

9081

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-5-5-69 Office No. H-9081

LOCALITY

State Alaska

General locality Keku Strait

Locality Eagle Island to Devils Elbow

1969

CHIEF OF PARTY

R. E. Moses

LIBRARY & ARCHIVES

DATE 8-6-71

USCOMM-DC 37022-P66

9081

HYDROGRAPHIC TITLE SHEET

H-9081

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-5-5-69

State Alaska

General locality ~~Southeast Alaska~~ Keku Strait

Locality ~~Keku Strait~~ Eagle Island to Devils Elbow

Scale 1:5,000

Date of survey 25 July to 26 August 1969

Instructions dated 10 March 1969

Project No. OPR-448

Vessel Launch I (DA-1), RAINIER-4, 17' Whaler

Chief of party CDR Ray E. Moses

Surveyed by G.H. Endrud, B.W. Fisher, E.M. Gelb

Soundings taken by echo sounder, ~~and~~ ~~Raytheon~~ Raytheon DE-723: Ser.No. 214,553,919,

Graphic record scaled by Ship's personnel

12 76, 1284

Graphic record checked by Ship's personnel

Protracted by G.H. Endrud, B.W. Fisher, E.M. Gelb

verified

Automated plot by _____

Soundings ~~checked~~ by Clarence E. Lehman

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

REMARKS:

Applied to slide 8-17-71

8701

8272

A. PROJECT

This survey was accomplished according to Project Instructions: OPR-448, KEKU STRAIT, SOUTHEAST ALASKA, dated 10 March 1969 and Change No. 1: Amendment to Instructions, dated 4 April 1969.

B. AREA SURVEYED

The survey covers an area, centered around Eagle Island, between the latitudes: 56°36'15"N and 56°38'30"N, and longitudes: 133°44'30"W and 133°38'15"W. Work was accomplished between 25 July and 26 August 1969. The survey junctions with contemporary survey ~~DA-5-4-69~~(H-9080). (1969)

C. SOUNDING VESSEL

The following vessels were used to obtain soundings on this survey:

Launch I (DA-1)	Green
RA-4	Red
17' Whaler	Blue

Launch RA-4 was on loan from the Ship RAINIER for the season. A summary of each vessel's work by position numbers is attached. Bottom samples were taken by Launch I and RA-4.

D. SOUNDING EQUIPMENT

Raytheon DE-723 fathometers were used:

Launch I	#919, #1276
RA-4	#214
17' Whaler	#553, #919, #1284

Echo sounder corrections were determined from bar checks taken daily by the launches. Launch fathometers were initial- ed at one foot and the whaler fathometer was initialed at two feet. The following initials, however, were assumed in reducing the bar check data: Launch I, 1.3; RA-4, 1.0; and 17' Whaler, 1.7. Differences between actual and assumed initial values are compensated for with initial corrections

(TC/TT tape). All soundings are in feet. Abstracts of Modified Velocity Corrections and Initial Corrections are attached. No draft corrections are necessary.

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 in this survey. ✓ There were three types of visual signals used: triangulation signals, photogrammetric signals, and hydrographic signals. Triangulation signals were machine plotted on the boat sheet; Photogrammetric signals were located by three-ray radial plot from the office photographs; Hydrographic signals were cut in with sextant angles. An abstract of signals and manuscripts is included in the appendix.

G. SHORELINE

Shoreline and shoal area outlines were traced onto the boat sheet from the photo manuscripts (See appendix) by ship's officers. Manuscript field edit was done by ship's officers and is covered by "Field Edit Report: OPR-448, Keku Strait, Southeast Alaska, 1969." Compilation of the manuscripts is good. There is some discrepancy with the high waterline in the area of Devil's Elbow. Fixes have been taken to establish the MHWL in this area. The low water line is defined by the soundings. ✓

H. CROSSLINES

The percentage of crosslines run was 5.3% (5.0 miles). Agreement at crossings is good. ✓

I. JUNCTIONS

Junction is made with contemporary survey ~~DA-5-4-69~~(H-9080);
There is good agreement at the junction. (1969) ✓

J. COMPARISON WITH PRIOR SURVEYS

Comparison with surveys H-4764, H-4764a, H-4764b is very good. The Pre-Survey Review called for the verification of two dolphins in the vicinity of Lat. $56^{\circ}36.8'N$ and Long. $133^{\circ}40.7'W$, and four piles in Devil's Elbow which were reported by the Corps of Engineers. Only one pile (bare 1/2 ft. @ 1014, $105^{\circ}W$, 7/29/69) was found at Lat. $56^{\circ}37.96'N$, Long. $133^{\circ}40.74'W$. A number of dash-encircled unnumbered items indicating inadequately developed features are shown on the Pre-Survey Review. Each of these areas was developed and an abstract of these developments is given on page 4. ✓

K. COMPARISON WITH THE CHART

Comparison with C&GS #8272, 3rd edition, 17 October 1966, is generally good. Controlling depths in the channels compare well. All of the pre-survey items are shown on this chart. A comparison of chart depths and survey depths is shown under item J. ✓

A shoal area at Lat. $56^{\circ}37'26''N$, Long. $133^{\circ}40'49''W$ with a least depth of 13.1 feet was found and should be added to the chart. A rock, submerged two(³2) feet below MLLW, at Lat. $56^{\circ}37'54''N$, Long. $133^{\circ}40'55.5''W$ should be added to the chart. Only one pile as is described in item J was found. A detailed field edit was made of the manuscripts for this survey; Obstructions are noted on the boat sheet and recorded in Volumes I, III, & IV.

L. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys. ✓

ABSTRACT OF PRE-SURVEY DEVELOPMENT

Lat.	Long.	Pre-Survey*	This Survey*	Remarks
56°38'02"	133°41'54"	4	4.9 ³⁰	Least depth on development. 896-897 (Pos. #)
56°38'05"	133°41'53" ⁽⁴⁸⁾	9	7.4	NE end of above shoal. (pos. 911) ^{dp}
56°38'08"	133°41'52" ⁽⁵¹⁾	17	24.517	There is a "15" 50m. NE.
56°38'15"	133°41'53" ✓	15	17.415	There is a "11.1" 20m. N.
56°38'14"	133°41'33" ✓	6	-	See DA-5-4-69
56°38'15"	133°41'36" ✓	6	-	See DA-5-4-69
56°38'14"	133°41'40" ✓	6	-	See DA-5-4-69
56°38'11"	133°41'37" ✓	6	None	(3 rocks from tops) Nearby Shoal, but no significant rks.
56°38'13"	133°41'18" ✓	6	13.0	There is a "5.8" 20m. NW (95101)
56°38'10.5	133°41'09" ✓	3	-	Looks good; Falls on slope (1707ft) near shoreline. 5ft shoal 30m. N. (pos. 92801)
56°38'10.5	133°41'06"	6.5	4.7 ✓	Least depth. pos. # 94204
56°38'10.5	133°40'58"	4	5.3	Least depth. pos. # 94801 & 617301 @ 5 ft.
56°38'10.5	133°41'03" ^(2 1/2)	5 (6)	6.8	Least depth. pos. # 3607 @ 5.7 & 6177 @ 6.8
56°38'09.5	133°41'02.5	5.5	6.2	Least depth. pos. # 9602 @ 6.7 ft, 607002 @ 7.6 ft (351901 @ 6)
56°38'07.5	133°40'58" ⁽⁶⁰⁷⁶⁰²⁾	8.5	9.76	Least depth. pos. # 607902 @ 9.6 ft.
56°38'06"	133°41'00" ⁽⁶⁰⁷⁸⁰³⁾	5	-	Looks good; Falls between 3.8 and 5.6 depths. (or betw. 248 platform)
56°38'06"	133°40'56" ^{pos. # 616700}	10	15.3	There are much shoaler depths to both sides of this endg.
56°37'54"	133°40'55.5" ^{pos. # 5007}	6	23	A rock: 23 ft. below MLLW.
56°37'53"	133°40'51" ^{pos. # 6191}	10	12.8	Looks good. 6194 @ 11.8 & 601402 @ 11.8
56°37'50"	133°40'58" ^{pos. # 186-187 @ 15.1 & 6182/6183 (618201 @ 13 ft)}	14	-	Looks good; Located near slope to shoreline. Betw. 15 & 13 ft.
56°37'47.5	133°40'56"	17	12 & 16 ft.	Looks good; Falls on slope.
56°37'27"	133°40'37" ^{25103 @ 29}	13	7.9	Least depth. # 6232 @ 8.5 (251-252)
56°37'26"	133°40'49" ^{1970 chart @ -12 ft.}	13.1	13.1	Not shown on chart. (25203 @ 13.1)
56°37'06"	133°40'52"	17	19 24.7 21	Least depth. Betw. 19 & 21 on S. Sheet (17 ft SW top)
56°37'00"	133°40'55"	9	14 17.9 16	Least depth. pos. 4147, pos. # 4145 @ 15 ft.
56°37'01.5	133°41'06" ^{pos. # 407}	1	3 5.2	Least depth. N. end of Shoal, S. end @ 5 ft.
56°36'49"	133°41'00" ^{pos. # 45303}	5	6 6.90	Least depth. Sm. shoal E of East Channel
56°36'37.5	133°40'53.5	1	-	Appears to be out of position; There is a shoal 50 m. east of this position.
56°36'55"	133°41'00" ^{pos. # 6252}	6	9.3	Looks good--edge of shoal area.

additional Least depth of 6 ft 75m N. of the above (6 ft shoal enclosing 3 (6 ft))

- * The listed depths are given in feet referred to MLLW.
 Depths have been reduced with the following correctors:
- velocity corrections
 - initial corrections
 - tide corrections (Devil's Elbow)

M. AIDS TO NAVIGATION

There are seven(7) daybeacons on this survey: ✓

<u>Lat.</u>	<u>Long.</u>	<u>Charting Name</u>	<u>Description</u>
56°36'32.4"	133°40'59.0"	W "11"	Daybeacon #11 (white)
56°36'41.7"	133°40'54.0"	R "12"	Daybeacon #12 (red)
56°37'13.9"	133°40'49.6"	W "13"	Daybeacon #13 (white)
56°38'05.3"	133°41'02.7"	W "15"	Daybeacon #15 (white)
56°38'09.4"	133°41'08.8"	W "17"	Daybeacon #17 (white)
56°38'11.0"	133°41'34.3"	W "19"	Daybeacon #19 (white)
56°38'15.4"	133°41'59.0"	R "20"	Daybeacon #20 (red)

The aids adequately serve the purpose for which they were established. For further information the reader is referred to Landmarks Report: OPR-448.

N. STATISTICS

	<u>No. Positions</u>	<u>Nautical Miles Sounding Lines</u>	<u>Bottom Samples</u>
Launch I	103	3.0	12
Rainier IV	1121	53.3	10
17' Whaler	1076	37.7	0
Field Edit	289	0	0
	<u>2589</u>		

 ✓

The total area surveyed is 1.2 square nautical miles. There are fifteen(15) volumes with this survey. Volume I includes the bottom samples and signal cuts. Field Edit work is included in volumes I, III, and IV.

One tide gage was installed and maintained near Devil's Elbow for the reduction of soundings on the smooth plot. Soundings on the boat sheet were reduced with predicted tides based on Beck Island, Alaska. Time meridian 105°W was used for the entire survey. For further information the reader is referred to the attached tide note.

There are seven(7) development overlays accompanying the boat sheet.

O. LOGGING

The HUL(BCD Code)/Friden Flexowriter logging system was used with this survey. A "dual indicator" format is used which combines both the sounding tape and position tape into one ✓

"position and sounding tape." An example and explanation of this format are included in the appendix. Separate position and sounding tapes have been made for minus soundings and zero soundings.

P. RECOMMENDATIONS

There are no recommendations for this survey. ✓

Q. REFERENCES TO REPORTS

Corrections to Echo Soundings OPR-448
(To be forwarded with this report)

Field Edit Report OPR-448
(Forwarded to C14, 3 October 1969, Transmittal
letter no. DA-71-69)

Landmarks Report OPR-448
(To be forwarded with this report)

Respectfully submitted

Bruce W. Fisher

Bruce W. Fisher
LTJG USESSA

ATTACHMENTS:

Tide Notes
Geographic Name List
Modified Velocity Corrections
Initial Corrections
Boat Sheet Layout
Form #1 - Parameters for Digital Computing
Development Overlays(copies)
List of Manuscripts
List of Stations on DA-5-5-69
List of Obstructions
Position-Sounding Tape
Abstract of Positions
Approval Sheet

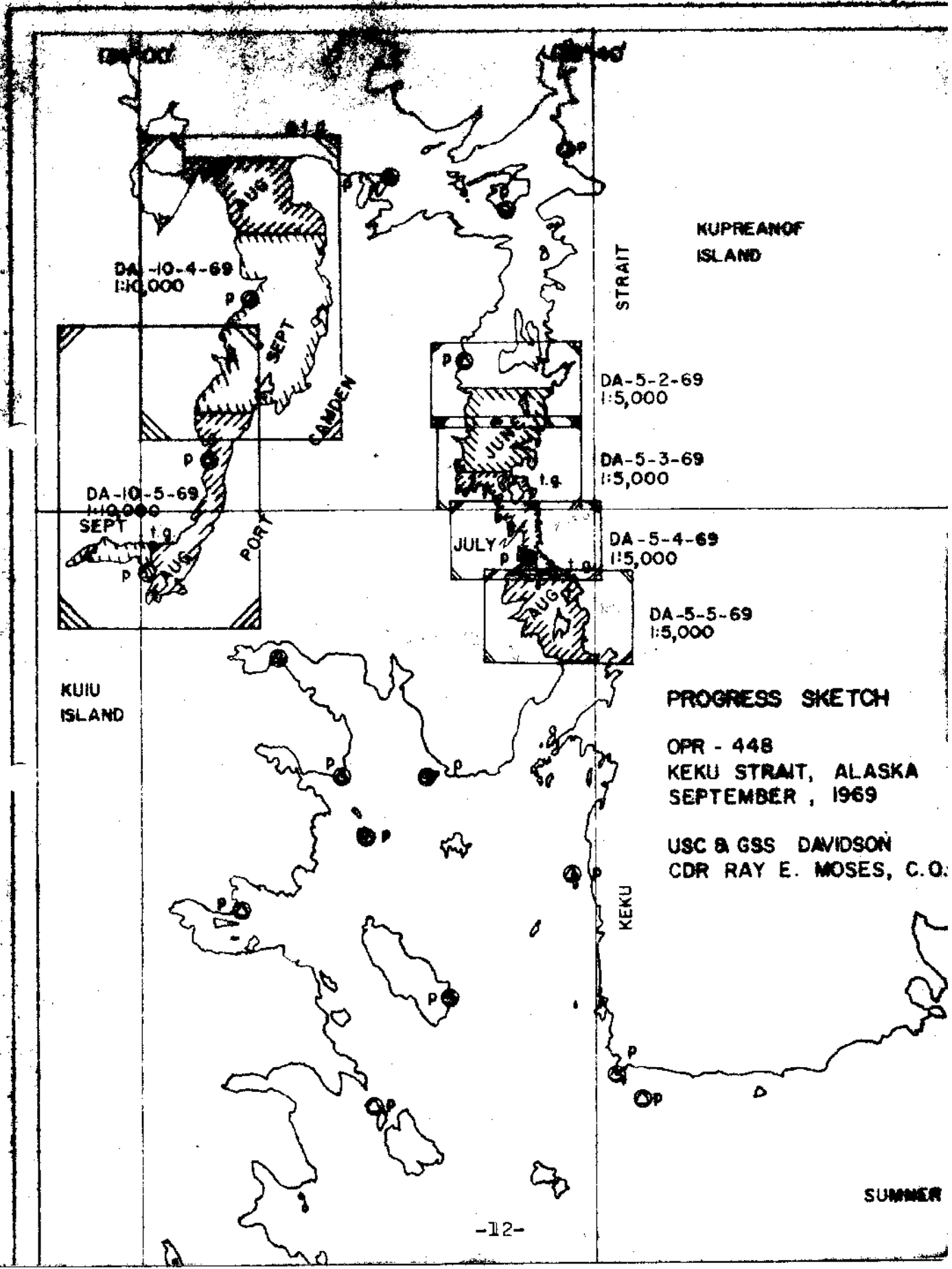
TIDE NOTE

One tide station was installed and maintained near the Devil's Elbow. The tide height data were corrected for differences in time and height.

Tide Station	Devil's Elbow, Keku Strait, Ak Lat 56°38'17"N Long 133°41'57"W
Plane of Reference	MLLW (7.1 feet on the staff)
Time Meridian	105° West

Tide gage is a portable bubble-gage installed on the south side of the point where Daybeacon #20 is located.

Soundings on the boat sheet are reduced with predicted tides based on Beck Island, Keku Strait, Alaska.



DA-10-4-69
1:10,000

DA-10-5-69
1:10,000

DA-5-2-69
1:5,000

DA-5-3-69
1:5,000

DA-5-4-69
1:5,000

DA-5-5-69
1:5,000

PROGRESS SKETCH

OPR - 448
KEKU STRAIT, ALASKA
SEPTEMBER, 1969

USC & GSS DAVIDSON
CDR RAY E. MOSES, C.O.

SUMMER

GEOGRAPHIC NAME LIST

DA-5-5-69

A geographic name investigation was not made this year. An investigation will be made at the completion of the surveys in the Keku Strait area.

MODIFIED VELOCITY CORRECTIONS

OPR-448

There are three(3) tables of velocity corrections: Table #1 corrections are to be applied to Launch I soundings; Table #2 corrections to Launch RA-4; And Table #3 corrections, to the 17-ft Whaler soundings. The reader is referred to the report on Corrections to Echo Soundings: OPR-448 which will be forwarded with this report.

Table I
Launch I

Table 2
RA-4

Table 3
17' Whaler

<u>Depth*</u>	<u>Corr'n</u>	<u>Depth*</u>	<u>Corr'n</u>	<u>Depth*</u>	<u>Corr'n</u>
4.5	-0.4	5.7	-0.1	3.7	-0.2
8.5	-0.3	9.2	0.0	6.1	-0.1
12.1	-0.2	12.7	0.1	8.2	0.0
15.9	-0.1	16.0	0.2	10.9	0.1
19.8	0.0	19.1	0.3	13.7	0.2
23.6	0.1	21.9	0.4	17.0	0.3
27.5	0.2	24.5	0.5	20.7	0.4
31.5	0.3	26.8	0.6	24.5	0.5
35.1	0.4	29.0	0.7	28.1	0.6
38.8	0.5	31.2	0.8	31.1	0.7
42.2	0.6	33.2	0.9	34.2	0.8
45.1	0.7	35.3	1.0	37.0	0.9
47.8	0.8	37.2	1.1	39.8	1.0
50.1	0.9	39.3	1.2	42.1	1.1
52.3	1.0	41.2	1.3	44.6	1.2
54.3	1.1	43.3	1.4	47.1	1.3
57.0	1.2	45.2	1.5	49.2	1.4
59.4	1.3	47.4	1.6	51.6	1.5
62.0	1.4	50.2	1.7	54.0	1.6
64.3	1.5	52.9	1.8	56.2	1.7
67.0	1.6	55.2	1.9	58.8	1.8
69.3	1.7	57.4	2.0	61.0	1.9
71.8	1.8	60.0	2.1	63.5	2.0
74.3	1.9	62.3	2.2	65.9	2.1
76.8	2.0	64.7	2.3	68.2	2.2
79.2	2.1	67.1	2.4	70.5	2.3
99.0	2.2	69.8	2.5	72.9	2.4
		72.0	2.6	75.2	2.5
		74.6	2.7	77.5	2.6
		77.0	2.8	80.0	2.7
		79.4	2.9	99.0	2.8
		99.0	3.0		

* Depth refers to the deepest depth to which the correction is applied.

TRA CORRECTION/TABLE INDICATOR TAPE

Initial Corrections

Table 1 DA-1			Table 2 RA-4			Table 3 17' Whaler		
Day	Time	Corr'n	Day	Time	Corr'n	Day	Time	Corr'n
212	0857	-0.5	206	1000	0.0	210	0858	-0.3
	1008	0.3	207	0900	0.0	216	0917	-0.1
221	0926	0.3		1307	-0.1		0936	-0.3
				1344	0.0		101545	-0.1
			211	0900	-0.8		1422	-0.3
			216	0921	0.0	217	0952	-0.5
				1354	0.2		110130	-0.3
				1514	0.0	219	0915	-0.3
			217	0952	0.0		1039	-0.5
			218	0924	0.0		1104	-0.3
			219	0859	0.0		1119	-0.5
			220	0854	0.0		1130	-0.3
			221	0926	0.0		1147	-0.5
							1328	-0.3
						220	0902	-0.3
							1055	-0.5
							1104	-0.7
							1110	-0.8
							1119	-0.5
							1310	-0.1
							1312	-0.3
							1503	-0.6
							150530	-0.5
							150645	-0.3
							1513	-0.6
						222	0835	-0.3
						223	1007	-0.3
							1132	-0.1
							114815	-0.3
							131215	-0.2
							1316	-0.3
							132530	-0.2
							135330	-0.3
						238	0900	-0.3

Table #1 uses Velocity Table #1
 Table #2 uses Velocity Table #2
 Table #3 uses Velocity Table #3

Station	Lat.	Long.
PETE	56° 38' 1361.2	133° 42' 611.9
PLAT	56° 38' 1069.5	133° 41' 969.9
DEVIL	56° 38' 474.7	133° 41' 171.8
MOUND (513)	56° 37' 1314.1	133° 42' 773.4
CHANGE (505)	56° 37' 1341.9	133° 40' 792.6
FOG (520)	56° 37' 1302.8	133° 41' 509.8
CEN (523)	56° 36' 1490.6	133° 41' 884.9
TURN (507)	56° 36' 1028.1	133° 40' 612.1
WES (515)	56° 36' 1185.6	133° 42' 281.3
JAN (516)	56° 36' 406.6	133° 41' 348.4

LIST OF STATIONS ON DA-5-5-69

<u>Name Used in Hydrographic Survey</u>	<u>Origin of Station</u>
501	T-12818
502	Volume I, p.5,6,14
503	Volume I; p.6,14,15
504	Volume I; p.10,12,15
505CHANGE 1927 (Vol.I, p.3)
506	T-12820
507	TURN 1927
508	T-12820
509	Volume I, p.15
510Volume I, p.5,12,13,14,15
511	T-12818
512	Volume I, p.5 (DA-5-4-69)
513	MOUND 1927
514	Volume I, p.4,5,6
515WES 1927
516	WAN 1927
517	Volume I, p.10-13
518	Volume I, p.9-12, 14
519	Volume I, p.4, 10-14
520FOG 1927
521	T-12818
522	T-12820
523	CEN 1927
524	Volume I, p.6,7,8
525T-12818
526	T-12818

Signals locating navigational aids also plotted on T-sheets

LIST OF OBSTRUCTIONS

<u>Item</u>	<u>Pos.No.</u>	<u>Vol</u>	<u>p.</u>	<u>Lat.</u>	<u>Long.</u>
Rock	3465	VIII	60	56°36.7'	133°42.1'
MHWL	3581-3584	X	45	56°38.1'	133°41.1'
MHWL	3717-3723	X	67	56°38.0'	133°41.1'
MHWL	4219-4224	XV	45	56°38.1'	133°41.2'
MHWL	4225	XV	46	56°38.1'	133°41.2'
Island	4226	XV	46	56°38.1'	133°41.2'
Island	4227	XV	47	56°38.2'	133°41.15'

All other obstructions are given in volumes I, III, and IV.
Obstructions have also been noted on the boat sheet.

<u>Day#</u>	<u>ABSTRACT OF POSITIONS</u>			<u>Field Edit</u>
	<u>RA-4</u>	<u>17' Whaler</u>	<u>DA-1</u>	<u>Signal Cuts</u>
204				
206	1-10 (2)			
207	11-162 (2)			
208				5000-5003(1)
209				5004-5057(1)
210		3000-3125(5)		5058-5127(1)
				5128-5140(3)
211	163-195 (6)		8010-8021(1)	5141-5208(3)
	8000-8009(1)			5209-5231(4)
212		3126-3260(5)	6001-6091(6)	5232-5242(4)
216	196-377 (7)	3261-3331(8)		
217	378-438 (7)	3332-3483(8)		5243-5245(4)
	439-500 (9)			
218	507-615 (9)			
219	625-688 (9)	3484-3631(10)		
	689-815 (11)			
220	816-953 (11)	3632-3719(10)		
		3724-3798(12)		
221			6092-6254(13)	5246-5307(4)
222		3799-3951(12)		
		3967-3979(14)		
223		3978-4068(14)		5308-5337(4)
238		4069-4227(15)		

Volume numbers indicated in parentheses.

APPROVAL SHEET
OPR 448
DA-5-5-69
Keku Strait
Southeast Alaska

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

Ray E. Moses

Ray E. Moses
CDR USESSA
Commanding Officer
USC&GSS DAVIDSON

(RETURN TO SHIP)

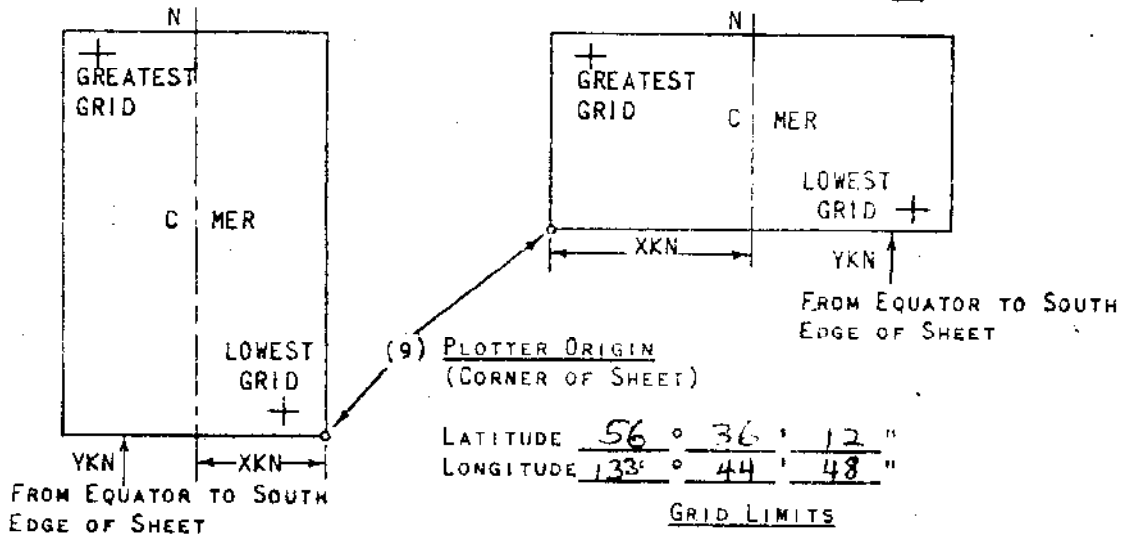
H-9081

FORM # 1

FIG. 15

PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION

- (1) PROJECT No. OPR - 448
- (2) H No. 31089
- (3) FIELD No. G
- (7) VISUAL
- (10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1) OR WEST EDGE (NYX = 0). 3378.1 METERS
- (11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE OF SHEET. 529
6,275,158.418 METERS
- (12) CENTRAL MERIDIAN 133° 41' 30"
- (13) SURVEY SCALE 1: 5000
- (14) SIZE OF SHEET (CHECK ONE) 36x54 42x60 OTHER
- (15) NYX, ORIENTATION OF SHEET (CHECK ONE)
NYX = 1 NYX = 0



LIST G.P. OF ALL STATIONS TO BE PLOTTED ON THIS PROJECTION ON THE BACK OF THIS FORM. (DEG., MIN., METERS)

- GRID LIMITS
- (16) GREATEST LATITUDE 56° 38' 30" (PROJECTION LINE
 - (17) LOWEST LATITUDE 56° 36' 15" INTERVAL, PAGE 4
 - (18) DIFFERENCE 0° 2' 15" HYDRO MANUAL)
 - (19) 0' 15"
 - (20) 9 YSN
 - (21) GREATEST LONGITUDE 133° 44' 45"
 - (22) LOWEST LONGITUDE 133° 38' 15"
 - (23) DIFFERENCE 0° 6' 30"
 - (24) 0' 15"
 - (25) 26 XSN

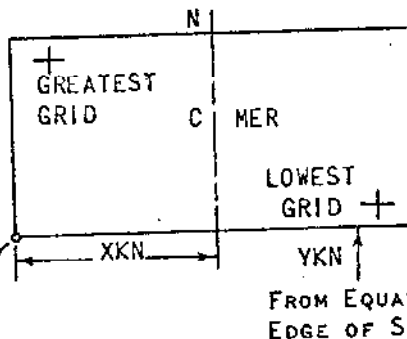
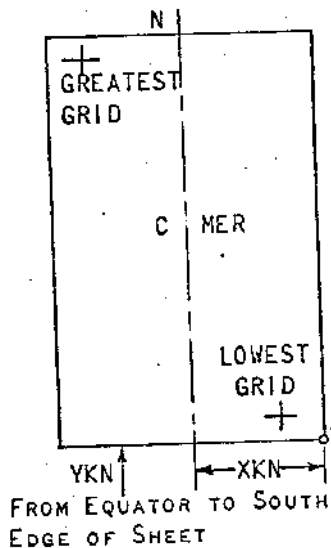
~~22~~

FORM # 1

FIG. 15

PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION

- (1) PROJECT No. OPR-443
- (2) H No. 31089
- (3) FIELD No. G
- (4) REQUESTED BY Commanding Officer
- (5) SHIP OR OFFICE DAVIDSON
- (6) DATE REQUIRED May 5 1969
- (7) VISUAL
- (8) ELECTRONIC (FILL OUT FORM #3)
- (10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1) 3378.1 METERS
- (11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE OF SHEET. 529 METERS
- (12) CENTRAL MERIDIAN 133° 41' 30"
- (13) SURVEY SCALE 1:5000
- (14) SIZE OF SHEET (CHECK ONE) 36x54 42x60 OTHER
- (15) NYX, ORIENTATION OF SHEET (CHECK ONE)
NYX = 1 NYX = 0



LATITUDE 56° 36' 12"
LONGITUDE 133° 44' 48"

GRID LIMITS

- (16) GREATEST LATITUDE 56° 38' 30" (PROJECTION LINE)
- (17) LOWEST LATITUDE 56° 36' 15" INTERVAL, PAGE 4
- (18) DIFFERENCE 0° 2' 15" HYDRO MANUAL
- (19) 0° 15"
- (20) 9 YSN
- (21) GREATEST LONGITUDE 133° 44' 45"
- (22) LOWEST LONGITUDE 133° 38' 15"
- (23) DIFFERENCE 0° 6' 30"
- (24) 0° 15"
- (25) 26 XSN

LIST G.P. OF ALL STATIONS TO BE PLOTTED ON THIS PROJECTION ON THE BACK OF THIS FORM. (DEG., MIN., METERS)

PLOT WITH +500 60.
OFFSET IN 'Y'.

31089
 Field No. OPR 448 5"
 Date 4/29/69

31089

PARAMETER CARD II

Bemi major axis of the earth	6,378,206.4	RDA	1	2	3	4	5	6	7	8	9	10
X Constant - Distance from central meridian to origin of plotter SP 5		YKN	1	12	13	14	15	16	17	18	19	20
Y Constant - Distance from equator to origin of plotter SP 241		YKN	21	22	23	24	25	26	27	28	29	30
Central Meridian of Projection	10498.6876	YKN	31	32	33	34	35	36	37	38	39	40
Plotter Scale/Survey Scale	1:2500	CMR	41	42	43	44	45	46	47	48	49	50
North/south axis of sheet - to correspond to (Y axis - 0)	0 - feet	SCA	51	52	53	54	55	56	57	58	59	60
X axis - 1) of plotter	1 - fathom	NYX										
Feet/Fathom indicator		FOF										
H Identification No.		JM										
		YR										

FOR - 1

YR	09081	53	54	55	56	57	58	59
JM		3	1	0	0	0	0	0

KT = 0

PARAMETER CARD III

Lowest Lat. Intersection	✓	5	6	3	6	1	5	0	0	YST	1	2	3	4	5	6	7	8	9	10	
Lowest Long. Intersection	✓	1	3	3	3	8	1	5	0	0	XST	11	12	13	14	15	16	17	18	19	20
Difference between Grid	✓										DXY	21	22	23	24	25	26	27	28	29	30
Interval (Long)											XSN	31	32	33	34	35	36	37	38	39	40
Interval (Lat)											YSN	41	42	43	44	45	46	47	48	49	50

Computed
 Punched
 Checked
 Date

[Signature]
 1444

GEOGRAPHIC NAMES

Survey No. H-9081

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
Devils Elbow											1
Eagle Island											2
*Keku Strait											3
Kuiu Island											4
Kupreanof Island											5
Rocky Pass											6
											7
											8
* Title											9
											10
											11
											12
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											26
											27

PREPARED BY

Frank W. Pickett
CARTOGRAPHIC TECHNICIAN

APPROVED BY

A. J. Wright
CHIEF GEOGRAPHER

TIDE NOTE FOR HYDROGRAPHIC SHEET

January 27, 1970

~~Nautical Chart Division:~~ Pacific Marine Center

Plane of reference approved
~~Volume of sounding records~~ for Tide tape printout

HYDROGRAPHIC SHEET 9081

Locality: Keku Strait, S.E. Alaska

~~Check Box:~~ Year: 1969

Plane of reference is mean lower low water

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

Devils Elbow, Keku Strait

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

11.8 feet

Remarks Tide reducers on days 210 and 238 have been revised and verified.

J. M. Symons
Chief, Tides and Currents Branch

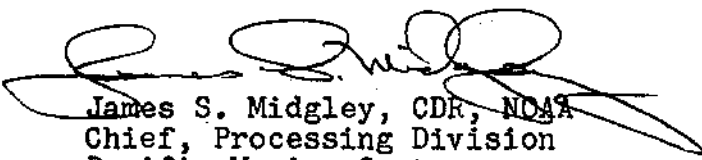
APPROVAL SHEET

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


William M. Martin
Supervisory Carto. Tech.

Approved and Forwarded


James S. Midgley, CDR, NOAA
Chief, Processing Division
Pacific Marine Center

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9081

FIELD NO. DA-5-5-69

Alaska - Keku Strait - Eagle Island to Devils Elbow

SURVEYED: July 25, 1969 through August 26, 1969

SCALE: 1:5,000

PROJECT NO.: OPR-488

SOUNDINGS: DE723 Echo Sounder

CONTROL: Sextant fixes on
shore signals

Chief of Party	R. E. Moses
Surveyed by	B. W. Fisher
.....	G. H. Endrud
.....	E. M. Gelb
Protracted by	Gerber Digital Plotter
Soundings Plotted by	Gerber Digital Plotter
Verified and Inked by	C. R. Lehman (PMC)
Reviewed by	G. K. Myers
.....	Date: April 3, 1972
Inspected by	R. H. Carstens

1. Description of the Area

This is a survey of a portion of Keku Straits between Eagle Island and Devils Elbow. The bottom in this area is very rugged with many rocks and reefs offshore. Along the shore there are ledges and boulder strewn mud flats.

Predominant bottom characteristics in the area are green mud, stones, shells, and pebbles. Kelp appears throughout the survey.

2. Shoreline and Control

The control is adequately described in Part F of the Descriptive Report.

The shoreline is from advance photogrammetric manuscripts T-12817 (1961, 1969) Bp 78164, T-12818 (1968-1969) Bp 78165, T-12819 (1961, 1969) Bp 78166, and T-12820 (1961, 1969) Bp 78167.

The following rocks awash indicated on advanced manuscripts T-12819 and T12820 are considered to be in error after examination of photographs and notes from the boat sheet of the present survey. These rocks should be deleted at the time of final photogrammetric review:

<u>Topo Sheet</u> <u>(Adv. Ms.)</u>	<u>Feature</u>	<u>Position</u> <u>(lat., long.)</u>
T-12819	Rk Awash	56°37.24', 133°42.22'
T-12820	Rk Awash	56°37.35', 133°40.51'
T-12820	Rk Awash	56°37.34', 133°40.49'
T-12820	Rk Awash	56°37.33', 133°40.51'

3. Hydrography

- A. Depths at crossings are in good agreement.
- B. The usual depth curves are adequately delineated. In some areas dashed depth curves were inked to emphasize critical depths.
- C. The development of bottom configuration and the investigation of least depths are considered adequate.

4. Condition of the Survey

The field plotting, sounding records, Descriptive Report, and various sounding printouts are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual for Automated Hydrographic Surveys except as follows:

- A. Faulty control observations, weak fixes, and faulty revisions of data during verification resulted in several shoals being plotted erroneously in deeper areas.
- B. Several notes regarding the nonexistence of rocks awash shown on the photogrammetric survey were in pencil on the boat sheet and should have been inked to emphasize their reliability.

5. Junctions

An adequate junction was made with H-9080 (1969) on the north. No contemporary survey has been received for the junction on the south. However, present survey depths are in general harmony with charted depths in this area.

6. Comparison with Prior Surveys

H-2150 (1892), 1:40,000
 H-4764 (1927), 1:10,000
 H-4764a (1929), 1:5,000
 H-4764b (1929), 1:10,000

Survey H-2150 contains only a single line of soundings in the area of the present survey and does not serve adequately for a comparison.

The other prior surveys taken together cover the area of the present survey. A detailed comparison between prior and present depths reveals variable differences of less than 2 feet. However, major differences are found in areas dredged by the Corps of Engineers in 1960, including the removal of three rocks located at lat. $56^{\circ}38.15'$, long. $133^{\circ}41.05'$, lat. $56^{\circ}38.18'$, long. $133^{\circ}41.06'$, and lat. $56^{\circ}36.83'$, long. $133^{\circ}40.97'$ on H-4764 (1927).

In many areas present depths are 1 to 2 feet deeper than prior depths, probably as a result of differences in tidal corrections. The prior tide gage was located about five miles south of this constricted area.

Some conflicts with prior depths are considered to be due to errors in prior handlead readings on faulty position determination. The following prior soundings are discredited by the present development and should be disregarded:

Depth	Lat.	Long.	Source
9	$56^{\circ}37.00'$	$133^{\circ}40.89'$	H-4764
17	$56^{\circ}37.11'$	$133^{\circ}40.83'$	H-4764

The 1 ft. Rk charted at lat. $56^{\circ}36.65'$, long. $133^{\circ}40.89'$ from H-4764 is probably out of position and should be disregarded. Falling in present depths of about 6 feet, the 1 ft. Rk was not recorded as being observed during a minus tide of 1.5 ft. on the present survey when detached positions were being taken to delineate the adjoining reef. Closely spaced sounding lines in this area on the present survey indicate an even bottom and discredit the existence of the 1-foot depth.

With the addition of a submerged rock, bottom sample and some soundings from H-4764, the present survey is considered adequate to supersede the prior surveys in the common area.

7. Comparison with Chart

Chart Drawing 8272 and Inset, date 5/19/72

A. Hydrography

The charted hydrography originates with the previously discussed surveys which require no further consideration supplemented by partial application from the boat sheet (Bp 77731) and verified smooth sheet of the present survey. Also, charted information is from Corps of Engineers dredging surveys of 1960 (Bps 59946, 59947).

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

B. Topography

1. The two piles charted at lat. $56^{\circ}37.98'$, long. $133^{\circ}40.66'$, and lat. $56^{\circ}38.14'$, long. $133^{\circ}41.23'$ from Notice to Mariners 23 of 1958 were neither proved nor disproved by the present survey and should be retained on the chart.

2. The dolphin charted at lat. $56^{\circ}36.94'$, long. $133^{\circ}40.7'$ from Notice to Mariners 23 of 1958 was neither proved nor disproved by the present survey and should be retained on the chart.

The dolphin charted in lat. $56^{\circ}36.55'$, long. $133^{\circ}40.78'$ from the same source was not mentioned in ~~the~~ present survey records during an investigation at a minus tide of a nearby rock pile and is considered to be nonexistent. The dolphin should be removed from the chart.

C. Aids to Navigation

The charted position of fixed aids to navigation within the area of the present survey adequately mark the features intended.


8. Compliance with Project 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:


Robert A. Boyer
Chief
Marine Chart Division


Donald K. Lillie
for Associate Director
Office of Marine Surveys
and Maps

H-9081

Items for Future Re-Survey Review

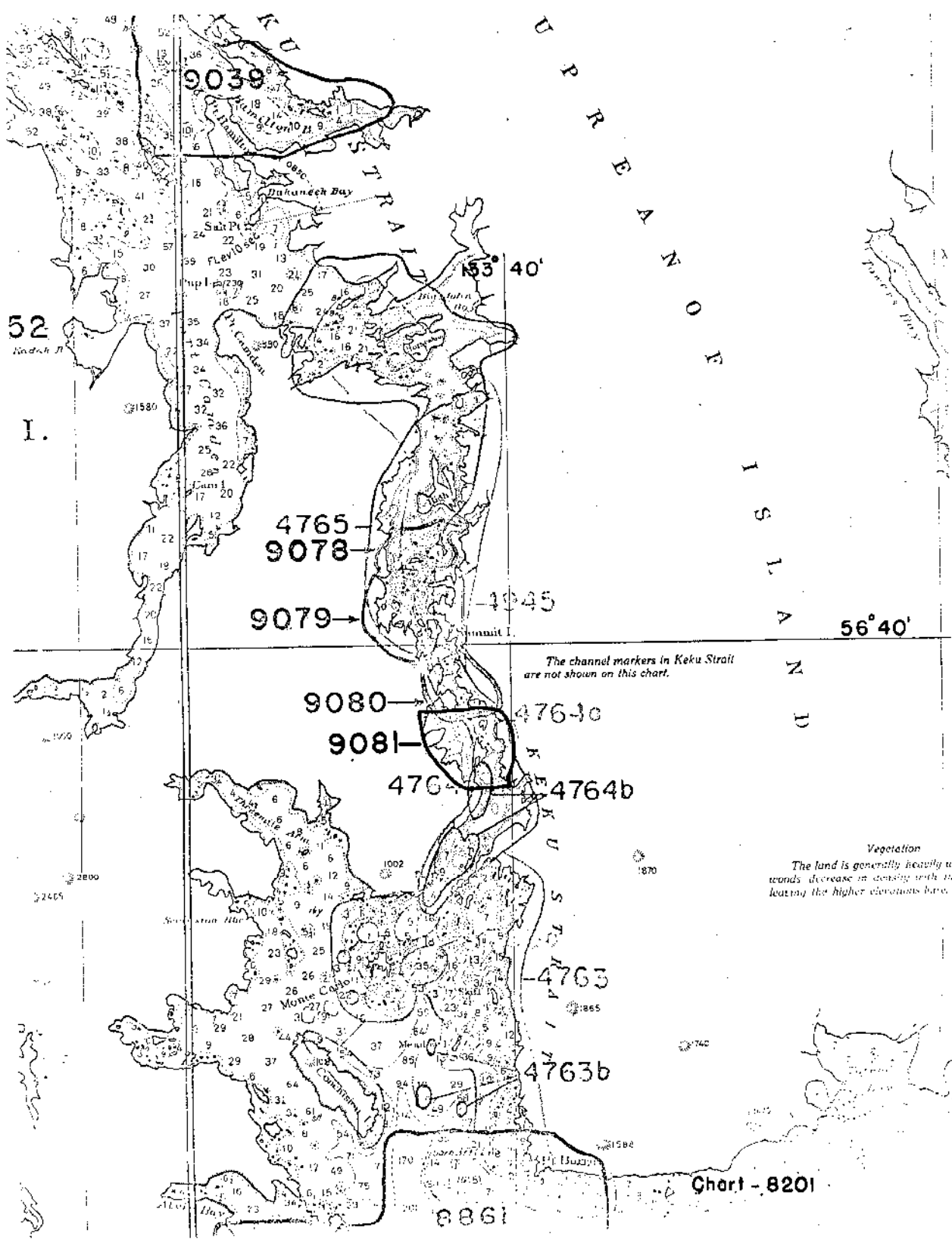
This is a survey of Rocky Pass between Eagle Island and Devils Elbow. No noteworthy changes have taken place since the earlier surveys of the late 1920's. However, some changes have occurred due to dredging and the removal of docks by the Corps of Engineers in 1960.

Position Index - lat. 563 - long. 1335

Bottom Change Index - 2

Use Change Index - 1

Resurvey Cycle - 50 yrs.



52
Kadach II
I.

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9039
4765
9078
9079

9080
9081
4763c
4764b

4763
4763b

8861

Chart - 8201

The channel markers in Keku Strait are not shown on this chart.

Vegetation
The land is generally heavily wooded, decrease in density with increasing the higher elevations have.

