8609

Diag. Cht. No. 6450-2.

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-10-7-60 *Office No.* H-8609

LOCALITY

State Washington

General locality Whidbey Island

Locality Holmes Harbor & Saratoga Passage

1960-61

CHIEF OF PARTY

N. E. Taylor & H.D. Reed, Jr.

LIBRARY & ARCHIVES

DATE Oct. 17, 1962

USCOMM-DC 37022-P66

8609

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-8609

Field No. LJ-10-7-60

State WASHINGTON

General locality WHIDBEY ISLAND

Locality HOLMES HARBOR & SARATOGA PASSAGE

Scale 1:10,000 Date of survey 1960-61 Field Seasons

Instructions dated April 22, 1960, December 1, 1960

Vessels Ship LESTER JONES, Launches 88 & CS-1191

Chief of party Norman E. Taylor & H.D. Reed, Jr.

Surveyed by Ship's Officers, LESTER JONES & PATTON

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

Fathograms scaled by Personnel of Ships LESTER JONES & PATTON

Fathograms checked by Personnel of Ships LESTER JONES & PATTON

Protracted by E. D. Schwantes Jr. and A. E. Eichelberger

Soundings penciled by A. E. Eichelberger

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

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 16—80320-1

RS

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHY SURVEY H-8609, (FIELD NO. LJ-10-7-60)

Scale - 1:10,000 1960-61

Ship LESTER JONES — N.E. Taylor, Comdg.
Ship PATTON — H.D. Reed, Jr., Comdg.

A. PROJECT:

This survey is a part of Project OPR-412. Original instructions were issued under date of April 22, 1960. Supplemental instructions are dated December 1, 1960.

B. AREA SURVEYED:

This survey covers Holmes Harbor, Whidbey Island, and adjacent waters of Saratoga Passage to the north. The approximate northern limits are at Lat. 48° 07.5'. The northeastern limits are at approximate Long. 122° 28.5'. Field work was accomplished by the Ship LESTER JONES during the latter part of the 1960 field season between 8 & 19 October 1960 inclusive. The survey was completed by the Ship PATTON between 9 April and 29 June 1961 inclusive. Satisfactory junctions have been made with Surveys H-8544 (LJ-10-6-60) to the north and PA-10-1-61 to the northeast.
H-8699

C. SOUNDING VESSELS:

During the 1960 work, the Ship LESTER JONES and Launch #88 operating from the ship were used. The identifying colors for the work of these vessels are red ~~and blue respectively.~~ In 1961, Launch CS-1191, operating from the Ship PATTON was used for sounding. The identifying color is blue. Ship PATTON used for 27 bottom sample positions also shown in blue.

D. SOUNDING EQUIPMENT:

All soundings were obtained with model 808 portable depth recorders calebrated for 800 fm/sec. The following instruments were used:

Ship LESTER JONES (1960)	#125-S
Launch #88 (1960)	#148-S
Launch CS-1191 (1961)	#S-110

SEE SEC. D pp 1-2. H-8544 (1960) INCLUDED HERE Rec.

Corrections to fathometer soundings are discussed in special fathometer reports for 1960 & 1961 and are tabulated at the end of this report.
BAR Check ALSO AS IN H8544 (1960)-

E. SMOOTH SHEET:

The smooth sheet projection was constructed on the projection ruling machine in the Washington Office. The sheet had not been plotted at the time this report was written (November 1961).

F. CONTROL:

Hydrography was controlled by three point sextant fixes on shore signals. Signals were located by: triangulation, photogrammetric methods or sextant cuts and fixes. Photo hydro control was transferred from the following manuscripts: T-11617, T-11618, T-11619, T-11624.

G. SHORELINE:

Shoreline originates with the photogrammetric compilations referred to in Section F, above, Shoreline and topographic details were verified in the field by the Portland Photogrammetric Unit in 1960. A general shoreline check was made by the hydrographic party in 1961. A few changes which had taken place in details such as pilings, small piers, etc. were noted on the boat sheet and where applicable, sextant fixes were taken and recorded in the sounding volumes.

H. CROSSLINES:

Approximately 6% of crosslines was run. Agreement with the regular system of sounding lines was satisfactory.

I. JUNCTIONS:

H-8544
H-8699 Satisfactory junctions were made with a 1960 survey to the north and a 1961 survey to the northeast. (See Section B, above) The junctions between the 1960 and 1961 hydrography on this survey are satisfactory. There are no junctions with surveys made prior to 1960.

J-K. COMPARISON WITH PRIOR SURVEYS AND CHARTS:

H-1884 (1:20,000) 1888. This is the only prior survey covering the area and the soundings are widely spaced except along the shoreline. In general, there was satisfactory agreement between the two surveys and little or no change in the bottom appears to have taken place since H-1884 was made. Representative soundings transferred from H-1884 to the boat sheet showed good agreement with LJ-10-7-60, considering the time interval between the two surveys.

Chart 6450 (1:80,000) Revised 9/5/60, is the largest scale chart of the area and is based on the above survey. General agreement with LJ-10-7-60 is good. No new dangers to navigation were found during the present survey.

L. ADEQUACY OF SURVEY:

This survey is considered to be complete and adequate to supersede prior surveys for charting and no additional work is recommended for the area covered.

M. AIDS TO NAVIGATION:

Fixed aids to navigation in the area of the survey have been previously located by triangulation and are shown on the chart. Landmarks are being reported separately by the photogrammetric party. There is only one floating aid (Holmes Harbor Black Can Bouy 1) in the area of the survey. This is in agreement with the latest Light List and largest scale chart. It is believed that this bouy adequately indicates the danger it is intended to mark.

N. STATISTICS:

	No. positions	Naut. mi. sdg. line	Area in sq. naut. mi.
	Hydrography 1960		
Ship LESTER JONES	420	121.2	6.0
Launch #88	90	11.4	0.48
	Hydrography 1961		
Launch CS-1191	2214	206.8	6.85
Ship PATTON	27		
Totals	~~2784~~ 2751	339.4	13.33

1 Tide Station
4 Serial Temperature and Salinity observations
71 Bottom Samples

Q. REFERENCE TO REPORTS:

1961 Fathometer Report, forwarded to the Washington Office on Nov. 20, 1961
1960 Fathometer Report, forwarded by Ship LESTER JONES.

H.D. Reed Jr.
CDR, C&GS
Cmdg., Ship PATTON

November 14, 1961

TIDE NOTE

Survey LJ-10-7-60, H-8609

A portable automatic tide gage was established and operated at Greenbank, Whidbey Island, Washington during the course of both the 1960 & 1961 hydrography. Position - Lat. 48° 06.37', Long. 122° 34.15'. ✓

Heights of the plane of reference (MLLW) on the tide staff are as follows:

1960 - 3.8 ft.
1961 - 3.8 ft.

No corrections for differences in time or height were applied to the observed tides.

LEAD LINE COMPARISONS

(Ship hydro only)
1961 Season

Date	Lead Line	Fathometer	Corr. fms.
May 18	18.0 (mean of 5)	17.5 (mean of 5)	+ 0.5
June 20	19.3 (mean of 6)	19.0 (mean of 6)	+ 0.3
		Mean	+ 0.4

This correction used for May, 1961 ship hydrography.

Aug 8	19.6 (mean of 6)	19.1 (mean of 6)	+ 0.5
Aug 24	14.1 (mean of 6)	13.5 (mean of 6)	+ 0.6
		Mean	+ 0.6

This correction used for August 1961 ship hydrography.

Note: Velocity corrections were applied to fathometer soundings in making the above computations.

BAR CHECK CORRECTIONS

(Launch hydro only)

A bar check correction of + 0.2 fathom was used throughout the season. This was derived by meaning the daily bar checks. None of the daily values varied from the mean by more than 0.1 fathom.

INDEX (Initial) CORRECTIONS

Sheet LJ-10-7-60
Launch CS-1191
1961 Season.

Day letter	Positions (inclusive)	Correction (fms)
l	2-8	+ 0.3
l	9-12	+ 0.2
l	25-28	+ 0.2
l	29-33	+ 0.2
l	54-59	+ 0.2
l	97-100	+ 0.2
l	101-108	+ 0.2
l	117 + 2 sdgs-124	+ 0.2
l	125 + 2 sdgs-146	+ 0.2
m	20 + 1 sdg-21 + 2 sdgs	- 0.2
p	57-59 + 3 sdgs	- 0.2
r	161-161 + 3 sdgs	* 0.4 —
r	162-174	- 0.2
s	17-20	- 0.2
s	69-81	- 0.2

M-8699

Corrections negligible for Sheet PA-10-1-61, (launch and ship) and Sheet PA-20-1-61.

M-8597

PHASE CORRECTIONS

Project OPR-412, PA-10-1-61 H-8649
Ship Hydrography, Fathometer #74

Date	Day Letter	Corr. (fms.) A	Corr. (fms.) B	Mean Value used
May 19	A	0.0	+ 1.4	
"	"	0.0	+ 1.7	+ 1.5
May 20	B	0.0	+ 1.2	
"	"	0.0	+ 1.2	+ 1.2
May 22	C	0.0	+ 1.3	
"	"	0.0	+ 1.3	+ 1.3
Note: Phasing head changed after work on May 19				
Aug 18	D	0.0	+ 0.6	
Aug 19	E	0.0	+ 0.5	
Aug 21	F	0.0	+ 0.6	
Aug 22	H	0.0	+ 0.7	
	Correction to all August Ship Hydrography -			+ 0.6

Sheets LJ-10-7-60 H-8609 & PA-10-1-61 H-8649
Launch Hydrography Fathometer S-110

June 6	m	0.0	- 0.2	
June 7	n	0.0	0.0	
June 19	r	0.0	(+ 0.4) R (doubtful)	
Aug 8	b	0.0	+ 0.1	
Aug 21	e	0.0	- 0.1	
Aug 22	f	0.0	- 0.1	
Sept 23	h	0.0	0.0	
				0.0

Fathometer #51

Oct 18	n	0.0	0.0	0.0

VELOCITY CORRECTIONS

Project OPR-412

H-8602 1961 H-8677

Sheets LJ-10-7-60 & PA-10-1-61

Correction	Dates, Area, and Depths April-May Saratoga Passage Holmes Harbor	June Saratoga Passage Holmes Harbor	August Saratoga Passage
0.0	0.0 to 8.5 fms	0.0 - 7.0	0.0 - 3.5
+ 0.1	8.6 - 20.5	7.1 - 16.0	3.6 - 12.0
+ 0.2	20.6 - 32.0	16.1 - 26.0	12.1 - 20.0
+ 0.3	32.1 - 44.0	26.1 - 37.0	20.1 - 28.0
+ 0.4	44.1 - 54.0	37.1 - 47.0	28.1 - 36.0
+ 0.5	54.1 - 64.0	47.1 - 57.0	36.1 - 44.0
+ 0.6	64.1 - 74.0	57.1 - 67.0	44.1 - 51.5
+ 0.7		67.1 - 77.0	51.6 - 59.0
+ 0.8		77.1 - 80.0	59.1 - 66.5
+ 0.9			66.6 - 74.0
+ 1.0			74.1 - 80.0

Correction	August Port Susan	September Saratoga Passage	October Port Susan
0.0	00 - 4.0	0.0 - 4.0	00 - 4.5
+ 0.1	4.1 - 13.0	4.1 - 10.0	4.6 - 11.0
+ 0.2	13.1 - 21.5	10.1 - 16.0	11.1 - 17.5
+ 0.3	21.6 - 30.5	16.1 - 22.5	17.6 - 23.5
+ 0.4	30.6 - 40.5	22.6 - 28.5	23.6 - 29.5
+ 0.5	40.6 - 49.0	28.6 - 34.5	29.6 - 35.5
+ 0.6	49.1 - 56.0	34.6 - 40.5	35.6 - 41.0
+ 0.7	56.1 - 63.0	40.6 - 46.5	41.1 - 47.5
+ 0.8	63.1 - 69.0	46.6 - 52.0	47.6 - 53.0
+ 0.9		52.1 - 57.5	53.1 - 58.5
+ 1.0		57.6 - 63.0	58.6 - 64.5
+ 1.1		63.1 - 68.0	64.6 - 70.0
+ 1.2		68.1 - 74.0	
+ 1.3		74.1 - 79.0	

VELOCITY CORRECTION ABSTRACT

1960 Field Season

PROJECT CS-241 (Applicable to H-8518, H-8519, H-8520)

DEPTH (Fathoms)			CORRECTION (Fathoms)
0	-	7	+ 0.0
7.1	-	15	+ 0.1
15.1	-	24	+ 0.2
24.1	-	32	+ 0.3
32.1	-	40	+ 0.4
40.1	-	49	+ 0.5
49.1	-	57	+ 0.6
57.1	-	66	+ 0.7
66.1	-	74	+ 0.8
74.1	-	83	+ 0.9
83.1	-	92	+ 1.0
92.1	-	100	+ 1.1
100.1	-	109	+ 1.2
109.1	-	118	+ 1.3
118.1	-	126	+ 1.4
126.1	-	135	+ 1.5
135.1	-	144	+ 1.6
144.1	-	150	+ 1.7

H-8609

PROJECT CS-412 (Applicable to H-8542, H-8543, H-8544, LJ-10-7-60)

DEPTH (Fathoms)			CORRECTION (Fathoms)
0.0	-	4.0	+ 0.0
4.1	-	12	+ 0.1
12.1	-	19	+ 0.2
19.1	-	26	+ 0.3
26.1	-	40	+ 0.4
40.1	-	53	+ 0.6
53.1	-	68	+ 0.8
68.1	-	81	+ 1.0

REFERENCE:

Data and Computations included in Special Fathometer Report for 1960 Field Season.

LIST OF SIGNALS

Established 1960

Sheet LJ-10-7-60, H-8609

Name	Origin
Ark	East Point Light, 1944
Box	T-11619
Bum	T-11617
Cat	T-11619
Cow	T-11617
Duf	T-11618
Eel	Slide, 1943
Fig	T-11624
Fun	T-11614
Gal	Point, 1943
Hag	Vol I (ship), P. 3
Hut	Vol #9(1961), P. 55 pco
Ice	T-11613
Ida	T-11624
Jut	T-11624
Key	T-11624
Kid	Vol I (ship), P. 3
Lux	T-11624
Mop	T-11624
Nor	Si, 1944
Oak	Vol I (launch) P. 2
Off	Vol I (ship), P. 63
Pup	T-11624
Ree	Vol I (ship) P. 2
Rev	Saratoga Passage Light 2, 1952
Rot	Vol I (ship), P. 23
Sin	Vol I (launch), P. 24
Tax	Vol I (ship), P. 3
Wad	Hackney Island Water Tank, 1944
Yak	Vol I (ship), P. 2

HON
YEL

LIST OF SIGNALS

Established 1961

Name	Origin
Abe	T-11617
Ask Sub. Pt.	T-11619
Arm	T-11618
Ave Sub. Pt.	T-11618
Bag	Vol V, P. 54
Bob	T-11624
Dim	T-11624
Doc	T-11619
Dot	T-11624
Elm	T-11618
End	T-11619
Fox	T-11624
Hoe	T-11618
Ivy	T-11618
Jim	T-11618
Joe	T-11617
Lad	T-11618
Max	T-11619
New	T-11624
Nix	T-11624
Now Plot Sect. 45 (4)	~~T-11618~~ & Vol ~~IV~~ I, P. 51 (check)
Nut Sub. Pt.	Vol II, P. 52
Oil	T-11618
Owl	T-11624
Pep	T-11624
Pro	T-11618
Quo	T-11618
Rum	T-11624
Sag	T-11618
Sam	T-11618
Ski	T-11619
Tan	T-11618 & Vol VIII, P. 48
Van	T-11619 (check)
Why	T-11624 & Vol II, P. 5
Zoo Plot 3 Sect. 45 Sub. 1.	~~T-11617~~ & Vol I, pp 13,18,22 (check)

APPROVAL SHEET

SURVEY LJ-10-7-60, H-8609 ✓

The records for this survey are approved and no additional field work is recommended. All 1961 work was supervised by me and the records were examined daily in the field. The smooth sheet will not be plotted under my supervision.

H.D. Reed Jr.
CDR, C&GS
Cmdg., Ship PATTON

PROCESSING OFFICE NOTES - H-8609

SMOOTH SHEET

The projection was machine ruled in the Washington Office. The shoreline and control transfered and plotted by personnel of the Ship PATTON as were approximately 51% of the sounding line positions. The balance of the positions and the soundings were by the Seattle Hydrographic Processing Unit.

SOUNDINGS

Four tenths of a fathom was added to soundings by the Ship LESTER JONES (fathometer 125S) for the reason stated in the report for H-8544. THIS .4Fm HAS NOT BEEN APPLIED AS IT IS NOT NEEDED TO GET AGREEMENT WITH LAUNCH 119 (IN FACT IT IS QUESTIONABLE WHETHER IT APPLIES TO 8544 AS STATED IN THE DESCRIPT. REPORT. P.C.O.)

COMPARISON WITH CHART

Comparison has been made with Chart 6450, 12th Ed., Revised 8/6/62. The agreement is reasonably good except that the ten fathom curve on the east and south sides of Holmes Harbor appear to be charted a little too far offshore and there are a few soundings that do not agee with the smooth sheet. See the section of the chart attached to this report for comparison. Lower section of harbor

Respectfully submitted

William M. Martin

William M. Martin
Supervisory Cartographer

Approved and forwarded

M. E. Wennermark

M. E. Wennermark
Captain, C&GS
Seattle District Officer

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8609 ✓

Name on Survey	A On Chart No. 6450	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 BGN	
Beverly Beach	x									1
Camano Island	x									2
Dines Point	x									3
East Point	x								x	4
Hackney Island	x									5
Holmes Harbor	x									6
Honeymoon Bay	x								x	7
Pratts Bluff	x									8
Rocky Point	x									9
Saratoga Passage	x									10
Whidbey Island	x									11
Freeland										12
										13
										14
										15
										16
										17
										18
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										23
										24
										25
										26
										27

George Sue Bee

Geographic Names Section
18 January 1963

Form 946

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8609

Records accompanying survey: Smooth sheets 1;
boat sheets 1 Destroyed 3/19/70; sounding vols. 12; wire drag vols. ;
Descriptive Reports 1; graphic recorder envelopes 6;
special reports, etc. 1-Film Positive Destroyed 3/19/70 and 1 Roll - Bluelines

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

Number of positions on sheet		2751	
Number of positions checked		270	
Number of positions revised		2	
Number of soundings revised (refers to depth only)			
Number of soundings erroneously spaced			5
Number of signals erroneously plotted or transferred			0
Topographic details Shore-line & topography	Time	46 10	3
Junctions	Time	12 9	1
Verification of soundings from graphic record	Time	36	2
Special adjustments ©Revision of Soundings on A, B-C Day Lester Jones — See note #1.	Time	40 ½	0

Verification by Peter C. Otway J. H. Cosgrove Total time 80 179 Date 12-13-68

Reviewed by George A. Kozemczak Time 108 + 4 = 112 Date 17 June 69

US COMM C&GS DC

RHC

FORM C&GS-712
(4-62)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET ✓

4/8/63

Nautical Chart Division: R. H. Carstens

Plane of reference approved in
12 volumes of sounding records for

HYDROGRAPHIC SHEET 8609

Locality Whidbey Island, Washington

Chief of Party: N. E. Taylor (1960)
H. P. Reed Jr. (1961)

Plane of reference is mean lower low water reading.

3.8 ft. on tide staff at Greenbank (1960-61)

13.9 ft. below B. M. 1(1960)

Height of mean high water above plane of reference is:
10.4 feet.

Condition of records satisfactory except as noted below:

J. M. Symons
Chief, Tides and Currents Branch

USCOMM-DC 16543-P62

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8609 FIELD NO. LJ-10-7-60

Washington, Whidbey Island, Holmes Harbor and Approaches

SURVEYED: 1960-61

SCALE: 1:10,000 PROJECT NO.: OPR-412

SOUNDINGS: 808 Fathometer CONTROL: Sextant angles on shore signals

Chief of Party	N. E. Taylor
	H. D. Reed, Jr.
Surveyed by	N. E. Taylor
	C. B. Carter, Jr.
	J. L. Piter
	L. L. Wilkerson
Protracted by	E. D. Schwantes, Jr.
	A. E. Eichelberger
Sounding Plotted by	A. E. Eichelberger
Verified and Inked by	P. C. Otway
	J. H. Cosgrove
Reviewed by	G. A. Kozemczak
	Date: June 17, 1969
Inspected by	R. H. Carstens

1. Description of the Area

This survey covers Holmes Harbor, indenting Whidbey Island 5 miles in a southerly direction, and adjacent waters of Saratoga Passage to the north. Depths range from 30 to 40 fathoms off the entrance to 17 fathoms near the head, where good anchorage, except from northerly weathers, may be had in mud bottom. Bottom characteristics are predominantly fine sand, green mud, and soft gray mud. There are numerous boulders along the shore. Offshore the bottom slopes evenly and has few irregularities.

2. Control and Shoreline

The source of control is given in the Descriptive Report. The shoreline originates with reviewed photogrammetric manuscripts T-11617, T-11618, T-11619, and T-11624 of 1960.

3. Hydrography

Depths at crossings are in good agreement. The usual depth curves were adequately delineated. The least depths on the shoals and the bottom configuration were adequately developed.

4. Condition of Survey

The field plotting, sounding records, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual. The quality and neatness of drafting is low and reflects the efforts of new verifiers.

5. Junctions

An adequate junction was effected with H-8544 (1960) to the north.

The junction with H-8699 (1961-62) on the northeast will be considered in the review of that survey.

6. Comparison With Prior Surveys

A. H-1884 (1888) 1:20,000

This prior survey covers the entire area of the present survey. A comparison between the prior and present survey reveals a stable bottom with little differences in depths. The present survey being larger scale and more closely developed, shows depths of 1 and 2 fathoms deeper in the two areas of greatest depths; namely, near the mouth of Holmes Harbor and the mid-section of Saratoga Passage.

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

7. Comparison With Charts

Chart 6450 1:80,000 (16th Ed., February 17, 1969)
Chart 184-SC 1:80,000 (9th Ed., corrected through N.M. 11, March 15, 1969)

A. Hydrography

The charted hydrography originates with the previously discussed surveys which require no further consideration, supplemented by the partial application of depths from the boat sheet and unverified smooth sheet of the present survey. Only minor differences were noted between charted depths and present survey depths.

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

B. Aids to Navigation

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

8. Compliance With Instructions

The survey adequately complies with the Project Instructions.

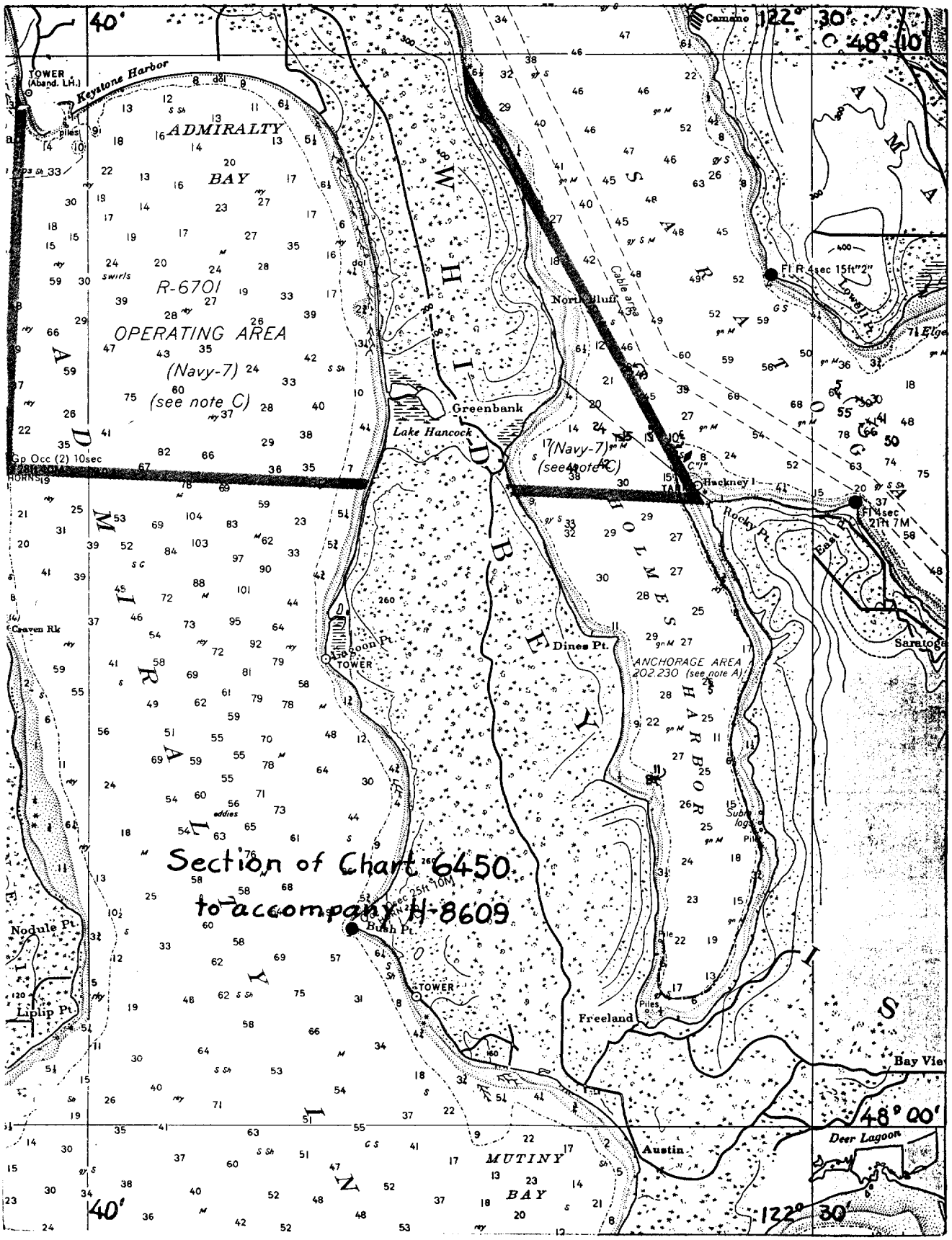
9. Additional Field Work

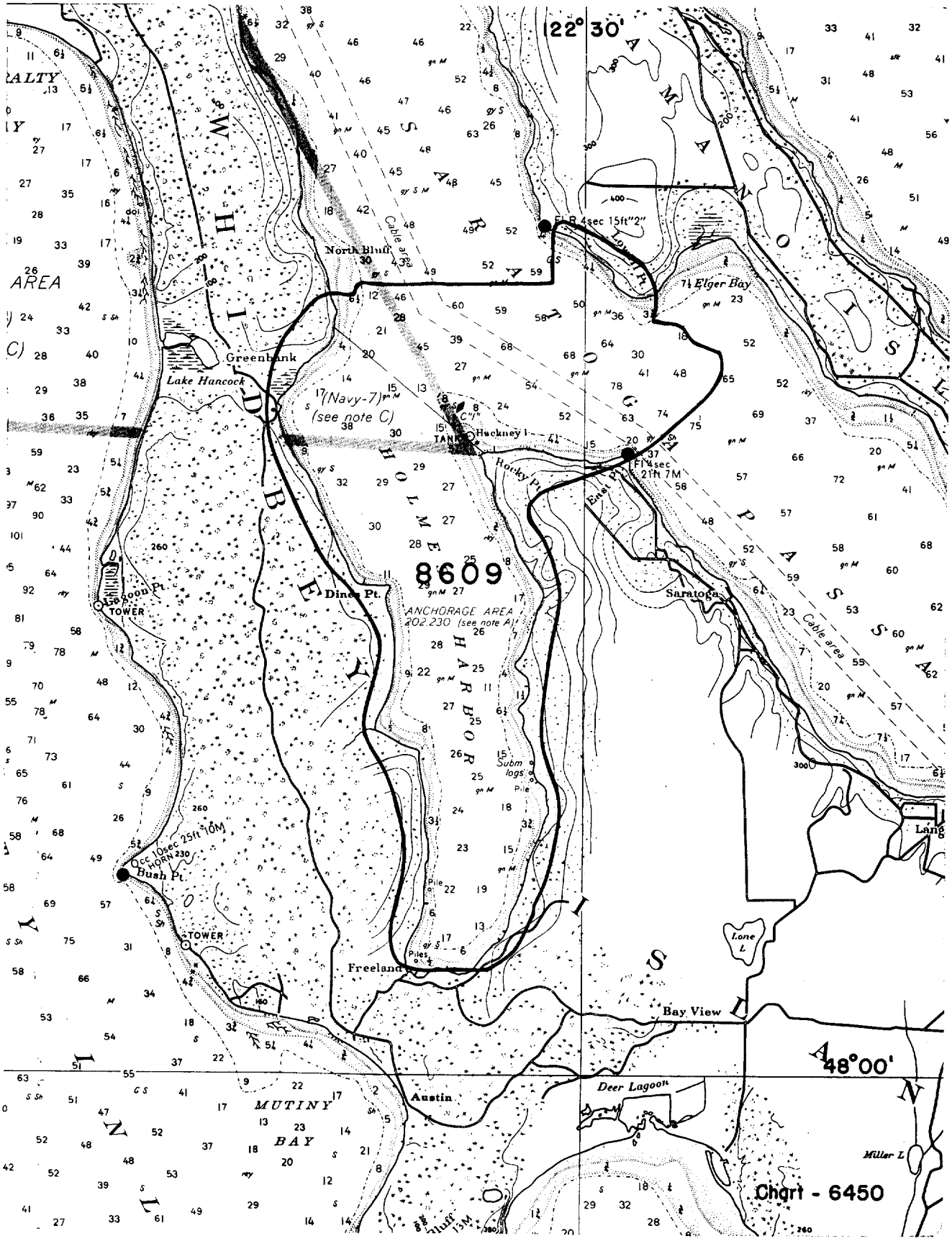
This is a very good basic survey and no additional field work is recommended.

Examined and Approved:

John O. Boyer
Chief
Marine Chart Division

Associate Director
Hydrography and Oceanography


40°
122° 30'
48° 10'
48° 00'
122° 30'
40'
ADMIRALTY
BAY
R-6701
OPERATING AREA
(Navy-7)
(see note C)
(Navy-7)
(see note C)
ANCHORAGE AREA
202.230 (see note A)
Keystone Harbor
TOWER
(Aband. LH.)
Gp Occ (2) 10sec
Greenbank
Lake Hancock
North Bluff
Cable area
Camano
Ft R 4sec 15ft"2"
Hackney I.
Rocky Pt.
Ft 4sec
21ft 7M
Dines Pt.
Goon Pt.
TOWER
Bush Pt.
TOWER
Nodule Pt.
Liplip Pt.
Craven Rk
Freeland
Austin
Deer Lagoon
Saratoga
Bay Vie
MUTINY
BAY
Section of Chart 6450
to accompany H-8609


122° 30'
48° 00'
8609
Greenbank
Lake Hancock
North Bluff
Cable area
Fl R 4sec 15ft "2"
Elger Bay
(Navy-7)
(see note C)
Hackney I
Holmes Harbor
Holmes Harbor Entrance
Fl 4sec 21M 7M
Saratoga Passage
Cable area
Dines Pt.
Lagoon Pt.
TOWER
Bush Pt.
Occ 10sec 25ft 10M
HORN 230
TOWER
Freeland
Subm logs
Piles
Lone L
Bay View
Deer Lagoon
Austin
MUTINY BAY
Miller L
Whidbey Island
Camano Island
ANCHORAGE AREA
202.230 (see note A)
Chart - 6450

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8609

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
2-25-63	6450	W. H. Wall	Before [redacted] Verification and Review Partly applied
			Revised a few soundings
2-5-63	6300	W.H. Wall	Before ~~After~~ Verification and Review – No corr Exam
12-18-63	6450	John W Knoop	Partly Applied Before ~~After~~ Verification and Review
4-16-64	6401	G.R. Johnson	Before ~~After~~ Verification and Review Partly App'd
			thru cht 6450, drgs #31 & 32
11/19/69	6450	J. McMillan	Adequate Before After Verification and Review & Inspection Dwg #38
			Several sdgs & Insbore Rks charted
12/31/69	184	R. A. Lillis	Adequate Before After Verification and Review & Inspection
			thru 6450 Dwg. #38
6-12-70	6401	B. Fernandez	~~Before~~ After Verification and Review + Inspection
			Adequately Appd. [redacted] Appd Several sdgs + Rks (thru cht 6450)
9-9-70	6300	J.T. Gallahan	~~Before~~ After Verification and Review no correction
			considered fully appld – hydro deleted on chart.
			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.