

8481

Diag. Cht. No. 6380-2.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HO-1359 Office No. H-8481

LOCALITY

State Washington

General locality Strait of Georgia

Locality Alden Bank

1959

CHIEF OF PARTY

M. J. Tonkel

LIBRARY & ARCHIVES

DATE March 2, 1960

USCOMM-DC 5087

8481

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-8481

Field No. HO-1359

State Washington

General locality ~~Southern~~ Strait of Georgia

Locality Alden Bank

Scale 1:10,000 Date of survey 10 Aug - 16 Sept 1959

Instructions dated 28 October 1958

Vessel HODGSON

Chief of party Miller J. Tonkel

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

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

Fathograms scaled by R. E. Alderman, R. M. Sundean, E. M. Machnik, A. M. Legako

Fathograms checked by Same as above

Protracted by W. P. Yeager

Soundings penciled by W. P. Yeager

Soundings in fathoms ~~set~~ at ~~XXXX~~ MLLW are based on a velocity
of sound of 800 fm's/sec.

REMARKS:

MLLW

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY H-8481 (Field No. HO-1359)

PROJECT CS-241
ALDEN BANK, WEST OF SANDY POINT, WASHINGTON

DATE OF SURVEY: AUGUST - SEPT. 1959
SCALE OF SURVEY: 1:10,000

USC&GS SHIP HODGSON, LCDR MILLER J. TONKEL, COMMANDING OFFICER

Surveyed by Ensigns R. E. Alderman and R. M. Sundean

A. PROJECT:

Survey was undertaken in accordance with revised instructions for Project CS-241, dated 28 October 1958 and addressed to Commanding Officer, USC&GS Ship HODGSON.

B. SURVEY LIMITS AND DATES:

This survey is over Alden Bank west of Sandy Point and southwest of Point Whitehorn, Washington. It joins survey H-8323⁽¹⁹⁵³⁾ (1:10,000) in the southeast corner, survey H-7962⁽¹⁹⁵⁹⁾ (1:10,000) on the easternmost boundary, and contemporary survey H-8478⁽¹⁹⁵⁶⁾ (Field No. 3159, 1:30,000) on the west and north. The survey is located between Latitude 48° 46' and Latitude 48° 51' and between Longitude 122° 54' and Longitude 122° 43.5'. Hydrography began on 10 August and ended on 16 September 1959.
and H-8518 (1960) on the northeast, + 8519 (1960) on the southwest.

C. VESSELS AND EQUIPMENT:

One day's hydrography was accomplished by the Ship HODGSON. The major portion was completed with Launches Nos. CS-160 and CS-1192 operating from the Ship HODGSON. The turning radius of the launches was about 30 meters when running at maximum speed at 1800 rpms.

An EDO fathometer, Model 255, No. 211, was used in Launch CS-1192 and all soundings were taken in feet and converted to fathoms on the smooth sheet. Launch CS-160 was equipped at different times with Model 808 fathometers Nos. 106, 147 and 62s. These were operated in fathoms except over the Alden Bank shoal area where they were operated in feet at depths less than five fathoms. The ship HODGSON was equipped with Model 808 fathometer No. 147. Depths on the shoal area were verified by hand-leads.

D. TIDE AND CURRENT STATIONS:

Portable automatic tide gages were maintained at Blaine, Washington, and Echo Bay, Sucia Islands, Washington, during the time of the survey. Echo Bay tides were used without time or range correction. Tide reducers were entered to the nearest 0.2-foot in depths sounded in feet and to the nearest 0.1-fathom in depths recorded in fathoms. There were no current stations within the limits of this survey.

E. SMOOTH SHEET:

The projection was made by hand at the C&GS Ship Base in Seattle. All positions were plotted by use of the shoran protractor.

F. CONTROL STATIONS:

The survey was shoran controlled from stations Sho-PAT on Patos Island at Latitude $48^{\circ} 47' 20.56''$ and Longitude $122^{\circ} 58' 10.22''$, Sho-ROB at the Point Roberts Light at Latitude $48^{\circ} 58' 17.62''$ and Longitude $123^{\circ} 04' 56.22''$, and Sho-WHITE on Point Whitehorn at Latitude $48^{\circ} 53' 37.76''$ and Longitude $122^{\circ} 47' 30.66''$.

G. SHORELINE AND TOPOGRAPHY:

There were no topographic details or shoreline within the limits of the survey.

H. SOUNDINGS:

Soundings were taken in feet with an EDO fathometer, Model 255, No. 211, and in fathoms with Model 808 fathometers Nos. 106, 147 and 62s except in the shoal area of Alden Bank where the soundings were taken in feet at depths less than five fathoms. The shoal area development was verified by hand-lead soundings.

Settlement and squat corrections were applied to the launch fathometer soundings. (See Fathometer Report).

I. CONTROL OF HYDROGRAPHY:

Shoran fixes were used for the horizontal control of the survey. No adjustment of any portion of hydrography is necessary.

J. ADEQUACY OF SURVEY:

This survey is considered complete and adequate for charting purposes and may supersede prior surveys. Junctions with adjoining surveys and charts are satisfactory and depth curves can be adequately drawn at the junctions.

K. CROSSLINES:

Crosslines were run to the extent of 7.5 percent of the regular sounding lines. Crossings were satisfactory.

L. COMPARISON WITH PRIOR SURVEYS:

The survey is in general agreement with prior surveys H-2079, 1:20,000, 1889; H-7962, 1:10,000, 1953; H-8322, 1:10,000, 1956; and contemporary surveys H-8078, 1:30,000, (Field No. HO-3159). Although minor discrepancies do exist, they are not constant either in magnitude or direction.

L H-8518(1960)

P 6 REVIEW

M. COMPARISON WITH CHART:

The survey is in general agreement with C&GS Chart 6380, Revised 11-25-57. The least depth found on the Alden Bank shoal by this survey was 2.9 fathoms at Latitude 48° 47.9²⁵ and Longitude 122° 49.76⁴ as compared to 2.75 fathoms on Chart No. 6380 at Latitude 48° 48.03' and Longitude 122° 49.06'. Kelp indicated on chart was verified on shoal as indicated. Also 2.9 fms at Lat. 48° 47.76', Long. 122° 49.53'.

TP7
Review

N. DANGERS AND SHOALS:

The only shoal area within the limits of the survey is the Alden Bank shoal which is already located on the charts. The least depth given on C&GS Chart 6380 over Alden Bank is 2.75 fathoms at Latitude 48° 48.03' and Longitude 122° 49.06'. This depth was not verified after extensive hand-lead soundings in the area. The least depth found by the survey was 2.9 fathoms at Latitude 48° 47.9²⁵ and Longitude 122° 49.76⁴.

TP7
Review

O. COAST PILOT INFORMATION:

See Coast Pilot Report. ✓

P. AIDS TO NAVIGATION:

There are two floating aids to navigation within the limits of this survey:

<u>Name</u>	<u>Geographic Position</u>	<u>Number in Light List</u>	<u>Depth of Water</u>	<u>Date of Location</u>
ALDEN BANK	48° 47.32' ✓	1977 ✓	³⁹ 41 feet	9-12-59 ✓
LIGHTED BELL BUOY 2	122° 49.98' ✓			(Shoran fix)
ALDEN BANK	48° 48.20' ✓	1977.5 ✓	⁹⁰ 60 feet	9-10-59 ✓
BUOY 1	122° 48.50' ✓ 49			(Shoran fix)

Q. LANDMARKS FOR CHARTS:

No natural objects were selected for landmarks during this survey.

R. GEOGRAPHIC NAMES:

None recommended. ✓

S. SILTED AREAS:

There is no evidence of any newly silted areas within the limits of the survey.

T - Y.

Not used. ✓

Z. TABULATION OF APPLICABLE DATA:

1. Shoran Report
2. Fathometer Report
3. Coast Pilot Report
4. Photogrammetric Report
5. Attached Material
 - a. Statistics
 - b. Tide Note
 - c. List of Signals
 - d. Sheet Layout
 - e. Geographic Names List
 - f. Fathometer Correction Abstract (also see Fathometer Report)
 - g. Approval Sheet

Respectfully submitted,

Ray M. Sundean

Ray M. Sundean
ENSIGN, C&GS

W. Paul Yeager

W. Paul Yeager
ENSIGN, C&GS

STATISTICS FOR
HYDROGRAPHIC SURVEY H-8481 (1959)

<u>Volume</u>	<u>Day Letter</u>	<u>Date</u>	<u>Number of Positions</u>	<u>Naut. Miles Sdg.</u>
<u>Launch CS-160 (Brown)</u>				
1	a	10 August	38	14.0
1	b	11 August	95	19.5
1	c	12 August	52	12.5
2	d	30 August	31	7.9
2-3	e	31 August	165	44.7
3-4	f	1 Sept.	133	37.5
4	g	2 Sept.	80	22.3
5	h	10 Sept.	70	18.5
5	j	11 Sept.	24	6.2
5-6	k	12 Sept.	76	16.9
6	l	13 Sept.	119	12.3
6	m	14 Sept.	9	0
6	n	16 Sept.	44	0

<u>Launch CS-1192 (Green)</u>				
7	a	30 August	95	20.4
7	b	31 August	131	26.9
7	c	1 Sept.	118	15.6
7	d	2 Sept.	13	0
8	e	10 Sept.	22	0
8	f	11 Sept.	19	0
8	g	12 Sept.	21	0

<u>Ship HODGSON (Blue)</u>				
9	A	14 August	13	5.2

	<u>Positions</u>	<u>Naut. Miles Hydro</u>	<u>Stat. Miles Hydro</u>
Launch CS-160	936	212.3	244.1
Launch CS-1192	411	62.9	71.1
Ship HODGSON	13	5.2	5.9
	<u>1360</u>	<u>280.4</u>	<u>321.1</u>

TOTAL AREA OF SURVEY: 11.9 Sq. Nautical Miles

TIDE NOTE

HYDROGRAPHIC SURVEY H-8481 (Field No. HO-1359)

Portable automatic tide gages listed below were maintained during this survey:

BLAINE: Latitude $48^{\circ}59.5'$ Longitude $122^{\circ}45.9'$ MLLW on staff 4.5' *Not on sheet*

ECHO BAY: Latitude $48^{\circ}45.3'$ Longitude $122^{\circ}53.7'$ MLLW on staff 4.0' *Not on sheet*

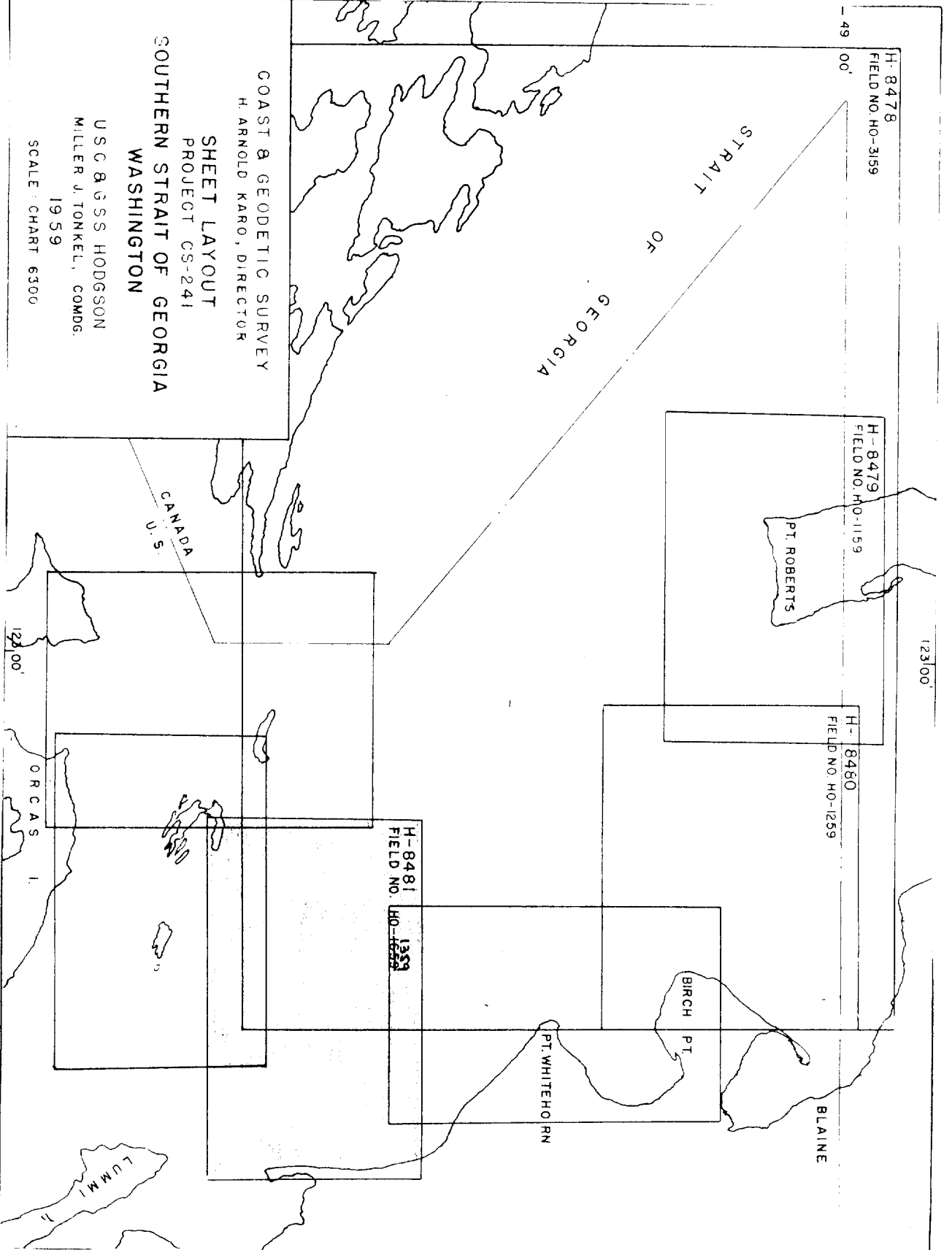
All soundings for Survey No. H-8481 were referred to the Echo Bay gage MLLW without time or range correction.

LIST OF SIGNALS USED

HYDROGRAPHIC SURVEY H-8481 (1959) (Field No. HO-1359)

Shoran Control
(Located by 3rd-Order Triangulation)

<u>Sho-PAT</u>	Latitude 48° 47' 20.56"	Longitude 122° 58' 10.22"	<i>Not on sheet</i>
<u>Sho-RUB</u>	Latitude 48° 58' 17.62"	Longitude 123° 04' 56.22"	"
<u>Sho-WHIT</u>	Latitude 48° 53' 37.76"	Longitude 122° 47' 30.66"	"



H-8478
FIELD NO. HO-3159

49

00'

STRAIT OF GEORGIA

H-8479
FIELD NO. HO-1159

PT. ROBERTS

123 00'

H-8480
FIELD NO. HO-1239

BLAINE

H-8481
FIELD NO. HO-1359

BIRCH PT.

PT. WHITEHORN

COAST & GEODETIC SURVEY
H. ARNOLD KARO, DIRECTOR
SHEET LAYOUT
PROJECT CS-241
SOUTHERN STRAIT OF GEORGIA
WASHINGTON

U.S.C. & G.S.S. HODGSON
MILLER J. TONKEL, COMDG.
1959
SCALE: CHART 6300

CANADA
U.S.

123 00'

ORCAS I.

LUMMI I.

FATHOMETER CORRECTION ABSTRACT

ECHO CORRECTORS APPLIED

255 EDO No. 211
 Launch No. 1192
 H-8481, a - g days
 Corr. Range
 (FATHOMS)

+0.2	0.0 to 4.2
+0.3	13.5
+0.4	21.4
+0.5	29.0
+0.6	37.0
+0.7	44.8
+0.8	52.0

808-type No. 106
 Launch No. 160
 H-8481, a - c days
 Corr. Range
 (FATHOMS)

+0.4	0.0 to 1.6
+0.5	2.0
+0.6	6.9
+0.7	15.5
+0.8	23.0
+0.9	31.0
+1.0	46.0
+1.2	51.0

808-types Nos. 625;106;147
 Launch No. 160
 H-8481, d - g days
 Corr. Range
 (FATHOMS)

+0.4	0.0 to 11.0
+0.5	18.6
+0.6	26.0
+0.7	31.0
+0.8	50.0
+1.0	51.0

808-type Nos. 625;
 106; 147
 Launch No. 160
 H-8481, h - n days
 Corr. Range
 (FATHOMS)

+0.4	0.0 to 2.0
+0.3	4.7
+0.4	11.8
+0.5	19.0
+0.6	27.3
+0.7	31.0
+0.8	52.2

808-type Nos. 625; 106
 Launch No. 160
 H-8481; f - g
 Corr.* Corr.** Range
 (FEET)

+2.4	+2.6	0.0 to 9.0
+2.6	+2.8	37.0
+2.8	+3.0	39.0
+3.0	+3.2	51.0
+3.2	+3.4	66.0

808-type Nos. 625; 106
 Launch No. 160
 H-8481; h - 12k
 Corr.* Corr.** Range
 (FEET)

+2.4	+2.6	0.0 to 7.5
+2.6	+2.8	38.0
+2.8	+3.0	39.7
+3.0	+3.2	50.0
+3.2	+3.4	66.0

808-type No. 147
 Launch No. 160
 H-8481, 13k- m
 Corr.* Corr.** Range
 (FEET)

+2.0	+2.2	0.0 to 14.0
+2.2	+2.4	20.0
+2.4	+2.6	27.0
+2.6	+2.4	31.5
+2.4	+2.2	33.5
+2.2	+2.4	38.0
+2.4	+2.6	41.0
+2.6	+2.8	55.0
+2.8	+3.0	66.0


808-type No. 147
 Ship HODGSON
 H-8481, A day
 (FATHOMS)
 Corr. Range

+1.7	0.0 to 6.0
+1.8	13.0
+1.9	21.0
+2.0	36.0
+2.2	53.0
+2.4	70.0
+2.6	88.0
+2.8	101.0
+3.0	146.20

APPROVAL SHEET
HYDROGRAPHIC SHEET H-8481

The boat sheet and field records for this survey were examined daily during the field season. The smooth sheet work was executed by ENSIGN W. Paul Yeager under supervision of this Command.

The survey is complete and adequate with no additional field work considered necessary. Junctions with contemporary and prior surveys are satisfactory.



MILLER J. TONKEL
LCDR, C&GS
Chief of Party

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8481

FIELD NO. HO-1359

Washington, Strait of Georgia, Alden Bank

SURVEYED: August - September 1959

SCALE: 1:10,000

PROJECT NO. CS-241

SOUNDINGS: 808 Depth Recorder
Edo Depth Recorder
Leadline

CONTROL: Shoran

Chief of Party----- M. J. Tonkel
Surveyed by----- R. E. Alderman and R. M. Sundean
Protracted by----- W. P. Yeager
Soundings plotted by----- W. P. Yeager
Verified and inked by----- J. W. Knoop and J. C. Chambers
Reviewed by----- I. M. Zeskind
Inspected by----- R. H. Carstens DATE 1/17/67^{2?}

1. Description of the area

The survey consists of 2 parts: one part covers Alden Bank; the other part covers a rectangular area of about 8 square miles located 1/2 to 2 miles east of Alden Bank. Both areas are located in the southern portion of the Strait of Georgia. The bottom of the eastern part of the survey is fairly smooth. It slopes gradually from depths of 11 fathoms to depths as great as 40 fathoms. Alden Bank is a long narrow ridge which crests in the vicinity of lat. 48°48.0', long. 122°49.5'. The bottom is fairly smooth except in the vicinity of the crest where it is generally irregular.

2. Control and Shoreline

The source of the control is given in the Descriptive Report. No shoreline is shown on this offshore survey.

3. Hydrography

Depths at crossings are in adequate 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

- a. The Descriptive Report and sounding records are complete and comprehensive.
- b. A number of pinnacle depths had not been scanned by the field party. These were entered in the Washington Office.
- c. The smooth plotting was accurately done.

5. Junctions

An adequate junction was effected with H-7962(1953) on the northeast. The junction with H-8518(1960) on the north, with H-8478(1959) on the north and west, and with H-8323 on the south will be considered in the reviews of those surveys.

6. Comparison with Prior Surveys

A. H-405(1853), 1:200,000
H-709(1858-59) 1:100,000

The few soundings on these small-scale early reconnaissance surveys which cover the area of the present survey, afford no adequate basis for comparison. The present survey is adequate to supersede the prior surveys.

B. H-2079(1889-91), 1:20,000

This early reconnaissance survey covers the area of the present survey. A comparison between the prior and present surveys reveals only minor

differences of 1/2 to 1 fathom. One sounding from H-2079 was carried forward to the present survey.

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

7. Comparison with Chart 6380 (Latest print date 7/31/61)

A. Hydrography

The charted hydrography originates with prior survey H-2079 (1889-91), which needs no further consideration, supplemented by 2 critical soundings from the present survey prior to verification and review.

The 2 3/4-fm. sounding charted in lat. 48°48.1' long. 122°49.1', originates with H-2079. This sounding is erroneous and should actually be 3 fathoms, which is in adequate agreement with 3.1 fathom depth on the present survey.

The present survey supersedes the charted hydrography.

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 an excellent basic survey and no additional field work is recommended.

H-8481 - 4

Examined and Approved:




Chief,
Nautical Chart Division



Assistant Director,
Office of Cartography



Projects Officer,
Operations Division



Assistant Director,
Office of Oceanography

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ...8481...

Records accompanying survey: Smooth sheets ...1.;
 boat sheets .1...; sounding vols. .9...; wire drag vols.;
 Descriptive Reports .1...; graphic recorder envelopes ?...;
 special reports, etc.

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

Number of positions on sheet	.....	1375 ✓
Number of positions checked	.....	64 112
Number of positions revised	.....	11
Number of soundings revised (refers to depth only)	.....	70 0
Number of soundings erroneously spaced	.....	14 6
Number of signals erroneously plotted or transferred	.....	✓
Topographic details	Time	✓
Junctions	Time	30 hrs 0 5
Verification of soundings from graphic record	Time	20 hrs 4
Special adjustments	Time	5 hrs.
Verification by <i>Frank Pawlat</i> <i>John S. Knopp</i> <i>J. C. Shaw</i>	Total time	160 hrs
	Date	7-8-64
	Date	3-22-61
Reviewed by <i>W. J. ...</i>	Time	60 hrs
	Date	4-20-61
	Time	24 24
	Date	1/17/62

RHe

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF COAST AND GEODETIC SURVEYS~~

31 March 1960

Division of Charts: R. H. Carstens

Plane of reference approved in
9 volumes of sounding records for

HYDROGRAPHIC SHEET 8481

Locality Georgia Strait, Washington

Chief of Party: M. J. Tonkel in 1959
Plane of reference is mean lower low water, reading
4.2 ft. on tide staff at Echo Bay
10.2 ft. below B. M. 1 (1956)

Height of mean high water above plane of reference is 7.9 feet.

Condition of records satisfactory except as noted below:

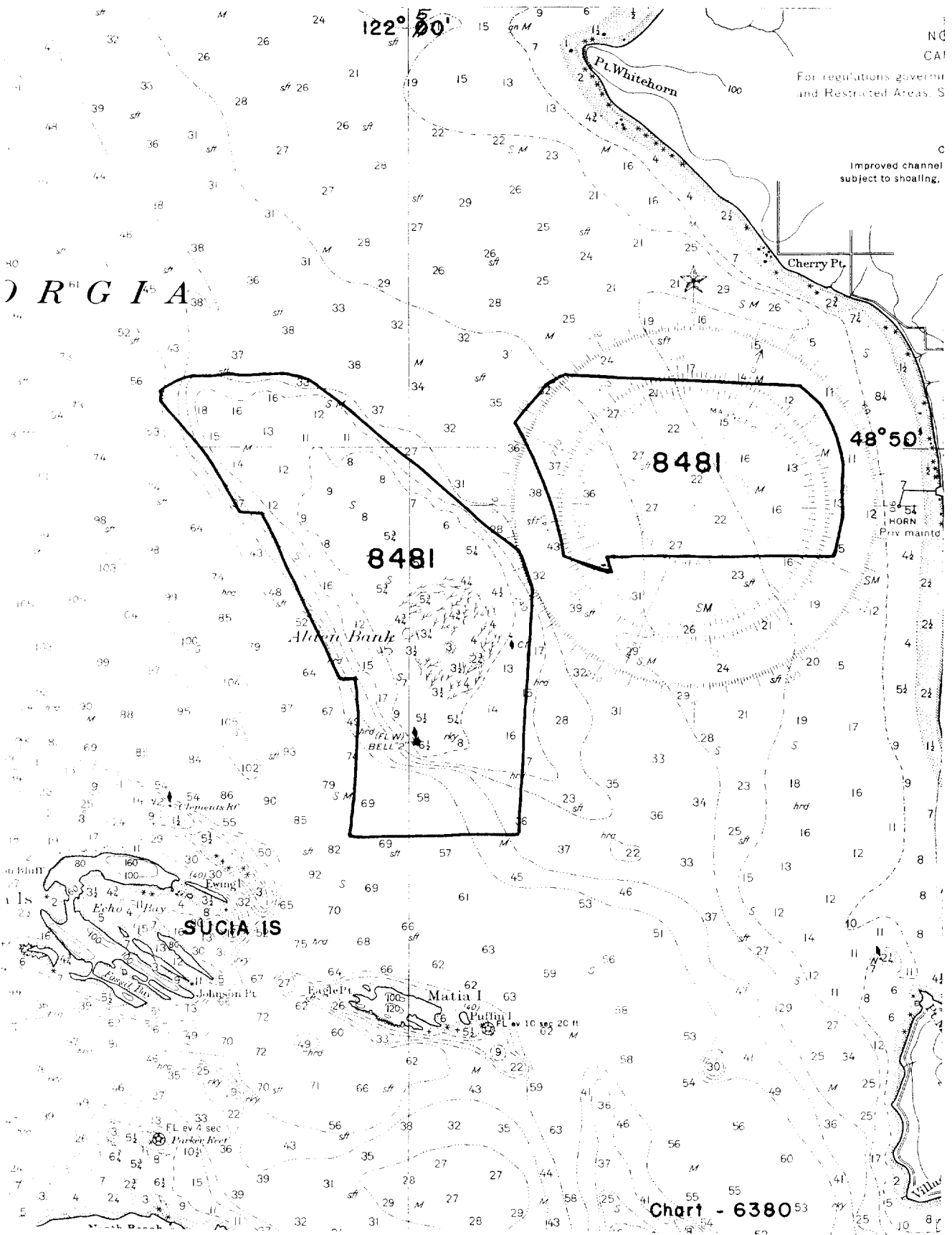
William Shofner

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

GEOGRAPHIC NAMES
Survey No. H-8481

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
STRAIT OF GEORGIA (TITLE)	X											1
ALDEN BANK	X											2
												3
												4
												5
												6
												7
												8
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												27

George D. Buel
Geographic Names Section
10 March 1960



GEORGIA

122° 50'

NO
CAI

For regulations govern
and Restricted Areas. S

Improved channel
subject to shoaling.

Cherry Pt.

8481

8481

48° 50'

Allen Bank

SUCIA IS

Chart - 6380

NAUTICAL CHARTS BRANCH

● SURVEY NO. H-2481

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
3-8-60	6380	M. Rogers	Added & revised a few angles vicinity of Alden Bank Before After Verification and Review ✓ RND 3/10/60
5-16-60	6300	J.M. Albert	Before After Verification and Review via 6380
2-21-62	6380	G.R. Johnson	Before After Verification and Review Fully Applied <i>before</i> Before Application
12-13-63	6380	John W Knoop	Full Application - No Corrections Before After Verification and Review
8-4-65	6300	G.R. Johnson	Before After Verification and Review Fully applied thru chrt 6380, dca #29
2-14-78	18431	D.C. Larson ^{RC5}	Before After Verification and Review Fully applied new chart
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

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