

9404

Diag. Cht. No. 8201-3.

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey ... Hydrographic
Field No. ... RA-10-5-73
Office No. ... H-9404

LOCALITY

State ... Alaska
General Locality ... Clarence Strait
Locality ... Mc Henry Inlet & Approaches

19 73

CHIEF OF PARTY

K. W. Jaffers

LIBRARY & ARCHIVES

DATE ... 6-17-75

9404

HYDROGRAPHIC TITLE SHEET

H-9404

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.

RA-10-5-73

State Alaska

General locality Clarence Strait, ~~Southeast Alaska~~

Locality McHenry Inlet and Approaches

Scale 1:10,000 Date of survey 25 Sept.-8 Nov., 1973

Instructions dated 25 May, 1973 Project No. OPR-465-RA-1973

Vessel NOAA Ship Rainier Launches RA-6, RA-4, RA-3, RA-1

Chief of party CDR. K. William Jeffers

Surveyed by CDR ^{KW} Jeffers, Lt ^R Schiro, Ltjg ^R Hendershot, Ltjg ^S Thorsen, Ens ^P Gadd
Ens ^F Seymour, Ens ^G Stroble

Soundings taken by echo sounder, ~~and track plotter~~ Raytheon DE723 S/N 834, Ross 5000 S/N's 1040,
1041, 1042

Graphic record scaled by Ship's personnel

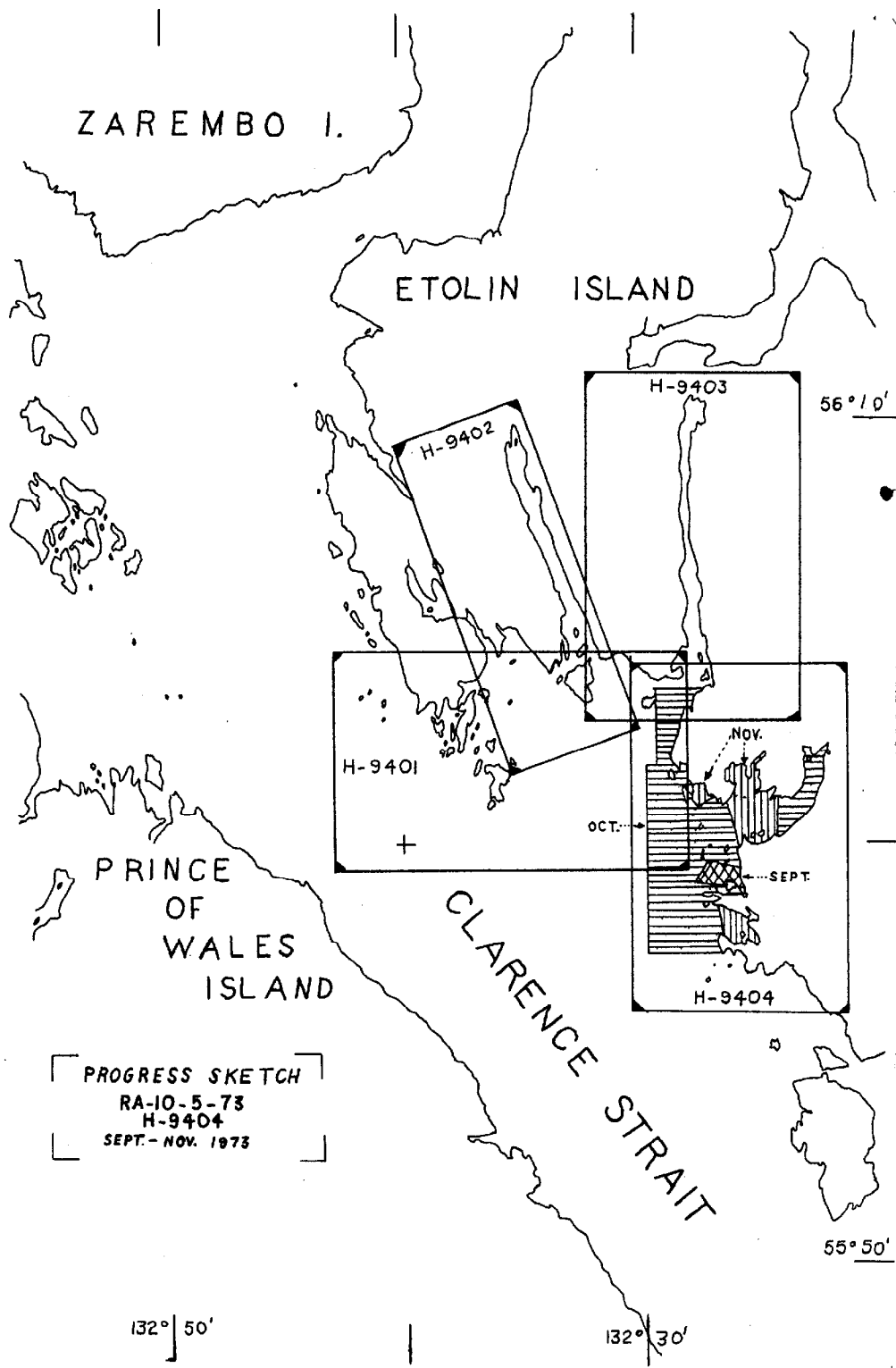
Graphic record checked by Ship's personnel

Protracted by _____ Automated plot by Computer ^{PMC-Gerber Digital} ~~DP-3 S/N 2750~~
^{Plotter #670}

Soundings penciled by _____

Soundings in fathoms ~~DEEK~~ at ~~MLLW~~ MLLW

REMARKS: The projection soundings and position numbers on the boatsheet were
plotted by the Rainier's PDP-8e computer and Complot plotters.



A. PROJECT

This survey was conducted in accordance with Project Instructions: OPR-465-RA-73, dated 25 May, 1973 and changes 1 and 2 dated 31 May, 1973.

B. AREA SURVEYED

This survey includes the area from the mouth of Burnett Inlet south along the coastline of Etolin Island to Kelp Point, including McHenry Inlet. It is bounded by Lat. $55^{\circ}57.4'N$ to Lat. $56^{\circ}03.6'N$ and Long. $132^{\circ}23.5'W$ to Long. $132^{\circ}30.3'W$. The survey began on 25 Sept, 1973 (JD 268) and was completed 8 Nov., 1973 (JD 312).

Sheet size limitations of the Hydroplot system necessitated dividing the boatsheet into two parts. The western portion which includes the coastline from Burnett Inlet to Kelp Point and the mouth of McHenry Inlet was assigned field number RA-10-5A-73, and the eastern part which covers McHenry Inlet was assigned field number RA-10-5B-73.

Junction were made with the following contemporary surveys:

<u>Registry No.</u>	<u>Field No.</u>	<u>Scale</u>	<u>Date</u>
H-9401- <i>in field</i>	RA-10-2-73	1:10,000	1973 <i>Junctions on west</i>
H- 9403	RA-10-4-73	1:10,000	1973 <i>Junctions on north</i>
H-9192	PF-10-2-71	1:10,000	1971 <i>Junctions on south</i>

The prior surveys covering this area are:

H-3941		1:20,000	1916
H-3523		1:10,000	1913
H-1739		1:20,000	1886
H-3793 W.D.		1:40,000	1915-16

C. SOUNDING VESSEL

The following boats were used to obtain the soundings of this survey:

- Uniflite Launch, RA-6 (2126)
- Bertram Launch, RA-4 (2124)
- Bertram Launch, RA-3 (2123)
- Motor Whale Boat, RA-1 (2121)

The Rainier collected bottom samples but was not used for hydrography.

D. SOUNDING EQUIPMENT

The following is a list of equipment used by the survey launches:

<u>Launch</u>	<u>Echo sounder</u>	<u>Model</u>	<u>S/N</u>
RA-6	Ross	5000	1040
RA-4	Ross	5000	1042
RA-3	Ross	5000	1041
RA-1	Raytheon	DE-723	834 <i>pages 1000-1015</i>

The TRA's used on the launches and determined for the TC/TT tapes are as follows:

(numbers in () indicate JD those values were used)

<u>Boat</u>	<u>TRA used in field</u>	<u>Computed TRA on TC/TT tape</u>
RA-6	5	4
RA-4	3(311), 4(268-310,312)	3
RA-3	4(270,276-288,298-304), 3(275,291,312)	4(291-312), 3(270-278)
RA-1	2	2

The blanking function was employed to eliminate spurious returns, and the fathometer was internally phased and adjusted so as to have no phase correction. Phase checks were taken regularly.

The initial was checked continuously during operation and maintained near zero with the exceptions listed below for which adjustments have been made as necessary.

<u>JD</u>	<u>Launch</u>	<u>Positions affected</u>
275	RA-3	3057-3061
304	RA-6	6567-6569
305	RA-6	6779-6796

RA-6 and RA-3 have a Hydrolog system such that the depth recorded on the master tape is obtained from the digitizer and not from the fathogram, and therefore is independent of and not affected by a wandering initial on the fathogram. However, the electronic logger was down on RA-3 for JD275^{pos. 3016-3087} so depths were hand logged in sounding volume No. 1. Some of the necessary corrections were made to the sounding volume data (as indicated by the red felt pen) prior to it being transferred to tape. The rest of the corrections were made on the corrector tape as shown by the annotations on the corrector tape listing.

Bar checks were taken routinely to a depth of 7 fm. and the results were abstracted. All applicable corrections were incorporated on a TC/TI (Transducer Corrector/Table Indicator) tape for automated processing (see appendix). For further information on sounding equipment and corrections, refer to Corrections to Echo Soundings, OPR-465-RA-73.

E. SMOOTH BOATSHEET

The boatsheets transverse mercator projection and soundings were plotted by Rainier personnel using the onboard PDP-8e Complot system. The Control Meridian of the projection is 132°40'00" West Long. and the southern control latitude is 6,100,000 meters north of latitude zero. Position numbers, soundings and signals were machine plotted. The final smooth sheet will be plotted by PMC's Electronic Data Processing Branch.

Main scheme sounding lines are plotted in black ink, crosslines in red, bottom samples in green, and junction soundings in various other other colors as indicated on the sheets.

Two Houston Instrument cal comp Plotters, model DP-3 were used as a part of the Hydroplot/Hydrolog system to plot the RA-10-5-73 boatsheet supplied to PMC for verification. Certain plotting errors were found during the field work, which although plotted and measured on a control sheet may affect the accuracy of these sheets also.

Apparent paper shrinkage and expansion was discovered and monitored throughout the survey operations. The distance between ~~two~~ latitudes was measured on a control sheet using a beam compass and a meter bar in mid-September, on 7 Nov., 1973, and on 16 Nov., 1973, with measurements of 37.115 cm, 37.005 cm, and 37.105 cm respectively. This shrinkage would cause soundings plotted during the latter part of the project to be shifted with respect to the latitude/longitude grid lines plotted at the start of the project. Launch data was processed and plotted daily. Signals used for visual control were plotted at the completion of the project, while the shoreline was transferred from the manuscripts shortly after the grid lines were drawn. The shrinkage was noticed only in the pen axis direction (between the perforated edges). Since the bottom sprocket wheels of the plotter are fixed and the top paper shrinkage is progressive in the +y direction (pen axis).

A spare plotter was installed in late September after the original plotter was suspected of error. After one day of use the sprocket

wheels were twisted out of alignment, and were realigned as best as possible. However, any small change in alignment or any difference in alignment between the spare and the original plotter may have caused a slight shift in the soundings.

After cleaning and maintenance, the original plotter was reinstalled for the remainder of the project. The spare plotter was used for three days.

F. CONTROL

This survey employed visual control for all positions taken. Signal locations were determined by several methods, as listed in the following table.

<u>Signal No.</u>	<u>Method of location</u>
143	ASA (intersected) with a WILD T-2 From triangulation station
103,276	Resected on triangulation stations with T-2
506-512, ⁵¹⁵ 514,630,639	Recovered triangulation <i>Class 1</i>
601-622,657,658	Photo picked and scaled from Man. T-12364 (1963-74)
all others	" " " " " " T-00584 (1963-75)

For a list of all signals and their geographic position, see appendix.

Both manuscripts listed in the preceeding table were completed pending field edit in 1971. No unusual or substandard methods were employed in this survey.

Two launch-days work are recorded in sounding columns, JD275 for RA-3 in volumn no. 1 and JD269 for RA-1 in a sounding volumn submitted with the descriptive report for RA-10-2-73 (H-9401).

G. SHORELINE

Shoreline details were transferred to the boatsheet directly from the same manuscripts listed under control. Field edit of these manuscripts was accomplished and verified by ship Rainier personnel. The shoreline on RA-10-5-73 is considered adequate. For further details refer to Field Edit Report, OPR-465-RA-73.

H. CROSSLINES

Crosslines amounted to 20.6 NM or 7.6% of the main scheme miles run. The crosslines agree well with the main scheme lines considering the very rugged nature of the bottom.

I. JUNCTIONS

Junctions were made with all of the contemporary surveys listed in B (area surveyed). Comparisons show very good junctions, with all soundings agreeing to within 0-1 fm.

J. COMPARISON WITH PRIOR SURVEYS

There are seventeen presurvey review items within the confines of this sheet. The following table lists the latitude and longitude of these items, their confirmation and recommendation.

<u>NO.</u>	<u>Lat. N</u>	<u>Long. W</u>	<u>presurvey depth (fm)</u> <i>and origin</i>	<u>surveyed depth (fm)</u>
1	56°00.6'	132°26.5'	6.75 H-3941 (1916)	3.4 3.2 OK
2	56°01.6'	132°26.5'	3.75 H-3941	1.8 2.7 OK
3	56°00.8'	132°24.6'	9 H-3941	4.4 8.8 OK
4*	56°00.7' 68	132°24.43' H-3941	2 ft. at MLLW sunken on 1160	2.3 7' covered 1' MLLW, carried forward
5*	55°58.3' 28	132°28.40'	1.75 H-3793 WD (11ft)	2.24 carried forward 1.8 fm
6	55°59.3'	132°28.9'	23 H-3941	22-15-19 OK
7	55°59.5'	132°26.3'	7½ H-3941	2.3 3.2 OK
8	55°59.9'	132°29.1'	25 H-3941	28 25 OK
9	56°00.0'	132°26.9'	9 H-3941	6.6 8' OK

$\frac{1}{4}$ fm on H-3941
 $\frac{1}{4}$ fm = 1.5 ft.

* carried forward to H-9404

10*	56°00.4'37"	132°29.50'	30	H-3941 (1916)	31 29 nearby
11	56°00.5'	132°28.6'	34	H-3941	27, 40 OK
12	56°00.6'	132°27.5'	15	H-3941	17 16 OK
13	56°00.9'	132°28.6'	H3941 23	not on ch. 8160	15, 20
14	56°01.2'	132°28.7'	14	H-3941	5.0 6.4 OK
15*	56°01.2'	132°29.4' (12 ft.)	2	H-3793 WD (1915-16)	2.1 3
16*	56°01.4'	132°29.3' (26 ft.)	4	H-3793 WD (1915-16)	2.6 4.5
17	56°02.7'	132°29.5'	36	H-3523 (1913)	30 29 OK

* Items 4, 5, 10, 15 & 16 carried forward to H-9404 and remain charted
 It is recommended that the depths and locations of numbers 5, 6, 8,

10, 12, and 15 be retained as verified. Number 4 should be investigated further, as it was neither verified nor disproved. The depths for numbers 1, 3, 7, 9 and 16 should be changed to the least depths obtained by this survey. In several of the other presurvey review locations a least depth was obtained at a distance from the presurvey review item and is of greater importance for charting purposes, they are listed in the following table:

No.	Presurvey depth	Distance	Directions to	Least Depth
2	3.75 fm.	150 meters	S	1.37 fm. ✓
11	34 "	50 "	WSW	27 " ✓
13	23 "	80 "	SE	15 " ✓
14	14 "	100 "	NNW	5.0 " ✓
17	36 "	40 "	S	30 29 " ✓

A 28 fm. sounding was obtained near the ~~36~~³⁸ fm. sounding south of item no. 17 on boat sheet H-9401. The junction with prior survey H-3523 (1913) is poor in that many of the H-3523⁽¹⁹¹³⁾ recorded depths are much deeper than those obtained by this survey. However, the bottom is mud in that portion of the survey where the discrepancies occur and might be partially explained by sediment buildup over the past 60 yrs. from the heavy run off of this area.

The ~~junction~~^{overlap} with H-3941⁽¹⁹¹⁶⁾ is generally very good.

K. COMPARISONS WITH THE CHART

A comparison was made with chart 8160, NOS, scale of 1:80,000 5 August 1972. Two rocks awash that appear on the chart were not located by this ~~survey~~ ^{or} field edit. Their charted locations are:

1. $56^{\circ}00.3'N$, $132^{\circ}24.3'W$ retained on survey
2. $56^{\circ}00.8'N$, $132^{\circ}27.7'W$ retained on survey

Several uncharted dangers to navigation were found during this survey:

<u>Depth (fm)</u>	<u>Position No.</u>	<u>Lat.</u>	<u>Long.</u>
0.59	6753	$56^{\circ}01.6'$	$132^{\circ}28.6'$ <i>3/4 charted</i>
0.59	6752, 1st out	$56^{\circ}01.7'$	$132^{\circ}28.8'$ <i>near above stdy.</i>
0.58	peak after 73413271	$55^{\circ}59.9'$	$132^{\circ}27.5'$ <i>3/4 charted</i>
0-1-0.1 * (1)	" " 3195	$55^{\circ}59.6'$	$132^{\circ}26.7'$ <i>* charted</i>
+ (no depth) * (2)	4015 D.P.	$55^{\circ}59.5'$	$132^{\circ}27.0'$ <i>* charted</i>
-1.0-0.3	4024 3rd out near 4015 DP	"	"
0.36	3058 peak after 1st out	$55^{\circ}59.0'$	$132^{\circ}27.8'$ <i>3/4 charted</i>
0.04	3064 " " " "	"	"
1.85	6373 1st out	$55^{\circ}58.2'$	$132^{\circ}27.1'$ <i>3/4 charted</i>

L. ADEQUACY OF SURVEY

With the four exceptions listed below this survey is complete and adequate to supercede prior surveys for charting.

1. The area around $56^{\circ}02.0'N$ Lat. and $132^{\circ}23.2'W$ Long. was ice covered and could not be broken by the launches.
2. As previously mentioned item no. 4 of the presurvey review *retained from H-3941* should be more thoroughly investigated.
3. The area around the 11 fm. sounding at $55^{\circ}59.9'N$ Lat. $132^{\circ}29.2'W$ Long. should be investigated for least depth.
4. The holes south and east of signal 512 should be split more closely.

M. AIDS TO NAVIGATION

There are no floating aids to navigation or unofficial aids to navigation in the survey area.

N. STATISTICS

Sheet RA-10-5-73 contains 2564 positions, 271.8 NM of soundings

and approximately 10.8 sq. NM of survey area. A tabulation of statistics

follows:

<u>LAUNCH</u>	<u>Miles of hydro</u>	<u>No. of Pos.</u>	<u>Bottom samples</u>
Ship	--	19	19
RA-1	1.4	16	--
RA-3	62.7	658	10
RA-4	59.2	603	2
RA-6	<u>148.5</u>	<u>1268</u>	<u>4</u>
TOTALS	271.8	2564	35

O. REFERENCES TO REPORTS

1. Corections to Echo Soundings, OPR-465-RA-73.
2. Field Edit Report, OPR-465-RA-73.

Respectively submitted

Sydney Reed Withers

Sydney Reed Withers, Ltjg, NOAA

SEPARATES FOLLOWING TEXT

Tide Note
Abstract of Positions
*Bottom sediment data sheets (C&GS form 733M)
*TC/TT tape listing
*Velocity corrector tape listing
Parameters for Digital Computing (EDAT form 1)
Signal Tape listing
Parameter tape listings
Geographic names list

* filed with *Field Records*

ABSTRACT OF POSITIONS

<u>JD</u>	<u>FROM/TO POS.</u>	<u>REJ. POS.</u>	<u>TYPE OF POS.</u>	<u>TAPE NO.</u>
<u>SHIP RAINIER (2120)</u>				
306	0000-0005	--	BS	002
311	0006-0018	--	BS	004
<u>RA-1 (2121)</u>				
269	1000-1015	--	Hydro	107
<u>RA-3 (2123)</u>				
270	3000-3015	--	Hydro	308
275	3016-3087	--	"	309
276	3088-3174	3158-59	"	310
278	3175-3189	--	"	312
278	3190	--	DP*(g)	312
278	3191-3283	3253-59	Hydro	"
288	3284-3285	--	BS	317
291	3286-3332	--	Hydro	321
298	3333-3432	--	"	324
303	3433-3530	3445-48	"	326
304	3531-3658	--	"	327
312	3659-3666	--	BS	332
<u>RA-4 (2124)</u>				
268	4000-4014	4003	Hydro	408
268	4015	--	DP *(2)	"
268	4016-4025	--	Hydro	"
268	4026	--	DP - 0.8 min us-sndg.	"
268	4028-4125	4062-72, 90-91, 99	Hydro	"
269	4126-4129	--	DP pos. of rks.	409
269	4130-4156	4133-35, 39, 40, 46-48	Hydro	"
288	4157-4209	4173-4202	"	410
289	4210-4213	--	DP pos. of rks.	411
289	4214-4282	--	Hydro	"
290	4283-4334	--	"	412
290	4335-4336	--	DP pos. of rks.	"
290	4337-4349	--	Hydro	"
310	4350-4474	4353-54, 4406-08	"	421
311	4475-4575	--	"	422

311	4576-4577	--	BS	422
312	4578-4619	4597-99	Hydro	423B
312	4620-4665	4624	"	423A
		<u>RA-6 (2126)</u>		
284	6000-6162	--	Hydro	606
289	6163-6246	--	"	607
289	6247-6248	--	DP <i>pos. of rks.</i>	"
289	6249-6263	--	Hydro	"
298	6264-6372	--	"	609
303	6373-6546	6518-20	"	610
304	6547-6668	--	"	611
305	6669-6775	6759-61	"	612
305	6776-6778	6777	BS	"
305	6779-6804	--	Hydro	"
306	6805-6916	6839,47-48,99	"	613
309	6917-7035	--	"	614
310	7036-7145	7136-38	"	615
310	7146	--	DP *(3)	"
311	7147-7184	--	Hydro	616A
311	7185-7244	--	"	616B
311	7245	--	BS	"
311	7246-7255	--	Hydro	"
311	7256	--	DP <i>1.5sndg.</i>	"
311	7257	--	BS	"
311	7258-7269	--	Hydro	"
311	7270-7281	--	"	616A

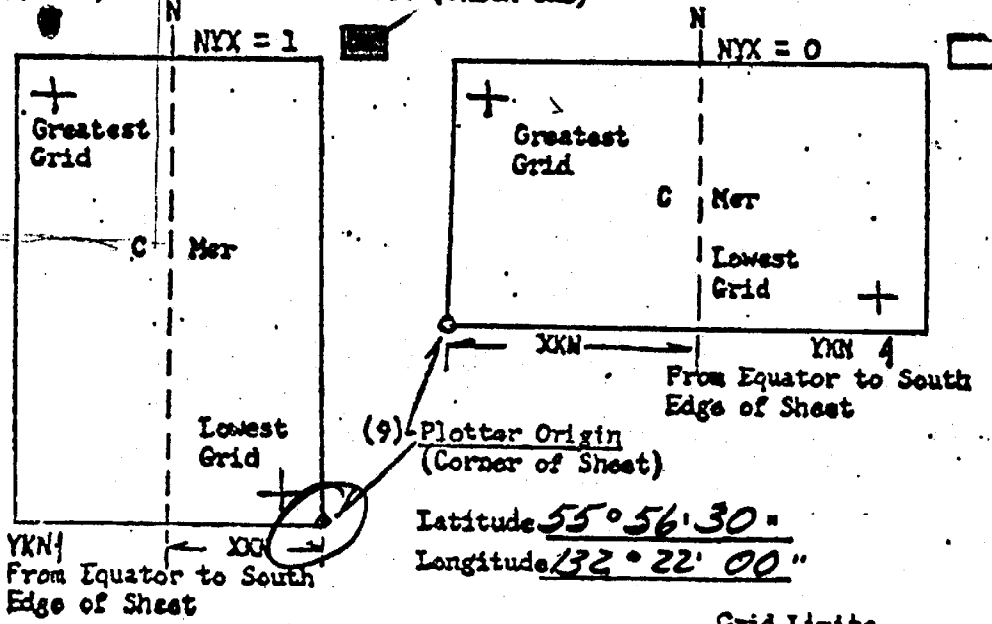
FORM # 1
PARAMETERS FOR DIGITAL COMPUTING
CYCLONIC PROJECTION

- (1) Project No. OPR - 465 (4) Requested by Processing
 (2) H No. H - 9404 (5) Ship or Office Rainier
 (3) Field No. RA-10-5-73 (6) Date Required _____
 (7) Visual Ft.(0) or Fathoms (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) 5207.400 Meters
 (11) YKN (SP 241) Distance from Equator to South Edge of Sheet. (Origin) 6201853.928 Meters
 (12) Central Meridian 132° 26' 30"

(13) Survey Scale 1:10,000

(14) Size of Sheet (Check one) 36x60 42x60

(15) NYX, Orientation of sheet (Check one)



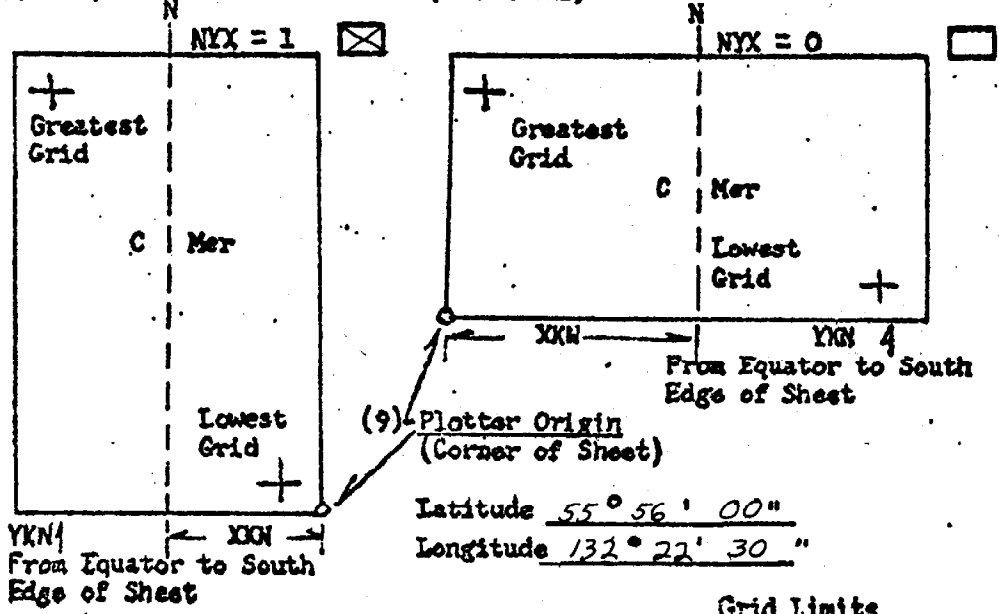
(9) Plottor Origin (Corner of Sheet)
 Latitude 55° 56' 30"
 Longitude 132° 22' 00"

60
 2
 300
 x 17.3558

Grid Limits	
(16) Greatest Latitude	<u>56° 04' 30"</u> (Projection Line Interval Page 4 Hydro Manual)
(17) Lowest Latitude	<u>55° 57' 00"</u>
(18) Difference	<u>7' 30"</u>
(19)	<u>00' 30"</u>
(20)	<u>15</u> YSN
(21) Greatest Longitude	<u>132° 32' 00"</u>
(22) Lowest Longitude	<u>132° 22' 30"</u>
(23) Difference	<u>9' 30"</u>
(24)	<u>00' 30"</u>
(25)	<u>19</u> XSN

FORM # 1
**PARAMETERS FOR DIGITAL COMPUTING
 POLYCONIC PROJECTION**

- (1) Project No. OPR-RA-465-73 (4) Requested by _____
- (2) H No. H-7404 (5) Ship or Office RAINIER
- (3) Field No. RA-10-5-73 (6) Date Required _____
- (7) Visual Ft.(0) or Fathoms (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) 5,000
PARAMETER TAPE VALUE → 42,000 Meters
- (11) YKN (SP 241) Distance from Equator to South Edge of Sheet. (Origin) 6,100,000 Meters
- (12) Central Meridian 132° 26' 30"
- (13) Survey Scale 1:10,000
- (14) Size of Sheet (Check one) 36x60 42x60
- (15) NYX, Orientation of sheet (Check one)



<u>Grid Limits</u>	
(16) Greatest Latitude	<u>56° 04' 00"</u> (Projection Line Interval Page 4 Hydro Manual)
(17) Lowest Latitude	<u>55° 57' 00"</u>
(18) Difference	<u>7' 00"</u>
(21) Greatest Longitude	<u>132° 30' 30"</u>
(22) Lowest Longitude	<u>132° 22' 30"</u>
(23) Difference	<u>8' 00"</u>
(19)	_____
(20)	_____ YSN
(24)	_____ "
(25)	_____ XSN

09404	608	73	55593647	132260150	04940	06055
09404	609	73	55592205	132260675	05044	05587
09404	610	73	55590614	132262918	05452	05070
09404	611	73	55585338	132264439	05729	04656
09404	612	73	55585260	132274329	06801	04637
09404	613	73	55583075	132274260	06789	03921
09404	614	73	55582370	132271879	06355	03692
09404	615	73	55582800	132264554	05750	03832
09404	616	73	55582315	132263032	05473	03674
09404	617	73	55580291	132260086	04936	03017
09404	618	73	55575616	132264742	05734	02798
09404	619	73	55573282	132265860	05988	02040
09404	620	73	55575360	132260317	04978	02617
09404	621	73	55575406	132254080	04571	02730
09404	622	73	55574588	132252985	04372	02464
09404	623	73	56001216	132254389	04665	07214
09404	624	73	56002021	132251387	04173	07476
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09404	631	73	56005283	132230248	01692	08536
09404	632	73	56013893	132223169	01134	10034
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09404	634	73	56015454	132230439	01729	10540
09404	635	73	56021251	132231294	01885	11124
09404	636	73	56014913	132232124	02035	10366
09404	637	73	56011714	132232776	02153	09325
09404	638	73	56005778	132235781	02699	08696
09404	639	73	56010244	132244530	03563	08847
09404	640	73	56020071	132231709	01960	10740
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09404	642	73	56010239	132252038	04201	08845
09404	643	73	56010941	132253677	04499	09073
09404	644	73	56011662	132252499	04235	09307
09404	645	73	56012451	132252274	04244	09564
09404	646	73	56013612	132251974	04190	09941
09404	647	73	56015648	132251253	04059	10602
09404	648	73	56014733	132252049	04203	10305
09404	649	73	56014785	132253042	04384	10321
09404	650	73	56014252	132253105	04395	10148
09404	651	73	56012632	132254069	04570	09622
09404	652	73	56013624	132255362	04806	09944
09404	653	73	56014465	132255687	04859	10218
09404	654	73	56013505	132263960	05642	09905
09404	655	73	56011736	132260537	05019	09331
09404	656	73	56011225	132244306	03522	09165
09404	657	73	55584291	132272018	06381	04316
09404	658	73	55583534	132271960	06370	04070

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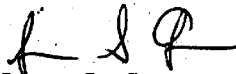
09404	608	73	55593647	132260150	04940	06055
09404	609	73	55592205	132260675	05044	05587
09404	610	73	55590614	132262918	05452	05070
09404	611	73	55585338	132264439	05729	04656
09404	612	73	55585260	132274329	06801	04637
09404	613	73	55583075	132274260	06783	03921
09404	614	73	55582370	132271879	06355	03692
09404	615	73	55582800	132264554	05750	03832
09404	616	73	55582315	132263032	05473	03674
09404	617	73	55580291	132260086	04936	03017
09404	618	73	55575616	132264742	05734	02798
09404	619	73	55573282	132265260	05988	02040
09404	620	73	55575060	132260317	04978	02617
09404	621	73	55575406	132254080	04571	02730
09404	622	73	55574588	132252985	04372	02464
09404	623	73	56001216	132254589	04665	07214
09404	624	73	56002021	132251037	04173	07476
09404	629	73	56001133	132243427	03861	07204
09404	630	73	56002904	132234540	02473	07763
09404	631	73	56005283	132230248	01692	08536
09404	632	73	56013893	132223169	01134	10034
09404	633	73	56020653	132223834	01256	10930
09404	634	73	56015454	132230439	01729	10540
09404	635	73	56021251	132231294	01885	11124
09404	636	73	56014918	132232124	02035	10366
09404	637	73	56011714	132232776	02153	09325
09404	638	73	56005773	132235781	02699	08696
09404	639	73	56010244	132244530	03563	08847
09404	640	73	56020071	132231709	01960	10740
09404	641	73	56011048	132245813	03796	09108
09404	642	73	56010239	132252038	04201	08845
09404	643	73	56010941	132253677	04499	09073
09404	644	73	56011662	132252499	04285	09307
09404	645	73	56012451	132252274	04244	09564
09404	646	73	56013612	132251974	04190	09941
09404	647	73	56015648	132251253	04059	10602
09404	648	73	56014733	132252049	04203	10305
09404	649	73	56014785	132253042	04384	10321
09404	650	73	56014252	132253105	04395	10148
09404	651	73	56012632	132254069	04570	09622
09404	652	73	56013624	132255362	04806	09944
09404	653	73	56014465	132255657	04859	10218
09404	654	73	56013505	132263960	05642	09905
09404	655	73	56011736	132260537	05019	09331
09404	656	73	56011225	132244306	03522	09165
09404	657	73	55584291	132272018	06381	04316
09404	658	73	55583534	132271960	06370	04070

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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

PARAMETER TAPE LISTINGS

RA-10-5A-73

FEST=42000
CMAT=6100000
CMER=132/40/0
GRID=30
PLSCL=10000
PLAT=55/56/00
PLON=132/25/08
CENTLAT=55/55/55.14
CENTLON=132/24/08.37
DOUBLAT=55/56/41.61
DOUBLON=132/27/19.19
Q=1498.34995
VESNO=2120
YR=73

RA-10-5B-73

FEST=42000
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CMER=132/40/0
GRID=30
PLSCL=10000
PLAT=55/56/00
PLON=132/22/30
CENTLAT=55/55/55.14
CENTLON=132/24/08.37
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DOUBLON=132/27/19.19
Q=1498.34995
VESNO=2120
YR=73

SIGNAL TAPE LISTING
RA-10-5-73

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103	56 01	1163	132 35	4912	
132	56 03	0773	132 33	4807	
133	56 03	1500	132 33	1467	
143	56 04	0855	132 30	2600	
210	56 06	4397	132 28	1961	
217	56 03	3110	132 29	4402	
218	56 03	4801	132 29	1774	
219	56 03	5461	132 28	4893	
221	56 04	2774	132 28	2000	
225	56 04	2105	132 27	4387	
227	56 03	5351	132 27	4414	
228	56 03	2363	132 27	5939	
229	56 03	0886	132 28	2195	
230	56 02	3776	132 28	3742	
256	56 00	5186	132 26	4789	
257	56 01	0294	132 26	4762	
258	56 01	0055	132 27	0075	
259	56 00	4181	132 27	1304	
260	56 01	0449	132 27	2430	
261	56 01	2069	132 27	3608	
262	56 01	0495	132 27	4958	
263	56 01	1836	132 28	0681	
264	56 00	5978	132 28	1852	
265	56 01	3602	132 28	1333	
266	56 01	4572	132 28	2505	
267	56 01	3890	132 28	3042	
268	56 01	4527	132 28	4277	
269	56 01	2897	132 28	4456	
276	56 01	2497	132 35	3379	
506	56 03	1646	132 32	0864	POINT 1916
507	56 04	2281	132 31	5269	BIG 1916
508	56 03	0987	132 30	0059	MAY 1913 16
509	56 01	3446	132 29	0325	HARD 1916
510	56 02	0904	132 28	5989	ISLE 1913 16
511	55 59	5338	132 26	1038	OPAL 1916
512	55 58	5877	132 28	1066	QUARTZ 1916
514	56 00	2030	132 27	4033	RACE 1916
515	56 00	5046	132 26	4166	TAD 1916
601	55 59	4792	132 27	5237	
602	55 59	4704	132 27	5202	
603	55 59	5600	132 27	2837	
604	55 59	3637	132 27	2757	
605	55 59	5170	132 27	0156	

606	55	59	3266	132	27	0277	
607	55	59	4472	132	26	3639	
608	55	59	3647	132	26	0150	
609	55	59	2205	132	26	0675	
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611	55	58	5338	132	26	4439	
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613	55	58	3075	132	27	4260	
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623	56	00	1216	132	25	4589	
624	56	00	2021	132	25	1887	
629	56	00	1183	132	24	3427	
630	56	00	2904	132	23	4540	UNDO 1916
631	56	00	5283	132	23	0248	
632	56	01	3893	132	22	3169	
633	56	02	0653	132	22	3834	
634	56	01	5454	132	23	0439	
635	56	02	1251	132	23	1294	
636	56	01	4918	132	23	2124	
637	56	01	1714	132	23	2776	
638	56	00	5778	132	23	5781	
639	56	01	0244	132	24	4530	SAY 1916
640	56	02	0071	132	23	1709	
641	56	01	1048	132	24	5813	
642	56	01	0239	132	25	2038	
643	56	01	0941	132	25	3677	
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645	56	01	2451	132	25	2274	
646	56	01	3612	132	25	1974	
647	56	01	5648	132	25	1253	
648	56	01	4733	132	25	2049	
649	56	01	4785	132	25	3042	
650	56	01	4252	132	25	3105	
651	56	01	2632	132	25	4069	
652	56	01	3624	132	25	5362	
653	56	01	4465	132	25	5657	
654	56	01	3505	132	26	3960	
655	56	01	1736	132	26	0537	
656	56	01	1225	132	24	4306	
657	55	58	4291	132	27	2018	
658	55	58	3534	132	27	1960	

APPROVAL SHEET


H-9404 RA-10-5-73

OPR-465-RA-73

Clarence Strait, Alaska

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OORDER, and the Instruction Manual for Automated Hydrographic Surveys. The data was examined daily during the execution of the survey.

The boatsheets and the accompanying records have been examined by me and are considered complete and adequate for the area surveyed and are approved.


K. William Jeffers
CDR, NOAA

TIDE NOTE

It is recommended that the tide station established on the North shore of McHenry Inlet, Etolin Is., Alaska, at Lat $56^{\circ}01.0'N$ and Long. $132^{\circ}24.0'W$ on 14 Sept. 1973, be used to control the soundings on this survey. The gage operated on time meridian $105^{\circ}W$.

Predicted tides for boatsheet control were obtained from the Tide Tables, 1973, West Coast of North and South America using the Lake Bay, Alaska subordinate station. The tides were computer generated and applied directly to the data during computer plotting.

G.P. approximate / not plotted

9/23/74

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): McHenry Inlet

Period: September 14 - November 8, 1973

HYDROGRAPHIC SHEET: H9404

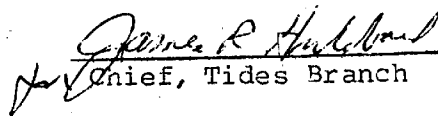
OPR: 465

Locality: Clarence Strait, Southeast Alaska

Plane of reference (mean lower low water): 4.6 ft.

Height of Mean High Water above Plane of Reference is 15.1 ft.

Remarks: Zone direct.



Chief, Tides Branch

H-9404

Name on Survey

	On Coast No	On Survey No	On U.S. Map	From Inshore	On Island	P.O. Box	Range Map	U.S. Map	
	A	B	C	D	E	F	G	H	K
X BURNETT ISLAND INLET									1
X CLARENCE STRAIT									2
X ENTRANCE ISLAND									3
X FAWN ISLAND									4
X ^E TOLIN ISLAND									5
X JADSKI COVE									6
X KELP POINT									7
X MCHENRY ANCHORAGE									8
X MCHENRY INLET									9
X RANGE ISLAND									10
X QUARTZ ROCK									11
X AVON ISLAND									12
X ISLE POINT									13
X MCHENRY ISLET									14
X NUT ROCK									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25
									26

Approved
Chas. E. Harrington
 Staff Geographer - C51x2
 15 Apr. 1976

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. B9404

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & PNO	1	BOAT SHEETS 7 rough & 2 smooth	9
DESCRIPTIVE REPORT	1	OVERLAYS position (mylar)	1

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES			1			
CAHIERS	2 & Raw Data P/O/					
VOLUMES Form 275		1				
BOXES						

T-SHEET PRINTS (List)
T-12364, TP-00584

SPECIAL REPORTS (List)
1 Title Sheet

OFFICE PROCESSING ACTIVITIES
The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				2555
POSITIONS CHECKED		2555		
POSITIONS REVISED		55		
DEPTH SOUNDINGS REVISED		220		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		-		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		-		
	TIME (MANHOURS)			
Verification of Control		6		
Verification of Position		42		
Verification of Soundings		216		
Smooth Sheet Compilation		151		
ALL OTHER WORK		22		
TOTALS		437	274	
PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE		
VERIFICATION BY <i>Nicholas Lestenkof</i>	BEGINNING DATE	ENDING DATE		
Nicholas Lestenkof, Cartographic Tech.	6-2-74	6-10-75		
REVIEW BY	BEGINNING DATE	ENDING DATE		
<i>J.T. Callahan</i>	9-15-75	11-20-75		

J.T. Callahan
Insp. Cartographer

22 hr 2/12/76 G.P.O. 1972-760-562/430 FIG. 46

REGISTRY NO. H-9404

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. _____

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

H-9404

Information for Future Presurvey Reviews

Any future survey in this area should include:

A. A greater detailed development of offshore and inshore shoal areas.

B. Verification by leadline soundings of the least depths on shoals obtained by fathometer, including the following:

<u>Sounding (fathoms)</u>	<u>Latitude</u>	<u>Longitude</u>
4.2	56°00.75'	132°27.68'
3.6	56°00.70'	132°27.60'
3.2	56°00.65'	132°26.43'
5.6	56°00.33'	132°28.51'
4.4	55.58.25'	132°27.48'

Resurvey Cycle Information

<u>Position Index</u>		<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle (Years)</u>
555	1323	2	1	50
560	1323	2	1	50

OFFICE OF MARINE SURVEYS AND MAPS
MARINE CHART DIVISION
HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9404

FIELD NO. RA-10-5-73

Alaska, Clarence Strait, McHenry Inlet and Approaches

SURVEYED: September 25 - November 8, 1973

SCALE: 1:10,000

PROJECT NO.: OPR-465

SOUNDINGS: DE-723 Depth Recorder
Ross 5000 Digital
Depth Recorder

CONTROL: Sextant Angles
on Shore Signals

Chief of Party K. W. Jeffers
Surveyed by P. Gadd
..... R. Hendershot
..... K. Jeffers
..... R. Shiro
..... E. Seymour
..... G. Stroble
..... S. Thorsen
Automated Plot by Gerber Digital Plotter
(PMC)
Verified by N. Lestenkof
Reviewed by J. T. Gallahan
..... Date: November 21, 1975
Cursory inspection made--survey R. H. Carstens
processing considered complete Date: February 17, 1976

1. Control and Shoreline

The origin of control is adequately covered in part F of the Descriptive Report.

The shoreline originates with class 1 (unreviewed) manuscripts T-12364 (1963-71) and TP-00584 (1963-73). The mean high water line is shown for guidance only; the true position is shown on the topographic surveys mentioned above.

2. Hydrography

A. Depths at crossings are in good agreement.

B. The standard depth curves were adequately delineated. The lesser depth curves were not completely defined due to the foul nature of certain inshore and offshore areas.

C. The development of the bottom configuration and determination of least depths are considered adequate except that more detailed investigation for least depths on the following shoals could have been desirable:

<u>Sounding (fathoms)</u>	<u>Latitude</u>	<u>Longitude</u>
4.2	56°00.75'	132°27.88'
3.6	56°00.70'	132°27.60'
3.2	56°00.65'	132°26.43'
5.6	56°00.33'	132°28.51'
4.4	55°58.25'	132°27.48'

No drift sounding was accomplished for least depth determination on submerged shoals.

3. Condition of the Survey

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

A. The boat sheet was the only source found for many rock positions and elevations. No recorded information for fixes was found among field edit records or hydrographic records. Considerable rock information was added to the smooth sheet during review, including rock positions taken directly from the boat sheet and revised rock elevations based on boat sheet annotations.

B. Numerous rocks on the boat sheet were shown in color, although the source is assumed to be contemporary observations. These features properly should have been shown in black to indicate a verified feature.

C. The position of the tide gage was not plotted on the smooth sheet.

4. Junctions

Adequate junctions have been effected with H-9192 (1971) on the south and H-9403 (1973) on the north. The junction with H-9401 (1975) on the west will be discussed in the review of that survey.

5. Comparison with Prior Surveys

A. H-1739 (1886) 1:20,000

This early reconnaissance survey of the McHenry anchorage area could not be effectively compared with the present survey due to the inadequate control and nature of the survey. The present survey is adequate to supersede this prior survey within the common area.

B. H-3523 (1913) 1:10,000
H-3941 (1916) 1:20,000

These prior surveys, taken together, cover the major portion of the area of the present survey.

A comparison of the depths between the present and prior surveys reveals differences as great as 5 fathoms which probably result from the more inaccurate surveying methods on the prior surveys in an area of steep slopes and irregular bottom. Several rocks awash, bottom characteristics, and soundings have been carried forward to supplement the present survey.

With these additions, the present survey is adequate to supersede the prior surveys within the common area.

C. H-3793 W.D. (1915-16) 1:40,000

No conflicts exist between the present depths and the effective drag depths. Several shoal depths from the prior survey were carried forward to the present survey.

6. Comparison with Charts 17382 (8160), latest print date
September 6, 1975
17420 (8102), latest print date
August 31, 1974
-

A. Hydrography

The majority of the charted hydrography originates with partial application of the present survey boat sheet and smooth sheet supplemented by hydrography from previously discussed prior surveys and contemporary junctional survey H-9192 (1971).

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

B. Aids to Navigation

There are no charted aids to navigation within the area of the present survey.

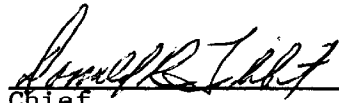
7. Compliance with Instructions

This survey adequately complies with the Project Instructions, except for determination of least depths indicated in item 2.

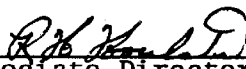
8. Additional Field Work

This is an adequate survey; however, additional development for least depths on the features identified in item 2 would be desirable.

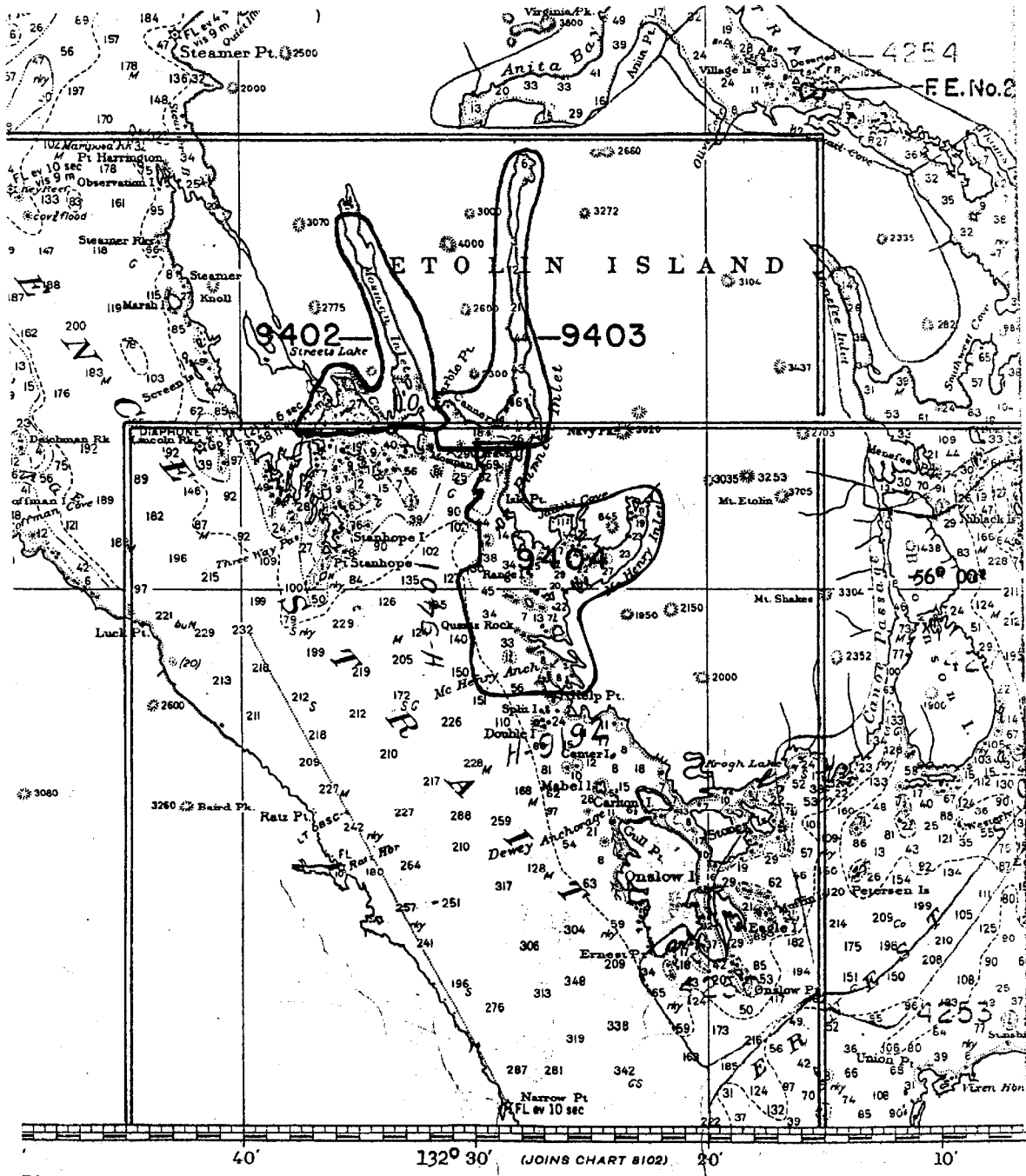
Examined and Approved:



Chief
Marine Chart Division



Associate Director
Office of Marine Surveys
and Maps



LIGHTS, BEACONS, BUOYS, AND DANGERS CORRECTED FOR INFORMATION RECEIVED TO THE FOLLOWING DATE

(Etolin Island to Midway)

Chart - 8201

Diagram #201#3

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9404

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
17382 (8160)	9-12-75	J. Bailey	Full Part Before After Verification Review Inspection Signed Via Drawing No. 13 (Proof) Exam. for critical corr. Revised depth curvas, sndgs, and rocks
8201 (17360)	10/75	Rutter	Full Part Before After Verification Review Inspection Signed Via Drawing No. Mac. 1073 thru 8102 & 8160
8160 (17382)	6-17-76	H.J. Borawski	Full Part Before After Verification, Review, Inspection Signed Via Drawing No. Added or Revised Numerous Islets and Rocks Added MLLW Ledges In Several Places Adjusted Shoreline In (2) Areas, Also Revised 10' Curves Several Places, Added Small Sandbars to Buoys
8201	7-14-77	W. S. J.	Full Part Before After Verification Review Inspection Signed Via Drawing No. States of sheet unchanged since last application No Revision at this time
8201 (17360)	3/11/78 2-2-78	KANIS W. S. J.	Full Part Before After Verification Review Inspection Signed Via Drawing No. #10 PROOF #27 APPLIED THRU CHART 8160 ADDED AND/OR REVISED SUGS - ADDED Rocks wash and REVISED 10' Curves. Revised Parts at Shoreline
17382	5/28/87	R. A. Lillis	Full Part Before After Verification Review Inspection Signed Via Drawing No. 16 prev. appl'd adequately - No Corr.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.