0.9	59.0	to	67.0
+ 1.0	67.0	to	75.0

OCT. - NOV.

+ 0.2	0	to	6.0
+ 0.3	6.0	to	16.0
+ 0.4	16	to	26
+ 0.5	26	to	36
+0.6	36	to	46
+ 0.7	46	to	56
+ 0.8	56	to	66
+ 0.9	66	to	76

LAUNCH - FEET

April

+ 1.4	0	to	28
+ 1.6	28	to	75

MAY - JUNE

+ 0.8	0	to	14
+ 1.0	14	to	23
+ 1.2	23	to	32
+ 1.4	32	to	55

JULY - SEPT.

+ 1.0	0	to	7
+ 1.2	7	to	19
+ 1.4	19	to	31
+ 1.6	31	to	43
+ 1.8	43	to	55

OCT. - NOV.

+ 1.2	0	to	13
+ 1.4	13	to	25
+ 1.6	25	to	38
+ 1.8	38	to	Rest of A Scale

PHASE

Fathometer

Number	B "SCALE" (A-B)
75	- 0.3
102-S	- 2.5 fms.
107-S	- 1.5

ADDENDUM DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8324 (FIELD NO. LJ 1656)

EAST SOUND, ORCAS ISLAND

SCALE 1:10,000 SHIP PATTON W. C. RUSSELL, COMDG.

SURVEYED BY: W. E. RANDALL, T. E. SIMKIN

1957

A. PROJECT:

This survey is a part of Project 12410 and was executed under Supplemental Instructions No. 22/MEK, S-2-PA, dated 1 October 1956, and Director's letter No. 22/MEK, S-2-PA, dated 6 August 1957.

B. SURVEY LIMITS AND DATES:

See LESTER JONES Descriptive Report

Field Work began on 2 October 1957 and ended on 10 October 1957 upon completion of survey.

C. VESSEL AND EQUIPMENT:

All hydrography was done by Launch 87 using 808 Fathometer No. 51 calibrated for velocities of 800 fathoms per second, with the exdeption of pole soundings taken from a 16 foot tin skiff in N. E. end of Buck Bay. Launch sounding speed was approximately 7 knots and turning radius 25 meters. Bottom samples were obtained with wire sounding machine.

D. TIDE AND CURRENT STATIONS:

Tide reducers were obtained from a tide staff located at Rosario Pier (same location as 1956 gage). Staff reader supplied tidal data during periods of hydrography.

One current station was observed within the limits of this sheet (0.4 n.mile ExN of Twin Rocks - Lat. 48° 37.03', Long. 122° 51.21'), but observations were discontinued after 25 hours when maximum current failed to exceed 0.2 knots.

E. SMOOTH SHEET:

The smooth sheet will be plotted by PATTON personnel - their addendum report will be attached to these reports.

F. CONTROL STATIONS:

See LESTER JONES Report.

G. SHORELINE AND TOPOGRAPHY:

See LESTER JONES Report.

Hydrographic Signal RAP replaces Topographic Signal CON, the only unrecovered signal from the LESTER JONES 1956 work.

The pier on west side of East Sound (0.3 n. mile south of Twin Rocks) was revised between the end of the 1956 season and the completion of this survey in 1957. Hydrographic Signal DOK locates the end of the new (extended) pier. All piers within the limits of this survey were measured and located. Soundings were taken at each pier face.

Numerous dolphins in NE bight of Buck Bay (log booming ground) were not plotted on the boat sheet as this area goes dry at low water.

H. SOUNDINGS:

Soundings on Launch 87 were taken by 808 fathometer No. 51 with initial set at 0.3 fathom (draft of launch) to give zero initial correction.

Bar checks and vertical casts were abstracted and plotted. Echo corrections were obtained from the resulting mean curve through plotted points. Vertical casts were to a maximum depth of 23 fathoms and since the maximum depth sounded was 27 fathoms, this mean curve was used for final echo corrections without including temperature and salinity corrections.

I. CONTROL OF HYDROGRAPHY:

All hydrography was controlled by sextant angles on shore objects.

J. ADEQUACY OF SURVEY:

This work completes the survey started by the LESTER JONES in 1956. This survey is now adequate and complete and should supersede prior surveys. Junctions with contemporary surveys were satisfactory and no holidays exist.

K. CROSS LINES:

Approximately 10% of all sounding lines are cross-lines. Crossed soundings are in adequate agreement on the boat sheet.

L. COMPARISON WITH PRIOR SURVEYS:

Soundings from H-2114 (1891 - 1:20,000) were transferred to the boat sheet and agree adequately with the boat sheet soundings. ✓

M. COMPARISON WITH CHART:

Soundings from Chart 6380 (1:80,000) agree favorably with the boat sheet soundings. ✓

N. DANGERS AND SHOALS:

Rock - uncovers ~~3½~~ 4 ft. MLLW	48° 37.1' 122° 49.9'	Danger to small boats entering NE Buck Bay at high water. Position is correctly charted.	✓
4 - 7 fm ledge extending offshore	48° 36.8' 122° 51.0'-51.8'	Not dangerous to type of ship normal to area. Adequately delineated by charted depth curve.	✓
Rock - uncovers 4 ft. MLLW	48° 37.1' 122° 50.0'	Danger to small boats maneuvering around municipal dock at Olga. ~~Not charted~~ New charted	✓

O. COAST PILOT INFORMATION:

See Special Coast Pilot Report submitted by Ship LESTER JON ES in 1956.

P. AIDS TO NAVIGATION:

See Ship LESTER JONES'S Descriptive Report.

There is a small, privately maintained daybeacon marking the rock E of pier at Olga (See Paragraph N above). This marker is of questionable permanency and should not be charted. The rock is charted ✓

Q. LANDMARKS FOR CHARTS:

See Ship LESTER JONES' Descriptive Report for only recommended landmark. ✓

R. GEOGRAPHICAL NAMES:

See Ship LESTER JONES' Descriptive Report and Special Geographic Names Report (1956). ✓

S. SILTED AREAS:

All flat bottom on this survey is silted. See fathograms for depth of deposit. ✓

Z. TABULATION OF APPLICABLE DATA:

All material listed in this section - Ship LESTER JONES Descriptive Report. ✔

1957 Tide Data

1956-7 Fathograms

2 additional sounding volumes (1957)

1957 Tide Curves and Reducers.

Respectfully submitted,

Thomas E. Simkin

Thomas E. Simkin
ENS C&GS
Ship PATTON

Approved and Forwarded:

Francis X. Popper
LCDR C&GS
Cmdg., Ship PATTON

STATISTICS FOR HYDROGRAPHIC SURVEY ✓

H-8324(L. J. 1656) 1957 WORK ONLY

SHIP PATTON PROJECT 12410

Date	Vol.	Day Ltr.	Pos.	N. Miles	H. L. Soundings
8 Oct.	1(5)	a	114	12.6	2
9 "	1(5)	b	158	15.7	4
10 "	2 (6)	c	67	2.5	76
		Totals:	339	30.8	82

LIST OF ADDITIONAL SIGNALS - L. J. 1656

CON Hydrographic

DOK "

PROCESSING OFFICE NOTES H-8324 ✓

SMOOTH SHEET

The projection was hand ruled and checked by the Seattle Hydrographic Processing Unit. The triangulation stations were plotted and checked by personnel of the Ship PATTON. The topographic stations were transfered by them also but checked in the Processing Unit. Shoreline and hydrographic signal were the work of the Processing Unit.

ADEQUACY OF SURVEY

The survey is complete and adequate for charting. The junction with H-7080, to the south, is satisfactory and the depth curves can be drawn at the junction.

CROSSLINES

There are no discrepancies on the crossings.

COMPARISON WITH CHART

This survey has been compared with Chart 6380, 9th Edition, dated 8/8/60.

See section of Chart 6380, attached to this report, for comparison.

Respectfully submitted,

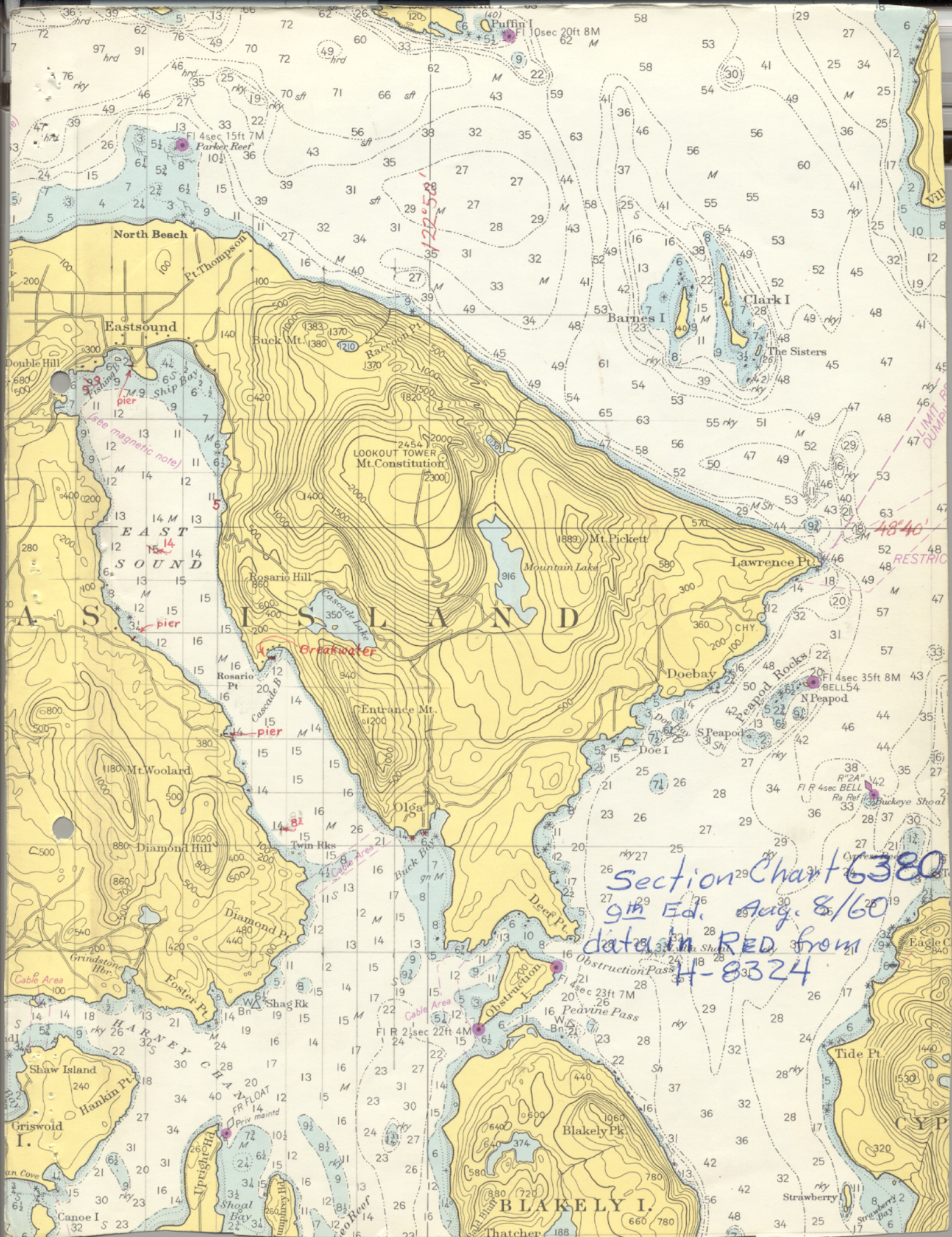
William M. Martin

WILLIAM M. MARTIN
SUPERVISORY CARTOGRAPHER

Approved and forwarded

Frank G. Johnson

FRANK G. JOHNSON
CAPTAIN, C&GS
SEATTLE DISTRICT OFFICER


Puffin I
Fl 10sec 20ft 8M
Fl 4sec 15ft 7M
Parker Reef
North Beach
Pt Thompson
Eastsound
Double Hill
Fishing pier
Ship Bay
Buck Mt.
Raccoon Pt
Barnes I
Clark I
The Sisters
LOOKOUT TOWER
Mt Constitution
2454
(see magnetic note)
EAST SOUND
Rosario Hill
Mt Pickett
Mountain Lake
Lawrence Pt
Cascade Lake
Breakwater
Rosario Pt
pier
Entrance Mt.
Doebay
Peapod Rocks
Fl 4sec 35ft 8M
BELL
N Peapod
S Peapod
Doe I
Mt Woolard
Olga
Twin Rks
Diamond Hill
Cable Area
Buck Bay
Deer Pt
Fl R 4sec BELL
Buckeye Shoal
Diamond Pt
Grindstone Hbr.
Foster Pt
Shag Rk
Obstruction Pass
Fl 4sec 23ft 7M
Obstruction I
Peavine Pass
Fl R 2½sec 22ft 4M
HARVEY CHANNEL
Shaw Island
Hankin Pt
Griswold I.
FR FLOAT
Priv maintd
Upright Hd
Shoal Bay
Canoe I
Blakely Pk
BLAKELY I.
Thatcher
Tide Pt
Strawberry
Strawberry Bay
Eagle C
CYP
122°55'
48°40'
Section Chart 6380
9th Ed. Aug. 8/60
data in RED from
H-8324

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8324 ✓

Name on Survey	A: On Chart No. 6380	B: On previous survey No.	C: On U. S. quadrangle Maps	D: From local information	E: On local Maps	F: P. O. Guide or Map	G: Rand McNally Atlas	H: U. S. Light List	K	
Buck Bay ✓	x									1
Cascade Bay ✓	x									2
Diamond Point ✓	x									3
Eastsound ✓	x									4
East Sound ✓	x									5
Fishing Bay ✓	x									6
Olga ✓	x									7
Orcas Island	x									8
Rosario Point ✓	x									9
Ship Bay ✓	x									10
Tongue Point ✓										11
Twin Rocks	x									12
Dolphin Bay - B.P.	Ch. 184 SC									13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

George M. Baer
GEOGRAPHIC NAMES SECTION
16 NOVEMBER 1960

Form 946

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8324

Records accompanying survey: Smooth sheets 1;

boat sheets 1; sounding vols. 6; wire drag vols. ;

Descriptive Reports 1; graphic recorder envelopes 4;

special reports, etc.

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

Number of positions on sheet		1415
Number of positions checked		950
Number of positions revised		75
Number of soundings revised (refers to depth only)		corrected 60, shoaled 895, added hi-lo 100, readded 240 } 1235
Number of soundings erroneously spaced		—
Number of signals erroneously plotted or transferred		—
Topographic details	Time	40
Junctions	Time	24
Verification of soundings from graphic record	Time	12
Special adjustments	Time	24
	protracting	60
	inking	100

Verification by Clarence Misfeldt Total time 376 Date March - July 1964

Reviewed by George A. Rozencoak Time 104 Date June 19-1970

Inspected by Dale E. Westbrook RHC TIME 18 hrs 2 hrs DATE 5 Feb. 1971 3/18/71

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8324 FIELD NO. L.J.-1656

Washington -- San Juan Islands -- Orcas Island -- East Sound

SURVEYED: October 25, 1956, to November 14, 1956
October 2, 1957, through October 10, 1957

SCALE: 1:10,000 PROJECT NO.: 12410

SOUNDINGS: 808 Depth Recorder
Sounding Pole, Hand Lead

CONTROL: Sextant fixes
on shore signals

Chief of Party	G. C. Mast (1956) and
	W. C. Russell (1957)
Surveyed by	J. J. Dermody
	W. E. Randall
	T. E. Simkin
Protracted by	Ship Personnel and
	W. M. Martin (PMC)
Soundings Plotted by	W. M. Martin (PMC)
Verified and Inked by	C. Misfeldt
Reviewed by	G. A. Kozemczak
	Date: June 19, 1970
Inspected by	D. E. Westbrook

1. Description of the Area

This is a survey of East Sound, a fiord which indents the south shore of Orcas Island and extends northwestward for about 6 miles. Offshore depths vary from about 15 fathoms at the entrance to 9 fathoms less than 0.2 of a mile from the head. A shoal, covered by less than 5 fathoms, extends some 400 meters off the western shore of the sound, 0.8 mile inside the entrance.

The bottom of the sound is predominantly composed of mud and sand sediments, in some places over 30 feet thick, as revealed by the fathograms.

2. Control and Shoreline

The source of control is given in the Descriptive Report. The shoreline originates with plane table surveys T-1952 and T-1954 of 1889 with additions and revisions from graphic control sheets LJ-F-56 and LJ-G-56 which have been marked for destruction.

3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves were adequately delineated, except for some areas near the shoreline where the steep slope and direction of the sounding lines parallel to the beach required approximation of some depth curves.

C. The development of the bottom configuration and the investigation of least depths is considered adequate.

4. Condition of the Survey

The field plotting, sounding records, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual except that stipple was added shoreward of the zero curve by the verifier from T-1952 and T-1954 of 1889, to indicate sand and gravel beach. This is not standard practice. However, a note has been applied to the smooth sheet to explain this stipple symbolization.

Also, the verifier expended a great deal of additional time by inking the soundings with a mechanical lettering set and inking depth curves along shore that were unsupported by hydrographic information. Otherwise, the verification was careful and complete.

5. Junctions

An adequate junction was effected with H-7080 (1947) on the south.

6. Comparison with Prior Surveys

H-2114 (1891) 1:20,000

This prior survey covers the entire area of the present survey. The soundings on the prior survey are in general agreement with present depths and no significant change

in the bottom has taken place. Only minor differences in depths were noted, although some previously undisclosed shoals were found on the present survey. The larger scale of the present survey delineates the bottom in greater detail and therefore this survey is adequate to supersede the prior survey within the common area.

7. Comparison with Chart 6380 (17th Ed., February 21, 1970)

A. Hydrography

The charted hydrography originates with the previously discussed prior survey which requires no further consideration, supplemented by the partial application of depths from the present survey before verification.

Attention is directed to the following:

(1) The pier charted in lat. 48°41.11', long. 122°55.22' originates with T-1954 (1889). Although a short pier still exists at the head of the bay, the charted pier should be deleted and the log booms shown on the present survey charted in its place.

(2) The rock awash charted in lat. 48°37.39', long. 122°50.90' originates with a symbol on T-1952 (1889) which could have been only a kelp bed located by the topographer. This rock was first charted between 1949 and 1952 when numerous rocks alongshore were added to the charts from earlier surveys. The present survey shows 0.7 fm. at that location, however, and it is believed that it adequately portrays the existing condition, therefore the rock awash should be deleted from the chart.

(3) A church spire located on the present survey in lat. 38°41.69', long 122°54.31' was recommended as a landmark in the Descriptive Report. This spire should be charted.

(4) The pier charted in lat. 48°37.05', long. 122°50.20' from chart letter L-54 (1964) was applied to the chart subsequent to the date of the present survey and should be retained on the chart.

Except for the pier noted above, the present survey is adequate to supersede the charted hydrography within the common area and the charts should be revised to fully reflect the results of the survey.

B. Aids to Navigation

There are no floating aids to navigation charted within the limits of the present survey.

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

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is an excellent basic survey and no additional field work is required.

Examined and Approved:

Chief
Marine Chart Division

Associate Director
Office of Hydrography
and Oceanography

RH C

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

TIDE NOTE FOR HYDROGRAPHIC SHEET ✓

X ~~Division of Coastal Surveys:~~ 25 November 1960

Division of Charts: R.H.Carstens

Plane of reference approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 8324

Locality Orcas Island, Washington

Chief of Party: G.C.Mast (1956) W.C.Russell (1957)
Plane of reference is mean lower low water reading.
4.5 ft. on tide staff at Rosario, Washington
33.0 ft. below B. M. 2 (1935)

Height of mean high water above plane of reference is: 7.4 ft.

Condition of records satisfactory except as noted below:

Bert W. Wilcox

Chief, Tides and Currents Branch

~~Chief, Division of Tides and Currents.~~

U. S. GOVERNMENT PRINTING OFFICE 877933


122° 50'
48° 40'
North Beach
Pt. Doughty
Pt. Thompson
Eastsound
Buck Mt.
Raccoon Pt.
Barnes
Double Hill
Lookout Mt.
Ship Bay
(See magnetic note)
LOOKOUT TOWER
Mt. Constitution
Mt. Pickett
Mountain Lake
EAST SOUND
Rosario Hill
Cascade Lake
ORCAS ISLAND
8324
Orcas Knob
Turtle Back Range
Ship Pk.
Rosario Pt.
Entrance Mt.
West Sound
Haida Pt.
Massacre Bay
Indian Pt.
Mt. Woolard
Olga
Deer Harbor
White Beach
WEST SOUND
Diamond Hill
Twin Rks.
Buck Bay
Deer Pt.
Diamond Pt.
Orcas
Grindstone Hbr.
Foster Pt.
Shag Rk.
Obstruction I.
Obstruction Pass
Cable Area
Broken Pt.
Blind I.
Blind Bay
Shaw Island
Hankin Pt.
Griswold
SHAW I.
Indian Cove
Canoe I.
Squaw Bay
Upright Hd.
Shoal Bay
Humphrey Hd.
Leo Reef
Blakely Pk.
BLAKELY I.
Thatcher
Bell Buoy
Flat Pt.
Swifts Bay
Flower I.
Port Stanley
Chart - 6380

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8324

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
12/19/60	6380	M. Rogers	Examined Before ~~After~~ Verification and Review Applied critical corrections only.
12-19-60	6300	M. Rogers	Examined - Partially applied Before ~~After~~ Verification and Review thru cht 6380
10/14/70	6380	J. Stuart	~~Before~~ After Verification and Review before Inspection (Part applied.
11-18-70	184-5C	J. BAILEY	~~Before~~ After Verification and Review BEFORE INSPECTION NO CORR. Appl. thru Dwg. 6380 #36.
12-9-71	184-5C	J. Bailey	~~Before After Verification and Review~~ AFTER INSPECTION Applied critical corrections only. as per 6380 Part. Appl.
1969	18432	Corotto	~~Before~~ After Verification and Review, Inspection ADD: HWL
3-31-78	18430	R. Hogan ✓	~~Before~~ After Verification and Review, Inspection Finally applied
6/18/80	18421	Corotto 6-20-80 RQ	~~Before~~ After Verification and Review Fully applied
6/18/80	18423 1'C	Corotto	~~Before~~ After Verification and Review Fully applied
6/80	18400	Corotto 6-30-80 RQS	~~Before~~ After Verification and Review Fully applied

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.