

8855

Diag. Cht. No. 8552.

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. HO-10-1-65	Office No. H-8855
LOCALITY	
State	Alaska
General locality	Resurrection Bay
Locality	North of Thumb Cove
<u>1965</u>	
CHIEF OF PARTY	
J. B. Watkins, Jr.	
LIBRARY & ARCHIVES	
DATE	January 18, 1968

5
15
88
88

HYDROGRAPHIC TITLE SHEET

H-8855 ✓

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

H● 10-1-65 ✓

State ALASKA ✓

General locality RESURRECTION BAY ✓

Locality ~~SEWARD~~ N. of Thumb Cove

Scale 1:10,000 ✓ Date of survey 1965 (July 23 - Aug 31)

Instructions dated Feb. 10, 1965 Project No. OPR-452 ✓

Vessel USC&GSS HODGSON & MOTOR WHALEBOAT #1 ✓

Chief of party JOHN B. WATKINS, JR. ✓

Surveyed by JOHN B. WATKINS, JR., A.J. PATRICK & G.C. CHAPPELL ✓

Soundings taken by echo sounder, hand lead, pole RAYTHEON DE-723 ✓

Graphic record scaled by SHIP PERSONNEL ✓

Graphic record checked by SHIP PERSONNEL & NORFOLK HYDROGRAPHIC PRO. BR. ✓

Protracted by GERBER DIGITAL PLOTTER ✓

Soundings penciled by GERBER DIGITAL PLOTTER ✓

Soundings in fathoms ~~feet~~ at MKW MLLW

REMARKS: VERIFICATION BY A.K. SCHUGELD OF THE NORFOLK HYDROGRAPHIC ✓
PROCESSING BRANCH.

J.J. G

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY

REGISTER NUMBER: H-8855
FIELD NUMBER: HO-10-1-65

SCALE: 1:10,000
1965

USC&GSS HODGSON and MOTOR WHALEBOAT #1

John B. Watkins, Jr.
Chief of Party

A PROJECT

The survey was accomplished under Original Instructions dated 10 February 1965, Project OPR-452. There were no supplemental or amended instructions.

B AREA SURVEYED

N. of Thumb Cove
The area surveyed covers Resurrection Bay, with the exception of the inshore northwest corner of the bay. This excepted area is covered by Contemporary Survey H-8822, (HO-5-2-65), scale: 1:5,000. The approximate limits of the area are: 60 00 30 N to 60 07 00 N and 149 20 00 W to 149 26 30 W. Field work was accomplished between July 23, 1965 and August 31, 1965.

C SOUNDING VESSELS

All soundings were obtained with the Ship HODGSON and Motor Whaleboat #1. Thirteen bottom samples were obtained by the Ship LESTER JONES.

Ship positions and day letters were recorded in the sounding volumes in red, motor whaleboat positions and day letters in purple.

When the positions were logged for automated plotting an arbitrary system of position numbering was used as follows:

- (1) All ship positions numbered from ~~X~~²⁰ to 1192. *Pos. 1-19 cuts to locate signals, not logged as part of survey.*
- (2) All motor whaleboat positions numbered from 2000 to 2987.
- (3) All bottom sample~~x~~ positions assigned a 3000 series number and indexed in the volumes. *for HODGSON, LESTER JONES, and MWB #1*

There were ~~24~~⁹¹ positions which were originally obtained by MWB #1 on Contemporary Survey H-8822 in the field. These were subsequently *This includes positions falling east of Long. 149° 25'*

transferred to this survey, H-8855, and are included in (2) above. These positions and soundings were also extracted from Volume I of H-8822 and are recorded in Volume VII of this survey. ✓

D. SOUNDING EQUIPMENT

Raytheon DE-723 Echo Sounders were used throughout. The Ship HODGSON used sounders numbers 142, 146 and 554; motor whaleboat #1 used sounders numbers 142 and 146 with an external 12 volt D.C. power supply. ✓

Velocity corrections were computed from temperature and hydrometer readings of water samples collected by Nansen cast. Information contained in Director, Pacific Marine Center memorandum, "Recording Discrepancies", dated 1 February 1965 is not applicable to this survey. ✓

Detailed explanations and computations of velocity corrections are contained in a separate report, "Correction to Echo Soundings", HODGSON, 1965. An abstract of corrections is appended to this report. *Report could not be found in CFS Archives.*

E. SMOOTH SHEET

The signal and position overlay were plotted on the Gerber Digital Plotter at Pacific Marine Center and verified by ship personnel. The sounding overlay and final smooth sheet will be plotted and verified by personnel at Pacific Marine Center. *No abstract appended to this report.* ✓
Plotted by Gerber and plotted in PMC Atlantic

F. CONTROL

All hydrography was accomplished by visual fix methods. The control used was obtained from Preliminary Photogrammetric manuscripts. Considerable difficulty was encountered in the field with the control because of a slight datum shift between the manuscripts on the east and west sides of the bay. This has been rectified with the receipt of advance manuscripts which were used in the position plot overlay. ✓

Two signals were misidentified on the field photographs; i.e., ICE and BAT. Signal ICE was re-identified and relocated by the Washington Office using sextant cuts obtained by the field party. Signal BAT was re-identified and relocated using resection methods, by ship personnel. ✓

G. SHORELINE

Shoreline for the boat sheet was obtained from Preliminary Manuscripts Numbers T-12672 and T-12673, 1:10,000 scale and from T-12722 through T-12724, 1:5,000 scale. ✓

The shoreline for the smooth sheet ~~is to be~~ ^{was} obtained from the advance manuscripts of the same numbers and ~~will be~~ ^{was} applied at Pacific Marine Center. In some areas the low water line could not be defined because of the steeply sloping shore. ✓

H. CROSSLINES

Crosslines were run to the extent of approximately 10%. Some discrepancies were noted on the boat sheet and are attributed to the steep slopes in near shore areas, and poor control on the boat sheet. These discrepancies should be resolved on the smooth sheet without any difficulty since the control problems encountered in the field have now been rectified.

Crossings
o.k. on
Smooth
sheet.

I. JUNCTIONS

Junction is made with Contemporary Survey H-8822 (HO-5-2-65). This junction is adequate and complete.

Junction
will be
discussed
during review
of H-8822.

J. COMPARISON WITH PRIOR SURVEYS

Item two of the presurvey review, a 13-fathom sounding in surrounding depths of 150 fathoms, was investigated and verified. This sounding should be retained for charting purposes. No! See Review Par. 7A.

Comparison with prior surveys H-5262a, 5262b and 2761 indicate the depths at the head of the bay have generally increased and the contours have changed considerably. To the east and southeast of the seamount the depths are generally shoaler. All of this is attributed to the Good Friday Earthquake of 1964. The submerged area at the head of the bay, which is very steep, apparently sloughed off into the bay's lower reaches and possibly collected in the area to the south and southeast of the seamount.

See
Review
Par. 6

K. COMPARISON WITH THE CHART

A comparison was made with Chart 8529, edition of 14 December 1964, corrected by Notice to Mariners through August 1965. The agreement was good. ✓

The anchorage marker charted at Latitude 60 06 08 N and Longitude 149 23 08 W has been moved to Latitude 60 06 03 N and Longitude 149 22 01 W. ← This marker no longer charted.

L. ADEQUACY OF SURVEY

The survey is considered to be complete and adequate to supercede all prior surveys, and for charting.

See
Review
Par. 6

M. AIDS TO NAVIGATION

There are no floating aids to navigation in the area of the survey. Two fixed aids, Thumb Cove Light and Caines Head Light are in agreement with the Light List and should be retained for charting. ✓

Not shown
on this survey

N. STATISTICS

	<u>HODGSON</u>	<u>MWB#1</u>	<u>LESTER JONES</u>
Positions	1200	1029	13
Miles of Soundings (Nautical)	224.2	89.9	0
Area Surveyed (Square Nautical Miles)		16.0	
Oceanographic Stations	1		
Bottom Samples	11		13

O. MISCELLANEOUS

The seamount was developed using two overlays to the boat sheet. The least depth reported by the PATHFINDER in 1964 was verified and should be retained *no!*

See Review Par. 7A

All hydrography accomplished on sheet H-8822 (HO-5-2-65) east of Longitude 149 25 00 W has been transferred to this sheet for smooth plotting.

All soundings were logged in the same chronological order as the fix positions. All corrections were applied to the sounding tapes for positions 1 through 1192, 2000 to 2090 (tape rolls #1 to #5), and all 3000 positions (tape rolls #8). A separate tape of transducer corrections was logged to correct soundings corresponding to positions 2091 to 2987 (tape rolls #6 and #7).

During the course of the preliminary verification all fix positions that were obviously in error were investigated and corrected by means of pseudo-fixes, using the existing control. All such corrections are noted in colored pencil in the sounding volumes. The corrected positions were logged and position cards were plotted on a separate overlay which was also verified. The corrected positions also include time corrections which were discovered when the soundings were logged. The corrector cards (#2 cards) were hand placed in the proper order in the position card deck and the erroneous cards were removed.

P. RECOMMENDATIONS

It is recommended that the Seward Radio Station (KIBH) Mast be added to the chart as a landmark.

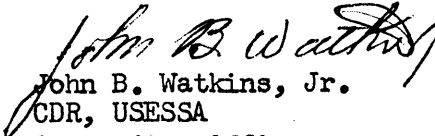
Now CHARTED CHART 8529

Q. REFERENCES TO REPORTS

Submitted under separate cover:

1. Observed Temperatures for Velocity Corrections, Ship HODGSON, 1965.
2. Corrections for Echo Sounders, Ship HODGSON, 1965. ← Not found in C&CS Archives
3. Coast Pilot Report, Ship HODGSON, 1965.
4. Landmarks for Charting, Form 567 (submitted January 1966).

Respectfully submitted,


John B. Watkins, Jr.
CDR, USESSA
Commanding Officer
USC&GSS HODGSON

APPROVAL SHEET

PROJECT OPR-452
SHEET H-8855

SEWARD, ALASKA

The field work on this survey was accomplished under the direct supervision of the Commanding Officer. The boat sheet was given a daily inspection to check for adequacy and accuracy. The survey is considered complete and adequate and no additional field work is considered necessary.

*See
Review
Par. 4*

Signal and position overlay have been plotted and verified but final smooth sheet and sounding overlays have not been plotted at the time of this approval. ✓

John B. Watkins
John B. Watkins, Jr.
CDR, USESSA
Commanding Officer
USC&GSS HODGSON

TIDE NOTE

PROJECT OPR-452

RESURRECTION BAY
SEWARD, ALASKA

REGISTER NUMBER H-8855
FIELD NUMBER HO-10-1-65

Station: SEWARD

Latitude: $60^{\circ} 06' 00''$ N

Longitude: $149^{\circ} 26' 12''$ W

Time Meridian: 150° W

A portable bubbler tide gage at Seward was used for obtaining tidal data for this survey. Hourly heights were scaled and supplied by the Washington Office. MLLW on the staff as provided by Washington was 6.6 feet.

✓

LIST OF SIGNALS

H-8855
HO-10-1-65

<u>NAME</u>	<u>NUMBER</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>SOURCE</u>
ABE ✓	002	60 03 36.42 N	149 26 25.35 W	T-12672
BAT ✓	008	60 01 23.39 N	149 25 27.57 W	T-12672
AND ✓	051	60 04 16.24 N	149 25 59.09 W	SAND 4, 1965
BOB ✓	060	60 05 42.63 N	149 26 34.74 W	T-12722
COP ✓	166	60 07 31.69 N	149 24 10.92 W	T-12723
DAY ✓	109	60 03 01.58 N	149 26 16.97 W	T-12672
DON ✓	165	60 03 35.11 N	149 20 19.81 W	T-12673
EAT ✓	208	60 06 00.10 N	149 21 47.82 W	T-12722
END ✓	251	60 07 32.93 N	149 25 11.40 W	BAY END, 1964
FEZ ✓	229	60 07 30.06 N	149 22 34.52 W	T-12723
FOG ✓	263	60 06 07.88 N	149 26 03.62 W	T-12722
FOX ✓	269	60 05 00.87 N	149 26 26.67 W	T-12722
GAM ✓	305	60 02 53.98 N	149 20 15.18 W	T-12673
HOE ✓	362	60 03 52.81 N	149 26 22.99 W	T-12722
HUD ✓	381	60 07 16.64 N	149 21 58.86 W	T-12724 (Recorded as HAD in record books)
ICE ✓	312	60 05 13.66 N	149 26 29.28 W	T-12722
JIM ✓	435	60 06 27.89 N	149 21 42.33 W	T-12724
JOE ✓	462	60 03 22.87 N	149 20 26.74 W	MIDDLE 2, 1927
KEY ✓	429	60 01 17.48 N	149 20 04.10 W	T-12673
LAX ✓	409	60 04 24.99 N	149 20 24.41 W	T-12673
LEG ✓	423	60 04 40.48 N	149 26 32.10 W	Triangulation 1966 LEG, 1966
LIE ✓	432	60 06 57.73 N	149 25 55.52 W	Triangulation 1966 (Seward East Breakwater Light, 1966)

LIP ✓	436	60 00 27.12 N	149 19 54.81 W	Thumb Cove Light, 1942, 1965
MAN ✓	505	60 07 22.65 N	149 23 51.27 W	T-12723
MAS ✓	508	60 07 28.53 N	149 24 12.77 W	MAST 1965 (Topographic)
MID ✓	531	60 05 29.78 N	149 26 30.74 W	T-12722
NIP ✓	536	60 00 28.65 N	149 24 03.57 W	T-12672
NUB ✓	580	60 01 54.46 N	149 20 02.00 W	T-12673
ODD ✓	611	60 05 56.83 N	149 26 29.27 W	T-12722
OFF ✓	622	60 00 12.71 N	149 23 41.05 W	T-12672
PAL ✓	604	60 05 51.87 N	149 26 33.46 W	T-12722
POT ✓	668	60 06 35.57 N	149 26 01.43 W	T-12722
RED ✓	721	60 06 53.77 N	149 26 19.21 W	Seward Radio Station KVIH Mast, 1965
ROC ✓	761	60 07 15.03 N	149 22 27.97 W	Rock Off Point, 1932
SAG ✓	703	60 02 08.97 N	149 20 06.26 W	T-12673
SHE ✓	732	60 00 50.88 N	149 24 44.39 W	T-12672
STY ✓	789	60 00 29.11 N	149 19 59.90 W	BLUFF 1905, 1965
TAN	805	60 06 15.01 N	149 25 56.17 W	T-12722
VER ✓	827	60 06 29.18 N	149 21 38.53 W	SILVER, 1964
TUB ✓	880	60 04 15.03 N	149 25 59.51 W	T-12672
TUK ✓	884	60 06 54.35 N	149 21 33.08 W	T-12724
WHO ✓	936	60 05 37.67 N	149 21 52.99 W	FORTH, 1965 (Temporary)
WOD	961	60 00 51.50 N	149 19 55.28 W	T-12673 (recorded as WOO - in record books)
YAM ✓	905	60 01 55.23 N	149 26 17.67 W	T-12672
ZIG ✓	933	59 59 32.04 N	149 23 10.53 W	T-12672
ZOO ✓	966	60 07 28.38 N	149 25 24.02 W	T-12723

FIG. 18.

DESCRIPTIVE REPORT DATA RECORD		
PART I SMOOTH SHEET PREPARATION		
	PREPARED BY/OPERATOR	DATE
A. PLOTTER OPERATOR		
B. DISTORTION MARKS PLOTTED		
C. PROJECTION INTERSECTIONS PLOTTED		
D. POINTS OF ELECTRONIC CONTROL ARCS PLOTTED		
E. OVERLAYS PREPARED BY		
1. POSITION NUMBER		
2. EXCESS SOUNDINGS		
3. PRELIMINARY SMOOTH PLOT		
4. LIST OTHERS		
A.		
B.		
F. SOUNDING SELECTION BY		
G. PLOTTER INPUT	PREPARED	
H.	CHECKED	
I. DESCRIPTIVE REPORT ADDENDUMS		
PART II SMOOTH SHEET COMPLETION		
	CARTOGRAPHER	DATE
A. DISTORTION SCALE TICKS IDENTIFIED BY NOTE	ALLAN K. SCHUGERD	JAN. 9, 1968
B. PROJECTION INTERSECTIONS VERIFIED BY	ALLAN K. SCHUGERD	DEC. 11, 1967
C. PROJECTION LINES RULED BY	ALLAN K. SCHUGERD	DEC. 12, 1967
D. ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED		
E. OVERLAYS COMPLETED BY		
1. POSITION NUMBER LEADERS ADDED	ALLAN K. SCHUGERD	DEC. 18, 1967
2. EXCESS SOUNDING OVERLAY COMPARED	ALLAN K. SCHUGERD	OCT., 1967
3. PRELIMINARY SMOOTH PLOTS COMPARED	ALLAN K. SCHUGERD	OCT., 1967
4. OTHERS UTILIZED		
A.		
B.		
F. DESCRIPTIVE REPORT ADDENDUM	ALLAN K. SCHUGERD	DEC. 19, 1967
G. CONTROL STATIONS VERIFIED	ALLAN K. SCHUGERD	JULY, 1967
H. POSITIONS MANUALLY PLOTTED	ALLAN K. SCHUGERD	JULY, 1967
I. MANUAL PLOT VERIFIED		
J. SHORELINE APPLIED	ALLAN K. SCHUGERD	DEC. 13, 1967
K. BOTTOM CHARACTERISTICS ADDED	ALLAN K. SCHUGERD	DEC. 7, 1967
L. NOTES AND DEPTH CURVES ADDED	ALLAN K. SCHUGERD	DEC. 14, 1967

H- 8855

A. Additions and corrections have been furnished the plotter center by the verification unit.

Date _____

Signed _____
Title _____

B. Additions and corrections have been added to the survey records and the final smooth sheet forwarded to the verification unit.

Date _____

Signed _____
Title _____

C. The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the verifier's report).

Date Jan. 8, 1968

Signed *Charles J. Puffin*
Title Chief, Norfolk Hydro.
Processing Branch

D. Smooth sheet and records forwarded to Rockville, Maryland Office.

Date Jan. 9, 1968

TIDE NOTE FOR HYDROGRAPHIC SHEET

May 16, 1967

~~Nautical Chart Division~~ Pacific Marine Center

Plane of reference approved in
~~hydrographic survey for~~

HYDROGRAPHIC SHEET 8855

Locality: Seward, Alaska

Chief of Party: J. B. Watkins, 1965

Plane of reference is mean lower low water

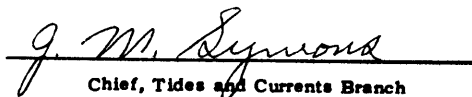
Tide Station Used (Form C&GS-681):

Seward, Alaska

Height of Mean High Water above Plane of Reference is as follows:

9.6 feet

Remarks


Chief, Tides and Currents Branch

TIDE NOTE FOR HYDROGRAPHIC SHEET

September 15, 1967

~~NATIONAL CENTER FOR~~

Atlantic Marine Center

Plane of reference approved in
12 volumes of sounding records for

HYDROGRAPHIC SHEET 8855

Locality: Resurrection Bay, Alaska

Chief of Party: H.E. McCall (1965)

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681):
Seward, Alaska

Height of Mean High Water above Plane of Reference is as follows:
9.6 feet

Remarks


Chief, Tides and Currents Branch

H-8855 - (1965)

INFORMATION FOR FUTURE
PRE-SURVEY REVIEWS

If it were not for the effects of the 1964 Alaskan Earthquake, this area would, in all probability, be quite stable. Some deposition of sediments at the mouths of the entering streams should be expected in the future, however.

Any future survey of the area should include a complete development of the 30-fm. shoal indication in lat. $60^{\circ}03.67$, long. $149^{\circ}25.66$.

Dale E. Westbrook

H-8855 - (1965)

CHANGES TO BE MADE BY PACIFIC MARINE CENTER IN
AUTOMATED RECORDS FOR THIS SURVEY

Duplication of Plotter Cards

1. Pos. 023900, time 142045 Remove extra card
2. Pos. 106300, time 133900 Remove partially punched card

Revise Plotter Cards

1. Pos. 112200, time 150500 Listed as excess. Card should be removed from plotter cards.
2. Pos. 105602, time 132800 Check X, Y coordinates and reduced sounding on plotter card. Computer card O.K.

Additional Excess Soundings - These soundings have been removed from the smooth sheet and should be listed as excess:

<u>SOUNDING NO.</u>	<u>TIME</u>	<u>SOUNDING</u>
023403	140915	00238
027404	152245	00858
079301	152815	01569
114602	154230	00796
226604	104500	00135
239305	152700	00179
242201	095645	00500
246203	112230	00043
248402	125345	00048
249801	134530	00048
261503	092345	00245
273503	135000	00377
273600	135015	00415
278402	152200	00109
281101	162615	00024
286201	100753	00315
286701	102130	00149
290500	132330	00000
372200	131850	00169
387900	104315	00013

Remove From Excess - The following soundings should be removed from the excess list.

<u>SOUNDING NO.</u>	<u>TIME</u>	<u>SOUNDING</u>
023000	140245	01446
041200	111730	00643
118504	100545	01581
242200	095630	00548
251000	140315	00021

Change Soundings - The following soundings should be changed in the computer cards.

<u>SOUNDING NO.</u>	<u>TIME</u>	<u>LOGGING ERRORS</u>		<u>NEW SOUNDING</u>
		<u>ORIGINAL</u>	<u>RAW SOUNDING</u>	
234602	140030	00303		00343
240504	154430	00802		00862

<u>SCANNING ERROR</u>			
081100	084845	01170	01260

RESCANNED FOR CROSSINGS OR DEPTH CURVES

035405	095000	01580	01584
035500	095015	01580	01585
079900	154245	01570	01578
118702	100830	01580	01575
239805	153415	00918	00925
295403	153315	00033	00032

A listing of prior survey soundings to be added to the automated records is filed with the survey records.

FORM C&GS-946
(REV. 11-65)
(PRESC. BY
HYDROGRAPHIC
MANUAL 20-2,
6-64, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. 8855

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		1	
DESCRIPTIVE REPORT		1	OVERLAYS		7	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS / SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1					
VOLUMES	13					
BOXES						
T-SHEET PRINTS (List)						
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey.

PROCESSING ACTIVITY	AMOUNT			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				2180
POSITIONS CHECKED		218	10	
POSITIONS REVISED		52	1	
DEPTH SOUNDINGS REVISED			8	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0	1	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED			1	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		8	2	
FUNCTIONS				
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		12	2	
SPECIAL ADJUSTMENTS			16	← Revised some depth curves
ALL OTHER WORK		387	72 hrs.	
TOTALS		407	92 hrs.	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>Allen H. Schugold</i>	7/17/67		12/19/67	
REVIEW BY <i>Dale C. Westbrook</i>	2/14/68		3/4/68	

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8855

FIELD NO. HD-10-1-65

Alaska, Resurrection Bay, N. of Thumb Cove

SURVEYED: July -- August 1965

SCALE: 1:10,000

PROJECT NO. OPR- 452

SOUNDINGS: Raytheon DE-723
Depth Recorders

CONTROL: Sextant fixes
on shore signals.

Chief of party.....J. B. Watkins, Jr.
 Surveyed by.....J. B. Watkins, Jr.
 A. J. Patrick
 G. C. Chappell

Protracted by.....Gerber Digital Plotter,
 Soundings plotted by.....Gerber Digital Plotter
 Verified by.....A. K. Schugeld (Norfolk)
 Reviewed by.....D. E. Westbrook
 date: March 4, 1968

Inspected by.....R. H. Carstens

1. Description of the Area

This survey covers the northern part of Resurrection Bay, Alaska from Thumb Cove north to Seward. The immediate vicinity of Seward, however, is covered by H-8822 (1965), a 1:5,000 survey.

Resurrection Bay is long, narrow, and relatively deep presenting the general characteristics of a glacial fiord. At the head of the bay is a broad flat alluvial plain probably of glacial origin.

Several small coves indent the shoreline, and numerous small streams enter the bay. Shoaling at the mouths of these streams has resulted from a deposition of sediments. Particularly notable in this regard is the area at the mouth of Tonsina Creek in about lat. 60°03', long. 149°26'.

The bottom throughout the bay is composed of mud, clay, and silt with extensive mud flats bare at low tide marking the head of the bay.

Few dangers are present in this part of the bay except for several rocks close to shore and the mud shoals extending offshore from the stream entrances.

The most prominent submarine feature within the survey limits is a large knoll near the center of the bay (lat. $60^{\circ}02'5''$, long. $149^{\circ}23'$) which rises gradually from depths of more than 100 fathoms to 14 fathoms on its peak. Although a bottom characteristic of soft grey mud was obtained near its summit, this knoll is probably composed of rock overlain with sediments.

The Alaskan Earthquake of March 27, 1964, affected this part of Resurrection Bay to a considerable extent. These changes are discussed in Par. 6, Comparison with Prior Surveys.

2. Control and Shoreline

The control is adequately described in the Descriptive Report.

The shoreline originates with Advance Photogrammetric Manuscripts T-12672, and T-12673 (1:10,000); also, T-12722, T-12723, and T-12724 (1:5,000) all dated 1965.

3. Hydrography

- A. Depths at crossings are in good agreement.
- B. A significant portion of the depth curves could not be adequately drawn. Some depth curves were not appropriately fixed in position because the sounding lines were run parallel to the Shoreline for considerable distances. This is in direct opposition to the rules for hydrography outlined in the Hydrographic Manual. In other areas, no soundings were obtained at all, necessitating the position of the curves to be estimated and inked with dashed lines.

Areas of insufficient hydrography include the vicinities of:

1. lat. $60^{\circ}00'95''$, long. $149^{\circ}24'70''$
2. lat. $60^{\circ}01'62''$, long. $149^{\circ}25'65''$
3. lat. $60^{\circ}02'00''$, long. $149^{\circ}26'20''$
4. lat. $60^{\circ}03'50''$, long. $149^{\circ}26'30''$
5. lat. $60^{\circ}01'85''$, long. $149^{\circ}20'15''$
6. lat. $60^{\circ}02'40''$, long. $149^{\circ}20'15''$

- .C. The development of the bottom configuration and investigation of least depths is considered adequate except as noted above, and in lat. $60^{\circ}03'67''$, long. $149^{\circ}25'66''$ where

additional development should have been run over a 30-fm. shoal indication.

4. Condition of the Survey

The sounding records and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual for Automated Hydrographic Surveys except that an abstract of corrections to echo soundings was not inserted in the Descriptive Report, and no echo sounding report could be found in the Coast and Geodetic Survey Archives.

The automatic plotting of the survey by Gerber Plotter in Seattle was satisfactory. The verification and completion of the smooth sheet in the Atlantic Marine Center was also very good. On a survey such as this, however, where many sounding lines parallel the depth curves, more thought should have been given to placing the curves that were not definitely fixed by hydrography, in a natural manner, and, in general, influencing their position by adjacent curves that were comparatively well fixed.

Since this is the first visually controlled automated survey to be reviewed, an attempt was made to evaluate the quality of automated plotting of visual fixes. Those fixes that were checked appeared to compare favorably with manual plotting. It was necessary to check the plotting on the Mylar overlay since the smooth sheet was found to contain excessive distortion.

The amount of distortion found was a shrinkage totalling 3mm. in the N-S direction and 4.3mm. in the E-W direction, measured on February 23, 1968. This shrinkage may be a characteristic of the paper or possible extreme differences in atmospheric conditions between Seattle and Rockville. (scale of sheet was found correct on May 27, 1968, raining.)

Several swingers and weak fixes were used for control on this survey which required manual adjustment during verification. In an automated system it is more important than ever that strong fixes be observed.

5. Junctions

The junction with H-8822 (1965) on the northwest at Seward will be discussed in the review of that survey. No contemporary survey junctions with the present survey on the south. However, present survey depths are in general harmony with charted depths in this area.

6. Comparison with Prior Surveys

A. H-2761 (1:20,000) 1905

A comparison between the present survey and this prior survey indicated drastic changes in some portions of the area, mostly as result of the 1964 earthquake. A substantial volume of bottom sediments apparently sloughed off into deeper water, leaving depths 20-fms. deeper in the vicinity of lat. $60^{\circ}05'.66$, long. $149^{\circ}22'.19$, and from 5-10 fms. deeper in other portions of the north end of the bay. Most of the sediments displaced were in the vicinity of the area now outlined by the 20-40 fathom depth curves at the head of the bay.

Little change occurred in the area of the spur that extends southward from the north end in lat. $60^{\circ}06'.75$, long. $149^{\circ}23'.60$ because it probably contains a hard core.

The only area that appears to have shoaled on the present survey lies in the southeast portion of the area in about 150 fathoms, where general depths are from 1-5 fathoms shoaler than on the prior survey. It is believed that the displaced sediments were dispersed and evenly distributed on the bottom in this area, and perhaps further to the southward beyond the limits of the present survey.

In other areas, the comparison showed good general agreement between the present and prior survey.

After depth adjustment was made for general bottom subsidence of -3.6 feet determined by tidal observations at Seward after the earthquake, a few soundings and several bottom characteristics were brought forward from the prior survey to supplement the present survey. With these additions, the present survey supersedes the prior survey within the common area.

B. H-4678 (1:10,000) 1927 H-4827 (1:10,000) 1928 H-5262a (1:5,000) 1932 H-5262b (1:5,000) 1932

These surveys only cover some inshore portions of the ^{present} survey area. When compared to H-4678 (1927) and H-4827 (1928), the present survey indicates a sloughing off of sediments at the head of the bay. This is very evident in lat. $60^{\circ}06'.84$, long. $149^{\circ}24'.88$ where a prior 5.5-fm. depth on H-4678 is now about 35-fms. on the present survey.

The mud flats, bare at MLLW, at the head of the bay have receded about 0.25 mile, and the flats at the mouth of Tonsina Creek in about Lat. $60^{\circ}02'9$, long. $149^{\circ}26'0$ have receded about 0.1 mile probably as a result of the general bottom subsidence also caused by the 1964 earthquake.

In other areas, these 1927-28 surveys compare favorably with the present survey.

When compared to H-5262a (1932), the present survey shows a substantial amount of sloughing off of sediments on the order of 15-25 fathoms, also in lat. $60^{\circ}06'84$, long. $149^{\circ}24'88$.

The sediments near the mouth of Fourth of July Creek on H-5262b (1932) appear to have sloughed off in lat. $60^{\circ}05'66$, long. $149^{\circ}22'19$ where a prior 9.75-fm. depth is now about 35-fm. on the present survey.

At the head of Resurrection Bay, H-5262b shows depths of 10-15 fms. shoaler than those on the present survey which compares favorably with the differences previously discussed above for this area.

In areas which are considered unchanged, several soundings have been brought forward from H-4827 (1928) and H-5262a (1932) to supplement the present survey. These soundings have also been adjusted by the -3.6 ft. subsidence observed at Seward.

With the addition of these soundings, the present survey is adequate to supersede the prior surveys with the common area.

7. Comparison with Chart 8529, 6th. ED., May 1, 1967

The charted soundings in the area of the present survey are primarily from the previously discussed prior surveys which require no further consideration. These soundings have been supplemented by several depths from a 1964 post-earthquake reconnaissance by the USC&GS Ship PATHFINDER (BP-65628), and the boat sheet of the present survey.

A. Attention is directed to the following:

1. The 13-fm. sounding charted on the knoll in lat. $60^{\circ}02'48$, long. $149^{\circ}23'14$ is from the above reconnaissance survey and was only partially corrected for true depth. It should be replaced by a 14-fm. sounding shown on the present survey

which is now regarded as the more accurate least depth.

2. The sunken wreck PA presently charted in lat. 60°06'88, long. 149°22'87 is a sunken barge originating with Chart Letter No. 132 of 1967 subsequent to the present survey, and should be retained as charted.
3. The nun buoy "2A" presently charted in lat. 60°06'90, long. 149°24'50 was established subsequent to the present survey and is not shown thereon.
4. The anchorage marker buoy located on the present survey in lat. 60°06'30, long. 149°22'10 was described in Chart Letter No. 132 of 1967 as a yellow, drum-type buoy, but has not been charted prior to inclusion in the Light List.

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

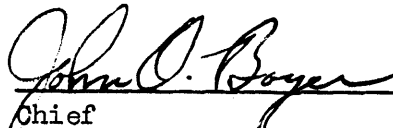
8. Compliance with Instructions


The present survey adequately complies with the Project Instructions except for those deficiencies previously discussed in Par.3, Hydrography.

9. Additional Field Work

With the addition of several soundings from the prior surveys, this survey is considered to be an adequate basic survey, and no additional field work is recommended.

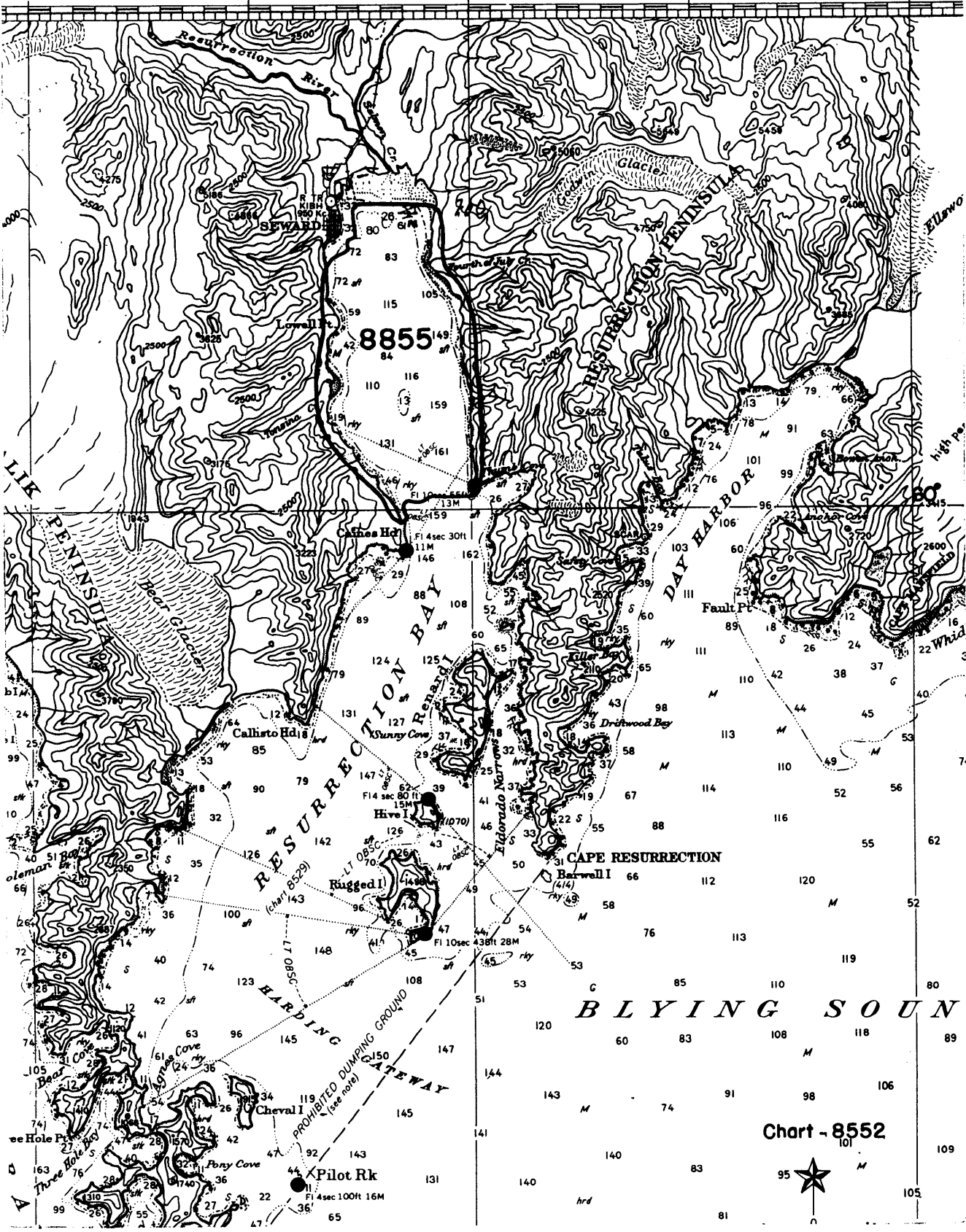
Examined and Approved:


 Chief
 Marine Chart Division


 Associate Director
 Hydrography and Oceanography

J. T. G. 8-19-68

40' 30' 20' 10' 149°



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8552

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
 2. In "Remarks" column cross out words that do not apply.
 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
8528	10-16-68	Maloney	Full Part Before After Verification Review Inspection Signed Via Drawing No.
8529	12-09-68	Chapman	Full Part Before After Verification Review Inspection Signed Via Drawing No. 7, cht 8528, in part.
8552	12-09-68	Chapman	Full Part Before After Verification Review Inspection Signed Via Drawing No. 11, cht 8529.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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