

9221

Diag. Cht. No. 8201-3.

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. DA-10-9-71 Office No. H-9221

LOCALITY

State ALASKA

General locality Summer Strait

Locality Kah Sheets Bay and Approaches

19 71

CHIEF OF PARTY

Cdr. G. C. Saladin

LIBRARY & ARCHIVES

DATE 4-22-74

9221

HYDROGRAPHIC TITLE SHEET

H-9221

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.

DA-10-9-71

State ALASKA

General locality Sumner Strait

Locality Kah Sheets Bay and Approaches

Scale 1:10,000 Date of survey 10 - 29 August, 1971

Instructions dated 2 February 1971 Project No. OPR-448

Vessel Launch DA-2, Launch DA-1, NOAA Ship DAVIDSON

Chief of party Cdr. Gerald C. Saladin

Surveyed by R.C. Arnold, G.L. Miller, F. Paranada

Soundings taken by echo sounder, ~~standard~~ Raytheon DE-723

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Commissioned Officers

Protracted by R. G. Arnold Automated plot by PMC - Gerber Digital Plotter

Soundings penciled by G.L. Miller, F. Paranada

Soundings in fathoms ~~xxxx~~ at ~~xxxx~~ MLLW

REMARKS: Positions Verified by Stanley H. Otsubo

Soundings Verified by Stanley H. Otsubo

Chart
8201
8160
8170

DESCRIPTIVE REPORT

To Accompany

Hydrographic Survey

H-9221 DA-10-9-71

Kah Sheets Bay *and Approaches*

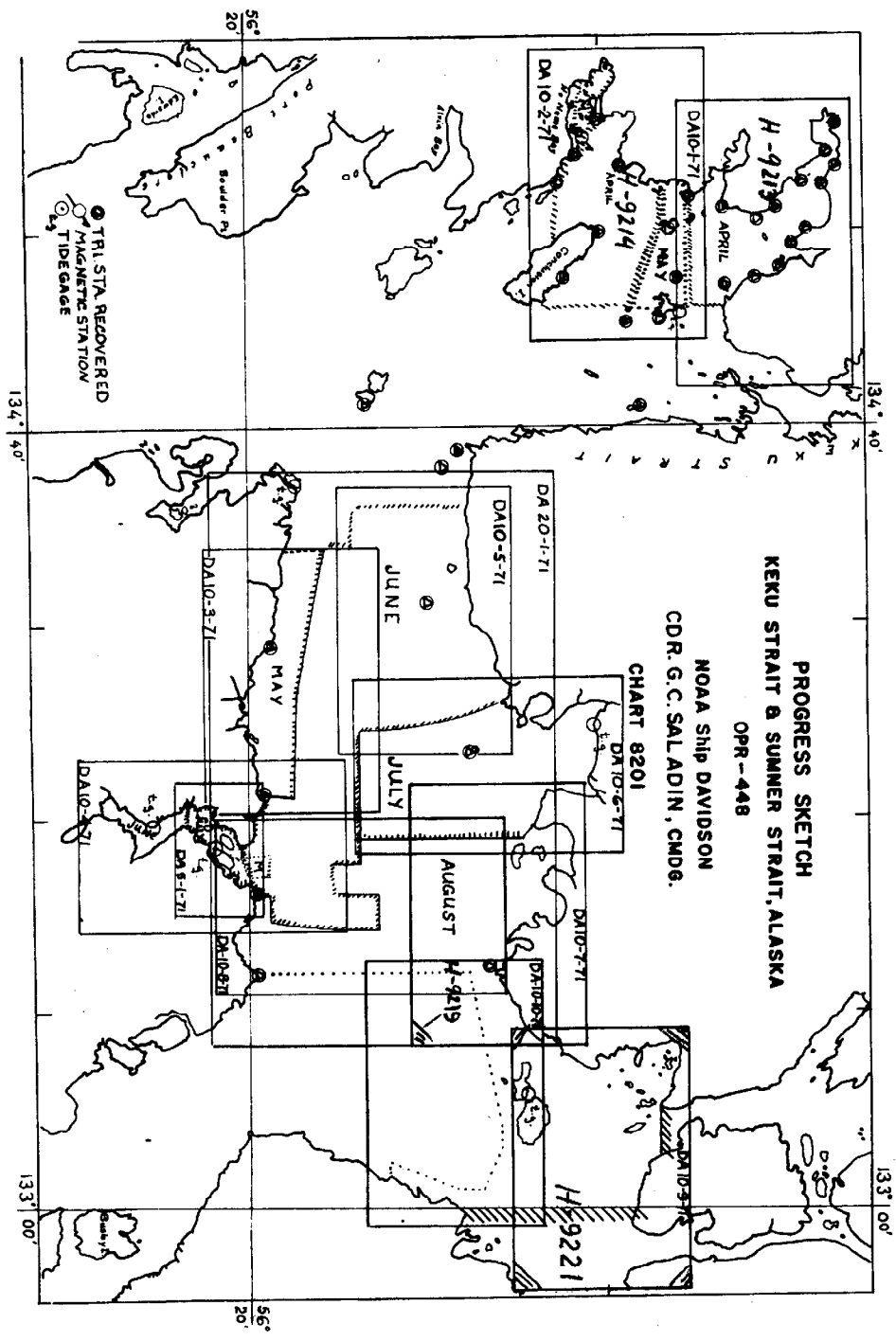
OPR-448

Sumner Strait, Alaska

NOAA Ship DAVIDSON

Gerald C. Saladin
CDR. NOAA

Chief of Party
1971



A. PROJECT

This survey was accomplished according to Project Instructions: OPR-448-DA-71, Keku Strait and Sumner Strait, S.E. Alaska, dated 2 Feb. , 1971.

B. AREA SURVEYED

The survey area covers an area west and northwest of Level Islands between latitudes $56^{\circ} 27.7'N$ and $56^{\circ} 31.5'N$, and longitudes $133^{\circ} 00.0'W$ and $133^{\circ} 08.5'W$. The survey was begun on August 10 and completed on August 29, 1971.

C. SOUNDING VESSEL

Launches DA-2 and DA-1 were used as sounding vessels on this survey:

<u>VESSEL</u>	<u>POSITION NUMBER</u>	<u>COLOR</u>
Launch DA-2		Red
Launch DA-1		Blue

Bottom samples were taken by Launch DA-2 and the NOAA Ship DAVIDSON, and are shown in red and brown respectively. Detached positions taken by skiffs are shown in violet.

D. SOUNDING EQUIPMENT

Raytheon DE-723 fathometers were used by all vessels. Launch DA-2 used fathometer #1276, and Launch DA-1 used fathometer #553. Echo sounder corrections were determined from bar checks taken daily by the Launches, and from Nansen casts taken by the ship. Corrections to echo sounders can be found in a special report titled " Corrections to Echo Sounders, OPR-448-1971." A TC/TI tape was punched to record necessary initial corrections. All soundings are in fathoms and are reduced using predicted tides for Red Bay. Time meridian 105° West was used throughout the survey.

E. SMOOTH SHEET

The smooth sheet will be constructed and plotted by the Processing Division, Pacific Marine Center, Seattle, Washington.

F. CONTROL

Visual three-point fixes were used for control on this survey. Four types of signals were used: triangulation, which were hand plotted using published GP's; Photogrammetric, located on office photographs, plotted on T-sheets, and checked with T-2 cuts; topographic, located by T-2 cuts and sextant cuts, computed either by intersection or resection, and then

hand plotted; hydrographic, located using sextant cuts and computed by resection. Abstracts of the input used to compute signals by intersection and resection are included in the appendix. A complete list of stations is also included in the appendix.

G. SHORELINE

Available shoreline was traced onto the boatsheet by the Ship's commissioned officers from the incomplete manuscripts T-12463 and T-12464. Manuscripts were not available for the entire area above latitude $56^{\circ} 30.0'N$. The shoreline and shoal areas above this latitude were roughly defined by sounding lines and DP's. A more accurate representation of these features should be obtained from low water photography of the area.

Verification of the shoreline on T-12463 and T-12464 was carried out by the Ship's commissioned officers. Hydrographic features were checked by visual inspection, by estimated distances from photo-identifiable objects, by three-point detached positions, or developed on this hydrographic survey sheet. Compilation of the manuscripts was generally good; see "Field Edit Report, OPR-448-1971."

H. CROSSLINES

The percentage of crosslines was 5.8% or 20.75NM compared to 357.2NM. Soundings agree at these crossings.

I. JUNCTIONS

No contemporary surveys were available to junction with.

J. COMPARISON WITH PRIOR SURVEYS

The comparison was made with prior survey H-5017, 1:20,000, 1929. Soundings are generally in good agreement. Seven pre-survey items were investigated:

1. $56^{\circ} 30.95'N$, $133^{\circ} 06.9'W$: Piles. Searched for but not found. Recommend that they be deleted from appropriate charts.
2. $56^{\circ} 30.05'N$, $133^{\circ} 06.2'W$: Piles. Searched for but not found. Recommend that they be deleted from appropriate charts.
3. $56^{\circ} 27.85'N$, $133^{\circ} 06.3'W$: 2 fathom sounding. A deeper sounding of ~~4.8~~ fathoms was obtained in this area.
- 3.2 4. $56^{\circ} 28.7'N$, $133^{\circ} 05.55'W$: 8 fathom sounding. A shoaler sounding of 3.3 fathoms was obtained 100 meters to the south. Another shoal sounding of 2.1 fathoms was obtained 250 meters to the NE. Both shoals were leadlined.
- 2.0 5. $56^{\circ} 28.55'N$, $133^{\circ} 02.8'W$: 7 fathom sounding. A sounding of 7.9 fathoms was obtained in this area.
- 9 6. $56^{\circ} 28.85'N$, $133^{\circ} 02.2'W$: 7 fathom sounding. A sounding of 7.4

fathoms was obtained in this area.

7. $56^{\circ} 28.2'N$, $133^{\circ} 01.25'W$: 7.5 fathom sounding. A sounding of 8.7 fathoms was obtained in this area.

Several other shoal areas were developed to determine extent and least depth.

1. $56^{\circ} 27.93'N$, $133^{\circ} 07.86'W$: Least depth— 2.9 fathoms.
2. $56^{\circ} 28.66'N$, $133^{\circ} 06.96'W$: Least depth— 3.8 fathoms.
3. $56^{\circ} 28.70'N$, $133^{\circ} 06.61'W$: Least depth— 3.1 fathoms.
4. $56^{\circ} 28.85'N$, $133^{\circ} 06.76'W$: Least depth— 1.4 fathoms.
5. $56^{\circ} 28.94'N$, $133^{\circ} 06.42'W$: Least depth— 0.9 fathoms.
6. $56^{\circ} 31.29'N$, $133^{\circ} 04.04'W$: Least depth— 6.2 fathoms.
7. $56^{\circ} 30.12'N$, $133^{\circ} 02.85'W$: Least depth— 23 fathoms.
8. $56^{\circ} 30.68'N$, $133^{\circ} 00.97'W$: Least depth— 4.2 fathoms.
9. $56^{\circ} 30.62'N$, $133^{\circ} 00.55'W$: Least depth— 1.6 fathoms.
10. $56^{\circ} 30.18'N$, $133^{\circ} 00.48'W$: Least depth— 0.0 fathoms.
11. $56^{\circ} 28.54'N$, $133^{\circ} 01.07'W$: Least depth— 13 fathoms.
12. $56^{\circ} 27.97'N$, $133^{\circ} 02.25'W$: Least depth— 2.4 fathoms.

In all the above cases, the areas were adequately developed with the shoalest depth being shown. All developments are on the boatsheet.

K. COMPARISON WITH THE CHART

Comparison was made with C&GS Chart 8160, 7th Edition, 4 July 1970. Soundings generally agree with the exception of several items mentioned in section J. of this report.

L. ADEQUACY OF SURVEY

This survey is considered adequate to supercede prior surveys.

M. AIDS TO NAVIGATION

There is one aid to navigation in the survey area: Daybeacon at $56^{\circ} 30' 08.203''N$, $133^{\circ} 00' 14.526''W$.

N. STATISTICS

The total area surveyed was 18 square statute miles. There are 17 volumes/printouts with this survey. An abstract of positions is included in the appendix.

O. LOGGING

A Climatronics or Milcom Logger was coupled with a Friden Flexowriter to record data while underway in the Launches. An explanation of the logging format used is included in the appendix.

P. RECOMMENDATIONS

There are no recommendations for this survey.

Q. MISCELLANEOUS

Strong currents were encountered throughout the survey area, particularly in the channel between Kupreanof Island and Level Islands, and in the vicinity of White Rock. These currents coupled with considerable wind and sea resulted in crooked sounding lines, and erratic spacing between fixes. Running on one Sea-Fix arc solved the crooked line problem, but spacing remained somewhat erratic.

R. REFERENCES TO REPORTS

Corrections to Echo Sounders, OPR-448-1971
Field Edit Report, OPR-448-1971
Tide Gage Report, OPR-448-1971
Geographic Names Report, OPR-448-1971

Respectfully submitted,

Russell C. Arnold
Russell C. Arnold
LTJG NOAA

Attachments:

Tide Note
Boatsheet Layout
Form No.1 - Parameters to Digital Computing - Visual
List of Signals on DA-10-9-71
List of Manuscripts
Example of logging

Signal Location Data
Abstract of Positions
Approval Sheet

RIA

LIST OF MANUSCRIPTS

T-12463
T-12464

TIDE NOTE

Level Island

Location	Lat. 56° 27. ⁸⁶ N Long, 133° 18. ^{05.76} W
Plane of Reference	MLLW
Time Meridian	105° West
Type of Gage	Portable Bubbler

Hourly height tapes, printouts, copies of Form 362 and a field tide note were forwarded to PMC.

Tide station reports, leveling records, marigrams and Form 362 were transmitted to Chief, Tides Branch with a cover letter requesting the following to be furnished to PMC:

1. Verified copies of Form 362's with values entered in original records gaps.
2. Datum: Value of MLLW on the marigrams.
3. Form 712's for insertion in Descriptive Report.
4. Time and height relationships between gages operated in the area surveyed.
5. Recommended zoning for tide corrections.

GEOGRAPHIC NAMES

Survey No. H-9221

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
BUTTERWORTH ISLAND											1
KAH SHEETS BAY											2
KAH SHEETS ISLAND											3
KUPREANOF ISLAND											4
BIG LEVEL ISLAND											5
LITTLE LEVEL ISLAND											6
LJUNG ISLAND											7
WOEWODSKI ISLAND											8
DUNCAN CANAL											9
SUMNER STRAIT											10
WHITE ROCK											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Approved by:
Chas. E. Harrington
 Staff Geographer
 7 JUNE 1974

LIST OF STATIONS on DA-10-9-71

<u>Signal No.</u>	<u>Origin</u>
901	LAST, 1929
902	NEXT, 1929
903	KAH, 1929
904	BIG, 1929
905	LUNG, 1929
906	FIRST, 1929
907	WHITE, 1886-1916
908	LOUISE, 1915-1916
909	BARES, 1929
910	ISLE, 1929
911	HOPE, 1929
912	SOUTH, 1929
913	BLUNT, 1929
914	NEW, 1929
915	SAW, 1929
916	BAY, 1929
917-926	Vol. 17, Vol. 15
927	T-12463
928	Vol. 17
929-931	T-12463
932-934	Vol. 17

INTERSECTION

INPUT for Signal 924

901	56° 27'	59.019"	133° 08'	41.861"
904	56° 28'	24.233"	133° 05'	16.310"
905	56° 30'	24.043"	133° 03'	59.218"
903	56° 29'	38.317"	133° 07'	00.440"

*Reviewer - file
with printouts*

Angles (measured clockwise from initial)

901-904	85° 12'	01.5"
905-903	29° 03'	17.0"

OUTPUT

56° 30' 30.54 133° 06' 27.33"

INTERSECTION

INPUT for Signal 920

903	56° 29'	38.317"	133° 07'	00.440"
905	56° 30'	24.043"	133° 03'	59.218"
915	56° 31'	00.019"	133° 05'	12.672"
914	56° 31'	05.022"	133° 04'	21.304"

Angles (measured clockwise from initial)

903-905	74° 24'	41"
915-914	284° 20'	48.5"

OUTPUT

56° 31' 11.26" 133° 05' 11.13"

INTERSECTION

INPUT for Signal 919

905	56° 30'	24.043"	133° 03'	59.218"
916	56° 30'	52.338"	133° 07'	09.080"
911	56° 31'	15.532"	133° 02'	30.280"
913	56° 31'	48.214"	133° 05'	01.621"

Angles (measured clockwise from initial)

905-916	315° 34'	00"
911-913	346° 45'	12"

OUTPUT

56° 31' 28.34" 133° 05' 13.28"

INTERSECTION

INPUT for Signal 926

916	56° 30' 52.338"	133° 07' 09.080"
903	56° 29' 38.317"	133° 07' 00.440"
904	56° 28' 24.233"	133° 05' 16.310"
901	56° 27' 59.019"	133° 08' 41.861"

Angles (measured clockwise from initial)

916-903	178° 54' 45.0"
904-901	333° 49' 39.0"

OUTPUT

56° 27' 45.66" 133° 06' 39.0"

INTERSECTION

INPUT for Signal 923

901	56° 27' 59.019"	133° 08' 41.861"
904	56° 28' 24.233"	133° 05' 16.310"
905	56° 30' 24.043"	133° 03' 59.218"
903	56° 29' 38.317"	133° 07' 00.440"

Angles (measured clockwise from initial)

901-904	99° 12' 27.0"
905-903	55° 07' 23.0"

OUTPUT

56° 30' 54.32" 133° 05' 31.79"

INTERSECTION

INPUT for Signal 925

901	56° 27' 59.019"	133° 08' 41.861"
904	56° 28' 24.233"	133° 05' 16.310"
905	56° 30' 24.043"	133° 03' 59.218"
903	56° 29' 38.317"	133° 07' 00.440"

Angles (measured clockwise from initial)

901-904	77° 08' 26"
905-903	25° 25' 43"

OUTPUT

56° 30' 25.62" 133° 07' 00.23"

INTERSECTION

INPUT for Signal 917

916	56° 30' 52.338"	133° 07' 09.080"
903	56° 29' 38.317"	133° 07' 00.440"
916	56° 30' 52.338"	133° 07' 09.080"
904	56° 28' 24.233"	133° 05' 16.310"

Angles (measured clockwise from initial)

916-903	07° 58' 19"
916-904	222° 52' 00"

OUTPUT

56° 31' 27.98"	133° 06' 45.6"
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INTERSECTION

INPUT for Signal 918

905	56° 30' 24.043"	133° 03' 59.218"
916	56° 30' 52.338"	133° 07' 09.080"
914	56° 31' 05.022"	133° 04' 21.304"
915	56° 31' 00.019"	133° 05' 12.672"

Angles (measured clockwise from initial)

905-916	298° 06' 00"
914-915	41° 05' 33"

OUTPUT

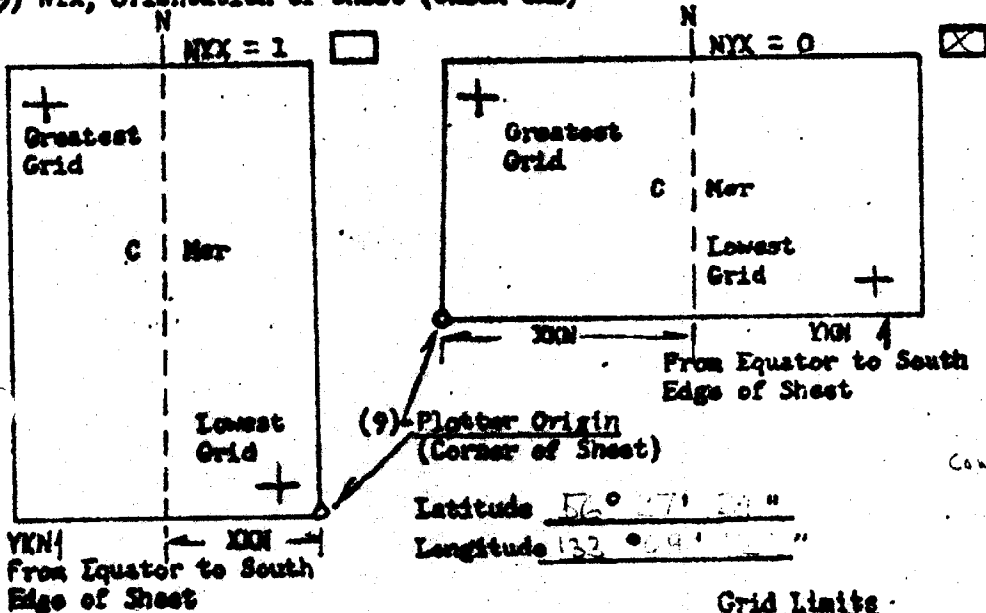
56° 31' 36.16"	133° 05' 54.71"
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ABSTRACT OF POSITIONS

<u>Day No.</u>	<u>Volume</u>	<u>Vessel</u>	<u>Position Nos.</u>
222	1	DA-2	1-252
223	2	DA-2	253-357
224	3	DA-2	358-651
225	4	DA-2	652-787
228	5	DA-2	788-895
229	6 & 7	DA-2	896- 1174
230	8	DA-2	1175-1356
232	9	DA-2	1357-1701
235	10	DA-1	4702-4941
236	11	DA-1	4942-5347
237	12	DA-1	5348-5656
238	13	DA-2	1702-1893
239	14 & 15	DA-2	1894-1944 6000-6034
239	16	DAVIDSON	6050-6100

PARAMETERS FOR DIGITAL COMPUTING
ELECTRONIC PROJECTION

- (1) Project No. 448 (4) Requested by CDR Roy E MOSE
 (2) H No. _____ (5) Ship or Office DAVIDSON
 (3) Field No. "R" (6) Date Required ASAP
 (7) Visual Pt. (0) or Mathews (1) (8) Electronic (fill out form 3)
 (10) XKN (SP 5) Distance from CMER to East Edge (NYX = 1) or West Edge (NYX = 0). (Origin) 6,884,433 Meters
 (11) YKN (SP 241) Distance from Equator to South Edge of Sheet. (Origin) 6,259,197.647 Meters
 (12) Central Meridian 133° 02' 30"
 (13) Survey Scale 1:10,000
 (14) i) Size of Sheet (Check one) 36x60 42x60
 (15) NYX, Orientation of sheet (Check one)



Completed by WKT
by

- Grid Limits**
- (16) Greatest Latitude 56° 32' 00" (Projection Line Interval Page 4 Hydro Manual)
 (17) Lowest Latitude 56° 27' 30"
 (18) Difference 4' 30" (19) _____
 (20) 7 YSN
 (21) Greatest Longitude 132° 04' 00"
 (22) Lowest Longitude 132° 04' 00" (24) 130"
 (23) Difference 18' 00" (25) 26 XSN

SINGLE INDICATOR

POSITION-SOUNDING TAPE

<u>Time</u>	<u>Ind</u>	<u>Sndg</u>	<u>Pos</u> <u>No.</u>	<u>Day</u>	<u>LA</u>	<u>RA</u>	<u>LO</u>	<u>CO</u>	<u>RO</u>
080030	3	0018	1313	101	078560	056780	0201	203	204
080045	3	0024							
080100	3	0048							
080115	3	0059							
080130	3	0208	1314	101	098540	059300	0202	203	204

Time Hour, min, sec.

Ind Indicator: 0=Ft. & whole units
1=Ft. & units & tenths
2=FM. & whole units
3=FM. & units & tenths
4=Meters & whole units
5=Meters & units & tenths

Sndg Depth in feet, fathoms or meters

Pos No. Position number

Day Julian day number

LA Left angle

RA Right angle

LO Left object

CO Center object

RO Right object

APPROVAL SHEET

Hydrographic Survey

DA-10-9-71

H-9221

OPR-448

Kah Sheets Bay, Sumner Strait

Southeast Alaska

The field work on this survey was accomplished under my supervision.
Frequent inspections were made of the boatsheet and other records.



Gerald C. Saladin
CDR. NOAA
Commanding Officer
NOAA Ship DAVIDSON

Signal 921

NUMBER

Three Point Resection

Program 009

INPUT

Lat. Left Sta.

925 56° 30' 25" 620

Long. Left Sta.

133° 07' 00" 230

Lat. Center Sta.

918 56° 31' 36" 150

Long. Center Sta.

133° 05' 54" 710

Lat. Right Sta.

919 56° 31' 28" 340

Long. Right Sta.

133° 05' 13" 280

Left Angle

105° 11' 00" 000

Right Angle

83° 20' 00" 000

OUTPUT

Lat. Resection Sta.

56° 31' 18.74" 000

Long. Resection Sta.

133° 05' 24" 240

Signal 922

NUMBER

THREE POINT RESECTION

Program 009

INPUT

Lat. Left Sta.

904 56° 28' 24" 233

Long. Left Sta.

133° 05' 16" 310

Lat. Center Sta.

903 56° 29' 38" 317

Long. Center Sta.

133° 07' 00" 440

Lat. Right Sta.

917 56° 31' 27" 980

Long. Right Sta.

133° 06' 45" 600

Left Angle

32° 25' 00" 000

Right Angle

95° 08' 00" 000

OUTPUT

Lat. Resection Sta.

56° 31' 03" 620

Long. Resection Sta.

133° 05' 38" 220

Signal 932
Three Point Resection
Program 009
INPUT

NUMBER

Lat. Left Sta.

905 56° 30' 24" 043

Long. Left Sta.

133° 03' 59" 218

Lat. Center Sta.

Uichnefski
Rock Light 56° 26' 19" 428

Long. Center Sta.

133° 00' 49" 607

Lat. Right Sta.

908 56° 27' 23" 208

Long. Right Sta.

133° 03' 42" 416

Left Angle

144° 00' 10" 000

Right Angle

86° 29' 44" 000

OUTPUT

Lat. Resection Sta.

56° 27' 40" 600

Long. Resection Sta.

133° 03' 14" 280

Signal 933

THREE POINT RESECTION
Program 009
INPUT

NUMBER

Lat. Left Sta.

907 56° 28' 30" 925

Long. Left Sta.

133° 01' 50" 115

Lat. Center Sta.

909 56° 30' 22" 166

Long. Center Sta.

133° 01' 04" 668

Lat. Right Sta.

905 56° 30' 24" 043

Long. Right Sta.

133° 03' 59" 218

Left Angle

23° 09' 12" 500

Right Angle

34° 07' 56" 000

OUTPUT

Lat. Resection Sta.

56° 30' 50" 700

Long. Resection Sta.

133° 00' 15" 310

Signal 934

Three Point Resection
Program 009

INPUT

*file with
prints*

NUMBER

Lat. Left Sta.

906 56° 30' 40" 429

Lat. Center Sta.

909 56° 30' 22" 166

Lat. Right Sta.

905 56° 30' 24" 043

Left Angle

64° 08' 44" 500

Lat. Resection Sta.

56° 30' 56" 960

Long. Left Sta.

132° 39' 24" 760

Long. Center Sta.

133° 01' 04" 668

Long. Right Sta.

133° 03' 59" 218

Right Angle

80° 48' 38" 000

Long. Resection Sta.

133° 01' 16" 810

OUTPUT

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H 9221

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p>Note: The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>	X		<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED.</p>		X
<p>2. Findings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>	X		<p>Part IV - VOLUMES</p> <p>11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None</p>	X	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	X				
<p>Part II - SHORELINE AND SIGNALS</p> <p>4. Source of shoreline signals Remarks Required: -- List all surveys</p> <p>a. Give earliest and latest dates of photographs July '66 & June '72 T-1 3050 & T-1 3051</p> <p>b. Field inspection date</p> <p>c. Field Edit date October '72 Reviewed-Unreviewed</p>		X	<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features</p>	X	
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	X				
<p>6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>	X				
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>	X		<p>Part V - PROTRACTING</p> <p>13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	X	
<p>Part III - JUNCTIONS</p> <p>Note: Make a cursory comparison preliminary to taking soundings in area of overlap.</p> <p>8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None</p>		X	<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>	X	
<p>9. The notation in slanted lettering "JOINS H---- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>			<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>	X	

V - PROTRACTING (Continued)		CL	R	Part VIII - AIDS TO NAVIGATION		CL	R
The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable reploting or adjustments.		X		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.			X
The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.		X		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None		X	
VI - SOUNDINGS All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None		X		Part IX - BOATSHEET 28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None		X	
Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.		X		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.		X	
The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None		X		Part X - GENERAL 30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None		X	
The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None		X		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None		X	
The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.		X		32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None		X	
VII - CURVES The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected. N. Lestenkof		X		33. The bottom characteristics are adequately shown. Remarks Required: -- None		X	
The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None		X		Part XI - NOTES TO THE REVIEWER 34. Unresolved discrepancies and questionable soundings.		X	
Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.		X		35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		X	
				36. Supplemental information.			X
Certified by						Date	
Stanley H. Otsubo						12 April 1974	

VERIFIER'S REPORT

H-9221

OPR-448

DA-10-9-71

This sheet was constructed and plotted at Pacific Marine Center, Seattle, Washington. Information relating to this will be noted under the heading by the number and letter as on the Verifier's Report, C&GS Form 946A.

PART II SHORELINE AND SIGNALS

4. Advance Manuscripts T-13050 and T-13051 were used to transfer Smooth Sheet Shoreline. Advance Manuscripts T-12463 and T-12464 were not available when this smooth sheet was completed, 12 April 1974.

The shoreline on the western edge of the sheet from Latitude $56^{\circ} 28' 00''$ northward to Latitude $56^{\circ} 30' 00''$ was mistakenly inked. This is to note that Manuscript (T-12463) for this portion ordinarily would have only been in pencil.

PART III JUNCTIONS

8. Due to the differing phase of verification between this survey and H-9268 (1971) DA-10-10-71, junctional verification was not possible.

PART VIII AIDS TO NAVIGATION

26. Foremost Rock Daybeacon is a red and white checkered daymark on a pole.

PART XI NOTES TO THE REVIEWER

36. In the numerous cases where the reef limits as delineated on the boat sheet didn't match the advance manuscripts, the reef limits were drawn in pencil or blue line ink. This applies to the area north of $51^{\circ} 30' 00''$ latitude.

As noted in Part II Shoreline and Signals, the manuscripts south of $51^{\circ} 30' 00''$ on this sheet were field-edited but the advance manuscripts are not available at the time of smooth sheet processing. The Coastal Mapping Division reports that the field edit for T-12463 and T-12464 has not been received. A search at PMC did not locate the missing data. This shoreline has not been inked except for the western edge of the sheet as previously noted.

Respectfully submitted,

Stanley H. Otsubo

Stanley H. Otsubo
Cartographic Technician

S I G N A L P L O T T E R C A R D S

H-NO.		LATITUDE	LONGITUDE	X	Y	X
09221	901	71 56275903	133084187	00328	01922	901
09221	902	71 56284245	133074452	01360	03330	902
09221	903	71 56293831	133070047	02154	05144	903
09221	904	71 56282425	133051630	04024	02737	904
09221	905	71 56302405	133035922	05410	06627	905
09221	906	71 56304041	132592479	10338	07159	906
09221	907	71 56283091	133015012	07729	02953	907
09221	908	71 56272321	133034239	05711	00754	908
09221	909	71 56302218	133010468	08545	06566	909
09221	910	71 56305344	133015187	07697	07581	910
09221	911	71 56311552	133023030	07007	08298	911
09221	912	71 56320039	133035751	05442	09755	912
09221	913	71 56314820	133050164	04291	09360	913
09221	914	71 56310501	133042129	05015	07957	914
09221	915	71 56310003	133051269	04092	07796	915
09221	916	71 56305234	133070906	02002	07548	916
09221	917	71 56312797	133064562	02424	08705	917
09221	918	71 56313614	133055475	03338	08969	918
09221	919	71 56312835	133051328	04082	08716	919
09221	920	71 56311125	133051111	04120	08160	920
09221	921	71 56311875	133053427	03705	08404	921
09221	922	71 56310362	133053825	03633	07913	922
09221	923	71 56305431	133053181	03748	07610	923
09221	924	71 56303055	133062736	02750	06840	924
09221	925	71 56302561	133070023	02160	06680	925
09221	926	71 56274565	133064345	02456	01485	926
09221	927	71 56273925	133063387	02628	01277	927
09221	928	71 56274976	133061285	03006	01618	928
09221	929	71 56274064	133060928	03070	01322	929
09221	930	71 56274681	133054678	03475	01522	930
09221	931	71 56274995	133055752	03282	01624	931
09221	932	71 56274060	133031428	06216	01319	932
09221	933	71 56305069	133001532	09431	07492	933
09221	934	71 56305697	133011684	08326	07696	934
09221	999 (Tide station)	71 56275124	133055787	03276	01666	999

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY 8/29/72

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): Level Island

Period: July 28 - September 3, 1971

HYDROGRAPHIC SHEET H-9221

OPR 448

Locality: Sumner Strait

Plane of reference (mean lower low water)= 6.1
which is 6.1 feet on tide staff.

Height of Mean High Water above Plane of Reference is 13.7 ft.

Remarks: Hourly heights for August 20, 1971, August 23, 1971
have been inferred from Ketchikan and they are listed on the
printout. (232) (235)

Robert A. Cummins
Chief, Tides Branch

TABLES OF CORRECTIONS TO ECHO SOUNDERS FOR OPR 448 1971

VELOCITY TABLES NUMBERED 1 - 26 FOR SURVEYS H-9213 THROUGH H-9223

SURVEY REG. NO.	FIELD NO.	VEL. TABLE NO.
H-9213	DA 10-1-71	01, 02, 03, 04
9214	10-2-71	01, 05, 06, 07, 08
9215	10-3-71	01, 11, 12
9216	10-4-71	01, 13, 14
9217	10-5-71	01, 14, 15
9218	10-6-71	17, 18, 19
9219	10-7-71	20
9220	10-8-71	21, 22
9221	10-9-71	23, 24
	10-10-71	25, 26
9222	05-1-71	01, 09, 10
9223	20-1-71	01

ALL CORRECTORS IN FATHOMS

H-9221 Velocity Tables

0031 00 0002 0023 000 0 000000 000000
0053 00 0003
0070 00 0004
0086 00 0005
0099 00 0006
0290 00 0007
0460 00 0008
0620 00 0009
078 00 0010
0960 00 0011
1250 00 0012
3000 00 0013
0070 00 0004 0024 000 0 000000 000000
0065 00 0005
0099 00 0006
0290 00 0007
0460 00 0008
0620 00 0009
0780 00 0010
0960 00 0011
1250 00 0012
3000 00 0013

- .3 corrector added
to each entry in this
table. Correctors shown
are correct. (Depth
correction was included in
both the velocity & TRK
for this launch.)

DA 10-9-71
 CTR. 448 AREA SUMNER STRAIT
 VE. _____
 NO. 222-239

 TYPE OF FILE T1
 VOLUME _____

HL

313 222 1971
 083030 01 0000 0024 222 1 000000 000000
 152915 01 0000
 131700 01 0000 0024 223 1 000000 000000
 144745 01 0001
 153520 01 0000
~~084145 01 0000 0024 224~~ **COT**
 084145 01 0000 0024 224 1 000000 000000
 154500 01 0000
 084500 01 0000 0027 225 1 000000 000000
 125600 01 1001
 130400 01 0000
 150120 01 0000
 100330 01 0000 0024 228 1 000000 000000
 153745 01 0000
 085700 01 0000 0024 229 1 000000 000000
 153130 01 0000
 090500 01 0000 0024 230 1 000000 000000
 151645 01 0000

11/1/71 2
12/1/71
1/1/72

12/2

160815 01 1001

161015 01 1002

162115 01 1003

082315 01 0000 0024 236 1 000000 000000

155700 01 0000

082300 01 0000 0024 239 1 000000 000000

161400 01 0000

094430 01 0000 0023 235 1 000000 000000

160015 01 0000

081100 01 0000 0023 236 1 000000 000000

160915 01 0000

082315 01 0000 0023 237 1 000000 000000

160430 01 0000

Handwritten mark

APPROVAL SHEET

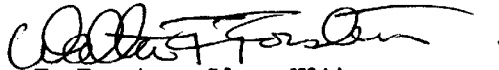
The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's Report)

Examined and approved,



James S. Green
Supervisory Cartographic Technician

Approved and forwarded,



Walter F. Forster, Cdr., NOAA
Chief, Processing Division
Pacific Marine Center

