

7836

RESERVED

Sheet Missing as of 5/3/68

Diag. Cht. No. 9380

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. EX-2150 Office No. H-7836

LOCALITY

State ALASKA

General locality BERING SEA

Locality PORT CLARENCE

194 50

CHIEF OF PARTY

H. A. Kero

LIBRARY & ARCHIVES

DATE MAY 28, 1951

7836

RESERVED

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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

REGISTER No. H 7836

Field No. EX 2450

State Alaska

General locality Norton Sound Bering Strait Sea

Locality Port Clarence

Scale 1 : 20,000 ✓ Date of survey 27 July - 13 September 1950

Instructions dated 19 May 1950

Vessel Ship Explorer and Launches 1, 2, & 3.

Chief of party H. Arnold Karo

Surveyed by S. B. Grenell, R. C. Bolstad, J. S. Morton, M. A. Hecht,
E. L. Jones, R. H. Tryon, F. X. Popper, & R. L. Kneidler

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

Protracted by Wm. M. Martin

Soundings penciled by Wm. M. Martin

Soundings in ~~fathoms~~ feet at MLW MLLW
Boatman, Ellis.

REMARKS: Fathograms scanned by Cole, Van Overbeke, Frost, Young

Checked by BEG JEG REW FXP DFR WDB

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY H - 7836 (1950)

Field No. EX 2450

Port Clarence

Scale 1 : 20,000

1950

USC&GSS EXPLORER

H. Arnold Karo, Commanding

Surveyed by: S. B. Grenell, R. C. Bolstad, J. S. Morton, M. A. Hecht,
E. L. Jones, R. H. Tryon, F. X. Popper, R. L. Kneedler.

A. PROJECT

This survey was executed in accordance with Instructions for project CS 341 dated 19 May 1950.

B. SURVEY LIMITS AND DATES

This survey includes all the hydrography in the southern portion of Port Clarence. It extends from the south shore of Port Clarence to latitude 65°14'N. It joins sheet EX 2550 on the north and a proper junction was made. H-7837(1950)

This survey was accomplished in the period from 27 July to the 13 September 1950.. During this period hydrography was also accomplished on sheets EX 2350, 2550, 2650, 2750, and 4350.

C. VESSEL AND EQUIPMENT

The work on this sheet was done by launches 1, 2, & 3 and the ship.

Soundings were obtained in feet with the 808 type fathometer. As described in the fathometer report, corrections were applied for initial setting, draft, and velocity.

D. TIDE AND CURRENT STATIONS.

The reductions for records were taken from tidal data obtained from the tide station (portable) at Point Spencer. No time or range corrections were entered. See attached tidal note.

No current stations were observed within the limits of this sheet.

E. SMOOTH SHEET

The smooth sheet will be plotted by the Seattle processing office.

F. CONTROL STATIONS *See also Processing Office Addendum*

This survey was controlled by third order triangulation, N. A. 1927 datum, executed by H. Arnold Karo, chief of party in 1950. Hydrographic signals were located by triangulation, sextant cuts and photo field inspection. Shoran antennae were located by traverse from triangulation stations.

Corrections to the shoran were determined by calibration and applied to the shoran distances observed. (See shoran summary attached).

G. SHORELINE AND TOPOGRAPHY *from T-9650, T-9651 & T-9652 (1950)*

The shoreline detail for this survey was obtained by photo inspecting the available photographs. Shoreline and topographic details will be furnished by the Portland Photogrammetric Office.

H. SOUNDINGS

All soundings were obtained in feet by the echo method. Soundings were spaced in accordance with the instructions received. Shoal areas were closely developed. No unusual methods were used to obtain or reduce soundings.

I. CONTROL OF HYDROGRAPHY

Shoran fixes were used for the control of hydrographic lines except in the vicinity of the base line. In that area hydrography was controlled by visual fixes. A small amount of hydrography was accomplished by using a combination of visual and shoran control, that is, a shoran arc was run and an angle was taken to intercept the arc.

J. ADEQUACY OF SURVEY

This survey is complete and adequate and no holidays exist. It complies with the hydrographic manual and the project instructions. Depth curves can be drawn at the junction with *EX 2550.H-7837(1950)* *Review, par. 4.*

K. CROSSLINES

Crosslines, amounting to 10% of the hydrography completed, were run. Crosslines on the boat sheet are in satisfactory agreement. *See Review, pars. 2 & 7c.*

L. COMPARISON WITH PRIOR SURVEYS

The configuration is the same as sheet H 2519 but a careful comparison of depths cannot be made until after the smooth sheet is plotted. *(1900)* *See Review, par. 5.*
It is recommended that all previous surveys be superseded.

M. COMPARISON WITH CHART

Review, par. 6.

Same as section L.

N. DANGERS AND SHOALS

There are no dangers to navigation in this area. There is a shoal running approximately east and west about two miles north of the south shore of Port Clarence. It has a small channel thru it. On previous surveys and charts no soundings have been shown south of this shoal.

O. COAST PILOT INFORMATION.

A special report of Coast Pilot Information covering this area has already been submitted.

P. AIDS TO NAVIGATION.

There are no aids to navigation within the limits of this sheet.

Q. LANDMARKS FOR CHARTS.

A special report on Landmarks for Charts has already been submitted.


R. GEOGRAPHIC NAMES.

A special report on geographic names has already been submitted.

Respectfully submitted,

Francis X. Popper
Francis X. Popper
Lieutenant, USC&GS

Approved and forwarded:


S. B. Grenell, Commander USC&GS
Commanding Officer Ship Explorer

VELOCITY CORRECTIONS

1950

Vicinity Amchitka I.
Surveys Nos. 2150, 2250,
4150, H-7731, H-7737

Vicinity Sledge I. & Fort Clarence
Surveys Nos. 2350, 2650, 2750 & 4350.

<u>Corr'n fms</u>	<u>Depth fms</u>	(Ship) <u>Corr'n ft.</u>	<u>Depth ft.</u>	(Launch) <u>Corr'n ft.</u>	<u>Depth ft.</u>
0.0	0 to 6.0	0.0	0 to 29.0	0.0	0.0 to 08.5
-0.2	to 14.0	-0.5	to 60.0	-0.2	to 12.0
-0.4	to 22.0	-1.0	to 88.0		
-0.6	to 30.0	-2.0	to 151.0	0.0	0.0 - 19.0
-0.8	to 38.5	-3.0	to 160.0	-0.5	- 51.0
-1.0	to 46.5			-0.1	- 80.0
-1.2	to 54.5			-2.0	- 141.0
-1.4	to 63.0			-3.0	- 160.0
-1.6	to 71.0				
-1.8	to 79.0				
-2.0	to 87.0				
-2.2	to 95.0				
-2.4	to 103.5	0.0	0.0 to 19.0	0.0	0.0 to 9.0
-2.5	to 114	-0.2	to 33.5	-0.2	to 23.5
-3.0	to 134	-0.4	to 50.5	-0.4	to 38.0
-3.5	to 154	-0.6	to 60.0	-0.6	to 56.0
-4.0	to 175			-0.8	to 60.0
				-1.0	to 88.0

Surveys Nos. 2450 & 2550

VELOCITY CORRECTIONS

1950

MHC & MHC-2 FATHOMETERS

MHC & MHC-2 FATHOMETERS

Corrin. fms Depth fms.

Corrin. fms Depth fms.

(all corrections plus)

(all corrections plus)

0	0 to 220
1	221 to 380
2	381 to 500
3	501 to 595
4	596 to 673
5	674 to 741
6	742 to 800
10	801 to 1104
15	1105 to 1315
20	1316 to 1484
25	1485 to 1635
30	1636 to 1776
35	1777 to 1907
40	1908 to 2022
45	2023 to 2135
50	2136 to 2237
55	2238 to 2342
60	2343 to 2445
65	2446 to 2536
70	2537 to 2620

75	2621 to 2705
80	2706 to 2790
85	2791 to 2878
90	2879 to 2960
95	2961 to 3025
100	3026 to 3100
105	3101 to 3175
110	3176 to 3247
115	3248 to 3315
120	3316 to 3384
125	3385 to 3452
130	3453 to 3515
135	3516 to 3578
140	3579 to 3641
145	3642 to 3702
150	3703 to 3762
155	3763 to 3820
160	3821 to 3880
165	3881 to 3937
170	3938 to 4000

MHC 2000 & 4000 fm. scales

<u>Depth</u>	<u>Corrin fm.</u>
0 to 500	0
501 to 856	5 fms

As above for deeper

PART III: SHORAN ZERO SETTINGS

<u>Shore Set</u>	<u>Ship</u>	<u>Launch #1</u>	<u>Launch #2</u>	<u>Launch #3</u>
HART (lf)	99.804	99.818	99.798	99.789
TINY (hf)	99.811	99.804	99.808	99.804
SEMI	99.830			
GARE	99.821			
ROCK (hf)	99.825	99.814	99.812	99.796
DORE (lf)	99.804	99.770	99.773	99.771
DRUM (hf)	99.815	99.791	* (See below)	99.787
HILL (lf)	99.827	99.815	* (See below)	99.801

* The shoran zero settings for Launch #2 at Port Clarence were determined at two distances. The variation in zero settings between the two calibrations was proportioned to distance. This variation was attributed to the attenuation of shoran signals at line-of-sight distances.

Calibration No. 10

DRUM distance	13.820 miles
DRUM zero set	99.762 ✓
HILL distance	19.356 miles
HILL zero set	99.780 ✓

Calibration No. 12

DRUM distance	6.700 miles
DRUM zero set	99.790 ✓
HILL distance	6.909 miles
HILL zero set	99.819 ✓

From the above data the zero sets for Launch #2 are:

DRUM

HILL

<u>Distance</u>	<u>Zero Set</u>	<u>Distance</u>	<u>Zero Set</u>
0 - 7.5 miles	99.790 ✓	0 - 8.5 miles	99.819 ✓
7.5-10.0 miles	99.780	8.5-11.5 miles	99.810
10.0-12.5 miles	99.770	11.5-14.5 miles	99.800
12.5-out miles	99.762 ✓	14.5-17.5 miles	99.790
		17.5-out miles	99.780 ✓

APPROVAL SHEET

The boat sheets and records for this survey have been
inspected and approved.

A handwritten signature in cursive script, appearing to read 'S. B. Grenell', written in dark ink.

S. B. Grenell, Comdr. U SC&GS
Commanding Ship EXPLORER

H 7836(1950)

Ex 2450

Port Clarence

Processing Office Notes.

Smooth sheet.

The projection was made by hand on K & E paper N 124 H. Triangulation positions are from Pages 80,81 & 94 Vol.4 Adjusted triangulation of Alaska, and from the field computations of Karo 1950. Shoreline is from map manuscripts T 9650, and T 9652, compiled in Portland. Topographic signals were located by (radial plot on T 9650.(1950)

T-9651

(1950)

Shoal south side bay.

A two foot shoal extends across the south side of Port Clarence about two miles off the south shoreline. Note the sand bars at ϕ 65 08.4 λ 166 45.5

08.5	46.2
08.6	47.6
08.8	48.5

In the vicinity of ϕ 65 08.5 λ 166 44 the water was too shoal for the launch to operate, probably one to two feet deep. South of the line of two foot shoals there is four feet of water which extends from ϕ 65 08 λ 166 35 behind Jones Point westward across the south side of Port Clarence for 8 miles. There is said to be a three foot launch channel into this area close against the beach at the western end of the two foot shoals but it was not well revealed by the soundings. The deepest channel into this four foot area follows a small slough leading south along meridian 166 42.4 to Lat. 65 08.4, thence SW to WSW for a mile, This will carry a launch thru 4 ft. depths into the middle of the 8 mile long area of 4 ft. depths.

Might show on air photo. 5.5.3.

Soundings over shoreline.

The field party warned us to expect hydrography to overrun the shore. It did. They said for plotter to adjust the hydrography to the shoreline. He did. See soundings along shore northeastward from Jones Point, and along the western shore of the bay.

Discrepancies adjusted.
Review, par. 7d.

Crossings.

All lines of the cross line system were launch lines run at one mile intervals on arcs centered at \odot Hill. Launch lines cross launch lines satisfactorily. When launch lines cross ship lines the ship's soundings are shoaler from one to two and a half feet. This difference was known to the ship's officers. They said it might be due to squat.

Review, par. 7c.

It is recommended that one foot be added to all of the ships soundings on this sheet. *This was done!*

It is recommended that the sheet to northward,

H 7837, Ex 8550, be examined with this in mind. It is recalled (1950)

that about two feet of apparent shoaling was observed in the entrance to Port Clarence. If the ship's soundings were too shoal that would account for part or all of the difference. ✓

A comparison of Chart 9385 with H 7836 seems to show agreement with launch depths. Ship depths seem shoaler, a foot or so. *Review, pars. 5 & 6*

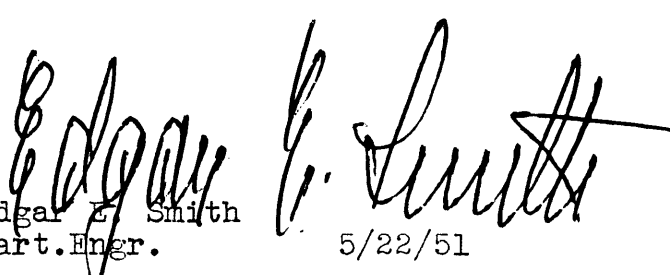
Fathograms.

In addition to the scanning and checking done by the ship's personnel the fathograms were checked for speed in the processing office. No corrections were applied. ✓

Sheet size.

After verifying sheet and transferring soundings on the three lines extending north of ϕ 65 14.9 to H 7837 this smooth sheet H 7836 can be trimmed to 31" X 53". *Do not trim per R.H.C.*

Edgar E. Smith
Cart. Engr.


5/22/51

7836

H 7836
Ex 2450

Port Clarence.

List of geographic names
penciled on smooth sheet.

Seward Peninsula

Port Clarence

Cape Riledy

Jones Point

7836

STATISTICS FOR HYDROGRAPHIC SURVEY H-7836

Field No. EX 2450

Date	Day	Vol.	Number of Pos.	Statute Miles
<u>Ship</u>				
1950				
8/23	A	1	86	36.6
8/24	B	1&2	207	92.5
8/26	C	2	<u>194</u>	<u>84.2</u>
Total for ship			487	213.3
<u>Launch No. 1</u>				
8/3	a	3	223	45.0
8/4	b	3	47	16.6
8/7	c	4	73	26.2
8/9	d	4&5	141	47.1
8/15	e	5	18	6.1
8/16	f	5	12	6.1
8/18	g	5	138	51.6
8/19	h	6	165	47.6
8/21	j	6&7	134	46.6
8/22	k	7	81	26.8
8/28	l	8	74	16.6
8/29	m	8	138	39.9
8/30	n	8	141	41.6
8/31	p	8	4	1.5
9/13	q	9	<u>156</u>	<u>31.8</u>
Total for launch 1			1545	451.1
<u>Launch No. 2</u>				
7/27	a	10	34	12.3
8/30	b	10	30	11.4
8/7	c	10	59	21.7
8/9	d	11&8	135	46.5
8/10	e	12	8	2.1
8/18	f	13	31	9.6
8/19	g	13	24	7.1
8/22	h	13	29	8.3
8/29	j	14	115	43.9
8/30	k	14	20	8.5
8/31	l	14	<u>38</u>	<u>3.9</u>
Total for launch 2			523	175.3

STATISTICS H-7836 continued

Date	Day	Vol.	Number of of Pos.	Statute Miles
Launch No. 3				
8/18	a	15	55	16.5
8/19	b	15	128	44.4
8/21	c	16	100	33.0
8/22	d	16	553	17.6
8/24	e	16&17	146	30.5
8/25	f	17	55	12.0
8/26	g	17	105	21.4
8/28	h	17&18	103	14.1
8/29	j	18	146	30.7
8/30	k	18	130	44.9
8/31	l	18	<u>49</u>	<u>13.3</u>
Total launch 3			1070	278.4
Grand total			3625	1118.1

Area equals 84 square statute miles.

7836

Tidal Note

Soundings for this survey were reduced from data obtained from the portable automatic tide gage located at Point Spencer, latitude $65^{\circ}15.4'N.$, longitude $166^{\circ}50.8'W.$

The plane of reference is MLLW. From 7 July to 25 July MLLW on the staff was 4.1 feet. From 27 July, on which day a new staff was installed, until the gage was dismantled on 14 September MLLW was 2.4 feet on the staff.

All soundings and tidal observations are based on 165th meridian time (west). No corrections for time or range of tide are necessary.

RK

TIDE NOTE FOR HYDROGRAPHIC SHEET

15 June 1951

~~DIVISION OF HYDROGRAPHY AND TOPOGRAPHY~~

Division of Charts: R. H. Carstens

Plane of reference approved in
18 volumes of sounding records for

HYDROGRAPHIC SHEET 7836

Locality : Port Clarence, Alaska

Chief of Party: H. A. Karo in 1950

Plane of reference is mean lower low water, reading
2.4 ft. on tide staff at Port Clarence (Point Spencer)
9.5 ft. below B. M. 1 (1950)

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

Condition of records satisfactory except as noted below:

E.C. McKay
Section
Chief, ~~Division of Tides and Currents.~~

GEOGRAPHIC NAMES

Survey No. H-7836

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>											1
<u>Seward Peninsula</u>										USA	2
<u>Port Clarence</u>											3
<u>Cape Riley</u>											4
<u>Jones Point</u>											5
											6
											7
											8
<u>Point Spencer</u>										(location of tide gage)	9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red are approved.
6-14-57 L. HECK

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7836.....

Records accompanying survey:

Boat sheets ³.....; sounding vols. ¹⁸.....; wire drag vols.;
 bomb vols.; graphic recorder rolls ^{19 env.}.....;
 special reports, etc. ^{1 Smooth Sheet; 1 Descriptive Report.}.....

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

Number of positions on sheet		<i>Preliminary Verification</i>	3625
Number of positions checked		
Number of positions revised		
Number of soundings revised (refers to depth only)	<i>Settlement & Squat -</i>		1876
	<i>rescanning</i>		213
Number of soundings erroneously spaced		
Number of signals erroneously plotted or transferred		
Topographic details	Time		<i>1 hr</i>
Junctions	Time		<i>1 hr</i>
Verification of soundings from graphic record	Time		<i>20 hrs.</i>
Verification by.....	Total time	Date	<i>37 hrs 10/18/51</i>
			<i>110 " 1/27/52 TJS</i>
Reviewed by.....	Time	Date	<i>16 hrs. 1 Febr. 1952</i>

STIRNI 3 HOURS

DIVISION OF CHARTS
REVIEW SECTION - NAUTICAL CHART BRANCH
REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7836

FIELD NO. EX-2450

Alaska, Bering Sea, Port Clarence

Project No. CS-341

Surveyed in July - September 1950

Scale 1:20,000

Soundings:

808 Fathometer
Hand lead

Control:

Shoran
Sextant fixes on shore signals

Chief of Party - H. A. Karo
Surveyed by - S.B. Grenell, R.C. Bolstad, J.S. Morton, M.A.
Hecht, E.L. Jones, R.H. Tryon, F.X. Popper and
R.L. Kneedler
Protracted by - W. M. Martin
Soundings plotted by - W. M. Martin
Verified and inked by - E. Thomas and T. L. Janson
Reviewed by - T. A. Dinsmore, 1 February 1952
Inspected by - R. H. Carstens

1. Shoreline and Control

The origin of the shoreline and control is given in the Descriptive Report.

2. Sounding Line Crossings

After the application of the corrections mentioned in paragraph 7c, depths at crossings are in very good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

The narrow shoal uncovering at M.L.L.W. in the vicinity of lat. $65^{\circ} 08.45'$, long. $166^{\circ} 46.00'$, and the trough cutting through the shoal in lat. $65^{\circ} 08.4'$, long. $166^{\circ} 42.4'$, are the only unusual bottom features apparent in the area. The

bottom is smooth.

4. Junctions with Contemporary Surveys

The junctions with H-7837 (1950) on the north will be considered in the review of that survey.

5. Comparison with Prior Surveys

H-2519 (1900) 1:40,000

A comparison of prior and present depths indicates that some bottom changes have taken place. On the prior survey, the low-water line falls as much as two miles offshore along the southern shore of Port Clarence. However, inasmuch as no prior soundings were taken back of the low-water line, it is not certain whether the inshore unsurveyed area previously uncovered at M.L.L.W. or a continuous offlying bar existed here. The latter situation appears more probable. The bar is now largely covered by depths of 1 to 2 ft.

In depths greater than 6 ft., present depths are generally 1 to 3 ft. shoaler than the prior depths. Some of the latter differences are probably due to varying results from leadline and fathometer sounding in areas of soft bottom.

The rock awash charted in lat. $65^{\circ} 09.22'$, long. $166^{\circ} 30.30'$, from H-2519 should be disregarded. Originating with a sunken rock symbol on T-2529 (1900), the rock was erroneously transferred to H-2519 as a rock awash. A 1-ft. sounding on the present survey is adequate for charting.

A few bottom characteristics have been retained from the prior survey in localities where little or no bottom changes were apparent. With these additions, the present survey is adequate to supersede the prior survey within the common area.

6. Comparison with Chart 9385 (Latest print date 10/1/51)

A. Hydrography

Charted hydrography originates principally with the prior survey which needs no further consideration. A few offshore soundings have been applied to the chart from the present survey prior to verification and review. The present survey entirely supersedes the charted hydrography.

B. Aids to Navigation

No aids to navigation are charted within the limits of the present survey. There are no dangers to navigation in the area. However, small boats navigators should beware of the shoal uncovering in spots off the southern shore of Port Clarence.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was accurately done.
- c. At crossings between the ship and launch work, ship soundings were from 1 to 2 ft. shoaler than the launch soundings. Depths at crossings of the three launches are in excellent agreement. An additive correction of 1 ft. applied to the ship soundings has effected agreement with the depths obtained by the launches. The discrepancies were considered by the ship's officers to be probably due to the squat of the ship but had not been corrected in the field.
- d. Although an attenuation correction was applied to the shoran distances controlling the work of Launch No. 2, it appears that a similar correction should have been derived for Launch No. 1. Northeast of Jones Point, the positions of an inshore meander line by Launch No. 1 fall from 20 to 40 meters inshore from their correct positions in respect to the shoreline. In lieu of an attenuation correction, the sounding line was adjusted to the shoreline from estimated distances furnished in the sounding records.

8. Compliance with Project Instructions

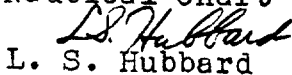
The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is an excellent basic survey and no additional field work is required.


H. R. Edmonston

Chief, Nautical Chart Branch


L. S. Hubbard

Chief, Section of Hydrography

Examined and approved:


H. Arnold Karo

Chief, Division of Charts


W. M. Scaife

Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7836

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8/8/51	9385	C.R. Wittmann	Before After Verification and Review <i>Applied in part.</i>
3/31/52	9380	Evans	Before After Verification and Review <i>partially applied - critical edges only.</i>
10/5/54	9302	JAE	Before After Verification and Review
12/6/55	Reconst. 9380	JAE	Before After Verification and Review <i>Ver. no. ch't 9369 gmo</i>
2/1/56	9402	SA McGam	Before After Verification and Review
6/20/56	9369	JAE	Before After Verification and Review
2-13-58	9400	RKD	Before After Verification and Review <i>then ch't 9402</i>
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review

M-2168-1

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