

8074

Diag. Cht. No. 8802-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey ..... HYDROGRAPHIC

Field No. PF-2253 ..... Office No. H-8074

LOCALITY

State ..... ALASKA

General locality ..... PRIBILOF ISLANDS

Locality EAST OF ST. PAUL ISLAND

19~~52~~ 53

CHIEF OF PARTY

K. G. CROSBY

LIBRARY & ARCHIVES

DATE

April, 1954

CS-343

8074

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-8074

Field No. PF-2253

State ALASKA

General locality PRIBILOF ISLANDS

Locality East of ST. PAUL ISLAND

Scale 1:20,000 (1:10,000 insert) Date of survey 17 July 1953- 5 Sept. 1953

Instructions dated 6 March 1951; 21 March 1952; 2 March 1953; 7 April 1953.

Vessel USCGCSS PATHFINDER - Launches 1, 2, and 3.

Chief of party K. G. Crosby

Surveyed by M.E. Wennermark, H.D. Nygren, H.P. Demuth, B.E. Greene, and L. R. Whitney.

Soundings taken by fathometer, graphic recorder, ~~hand level~~

Fathograms scaled by Ship's Officers

Fathograms checked by Ship's Officers

Protracted by C. D. Upham, L. C. Larson

Soundings penciled by C. D. Upham

Soundings in fathoms ~~feet~~ at ~~MLLW~~ and are true depths.

REMARKS: PF-1453. A 1:10,000 scale visual survey, will be referred to as "The 1:10,000 Scale Insert" throughout this Report.

*205*

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SURVEY H-8074 (Field No. PF-2253)

NORTHEAST OF ST. PAUL ISLAND

PRIBILOF ISLANDS

BERING SEA

ALASKA

Scale 1:20,000 (1:10,000 Insert)

1953

USC&GSS PATHFINDER  
Hydrography By

K. G. Crosby, Commanding  
M. E. Wennermark, Cdr.  
H. D. Nygren, Lt.  
H. P. Demuth, Lt.(jg)  
B. E. Greene, Ens.  
L. R. Whitney, Ens

A. PROJECT

1. Project GS 343, Bering Sea, Alaska
2. Instructions 22/MEK, 6 March 1951
3. Supplemental Instructions 22/MEK, 21 March 1952
4. Supplemental Instructions 22/MEK, 2 March 1953
5. Supplemental Instructions 22/MEK, 7 April 1953

B. SURVEY LIMITS AND DATES

This survey covers the area northeast of St. Paul Island. See Index of Hydrographic Surveys (Sheet Layout) Included with this report. The area is bounded on the east by Long.  $169^{\circ} 54' 00''$  W extending north to Lat.  $57^{\circ} 20' 00''$  N between Long.  $169^{\circ} 54' 00''$  W and  $169^{\circ} 56' 30''$  W and is bounded on the south by Lat.  $57^{\circ} 10' 00''$  N. On the west it is bounded by the northeast shore of St. Paul Island between Lat.  $57^{\circ} 10' 00''$  N and  $57^{\circ} 15' 00''$  N and by Long.  $170^{\circ} 03' 45''$  W north to Lat.  $57^{\circ} 18' 00''$  N extending north to approximately Lat.  $57^{\circ} 20' 00''$  N between Long.  $170^{\circ} 02' 00''$  W and  $170^{\circ} 06' 00''$  W. The survey is also bounded on the north by Lat.  $57^{\circ} 17' 15''$  N between Long.  $169^{\circ} 56' 30''$  W and  $170^{\circ} 00' 45''$  W.

Fieldwork began on 17 July 1953 and ended on 7 September 1953.

In part this survey lies within prior survey H-7948 (PF-4151), a 1:40,000 scale survey started in 1951. It joins contemporary survey H-8076 (PF-2453) on the southwest and contemporary survey H-8075 (PF-2353) on the west. This survey also joins contemporary survey H-8077 (PF-1353) on the latter's south, east, and west sides. (H-8077 is practically surrounded), and contemporary survey H-8073 (PF-4253) on the north and west.

See 74  
of Review

### C. VESSELS AND EQUIPMENT

Hydrography was done by PATHFINDER launches 1, 2, and 3. No standard turning radii <sup>etc</sup> were determined or used.

Echo sounding equipment consisted of 808 type graphic recording Fathometers with keel mounted acoustic units. Fathometer numbers were as follows: Launch 1, 52s; Launch 2, 74s and 68s; Launch 3, 46s.

Colors used for position numbers and day letters are as follows: Launch 1, green; Launch 2, blue; Launch 3, purple.

### D. TIDE AND CURRENT STATIONS

A tide station to control the survey was established at Village Cove, St. Paul Island. As this tide station was out of commission on 6, 7, 8, and 9 August, tides for these days were derived from the standard tide gage at Dutch Harbor. Hourly heights were furnished by the Washington Office in Director's letter dated 13 October 1953, reference No. 36-rjb. Time and range ratios have been applied.

Current observations were made aboard the PATHFINDER on those days that the ship acted as a floating SHORAN station while anchored Northwest of Walrus Island.

### E. SMOOTH SHEET

The Smooth sheet projection was made by conventional means and the shoran ~~area~~ <sup>area</sup> and stations were located thereon at the Seattle Processing Office. Hydrographic signals on the "1:10,000 scale insert" (See remarks Title Sheet) were transferred from topographic sheet PF-D-53 aboard ship at the time that the sheet was plotted. *PF-D-53 marked for destruction, as all pertinent info. on same was transferred to H-8074.*

Shoreline was transferred from a planetable survey by Remont Morse and G. R. Putnam in 1897, Reg. No. 2295A, <sup>and 2297</sup> by the use of a projector at the Seattle Processing Office.

Soundings were penciled to fathoms and tenths from 0 to 11 fathoms and to the nearest half fathom in depths greater than 11 fathoms because of the flat character of the bottom.

### F. CONTROL STATIONS

All control used in this survey was reduced to N. A. 1927 datum. The survey was controlled by electronic means (SHORAN) with the exception of the "1:10,000 scale insert" on which all control was visual.

Signals on the "1:10,000 scale insert" were located by graphic control methods on a 1:10,000 scale topographic sheet (PF-D-53) covering the area of this survey. Additional signals were located by sextant cuts.

To control hydrography on the greater part of the survey, two SHORAN stations were established on St. Paul Island at points located by third order triangulation.

\* magnetic variation at Walrus Id 2, 1953, at 1600, July 16, 1953 was 14°58'E.

SHO-NUF, 1953, was located by Capt. K. G. CROSBY; SHO-FAIR, 1951, was located by Capt. CHARLES PIERCE.

A third SHORAN station was aboard the ship PATHFINDER which anchored northwest of Walrus Island acting as a floating station. In the records of the survey this floating station is called SHO-BOAT. On the days that station SHO-BOAT was used, its position with reference to WALRUS ID. 2, 1953 was observed very closely and its position located by sextant angles from hydrographic signals on Walrus Island. These fixes were taken and recorded hourly and at shorter intervals when such action was deemed necessary. Wind and Current observations were also made to determine their effect on movement of the ship. The position of the ship was sent out to the launches each hour so that the work could be controlled accurately on the boat sheet. The ship's position was plotted on the boat sheet on bearing and distance from WALRUS ID. 2, 1953 each hour and arcs were re-drawn in pencil with the use of a beam compass.

The record of the ship's position and the topographic sheet (PF-D-53) is forwarded as a part of the records of this survey.

#### G. SHORELINE AND TOPOGRAPHY

The shoreline on this survey was taken from a planetable survey by Fremont Morse and G. R. Putnam in 1897, Reg. No. 2295A and has not been inked with the thought that it may be superseded in the near future by a more recent topographic survey. *Shoreline to be inked when contemporary air-photo compilations are available. - 1M2 - 5-15-54*

The low water line is not defined as the tide range was not sufficient to permit sounding over the plane of reference.

#### H. SOUNDINGS

All soundings were measured in fathoms by 808 Type Graphic Recording Fathometers calibrated to 800 fm/sec. Initial corrections were scaled from the fathograms and index corrections were determined from an abstract of bar checks taken daily during the progress of the survey.

All fathograms are legible and complete.

#### I. CONTROL OF HYDROGRAPHY

Hydrography was controlled by Shoran stations SHO-NUFF, SHO-FAIR, and SHO-BOAT, except for the "1:10,000 scale insert" which was controlled by visual means; control stations were located as described in Section F.

As the signals from SHO-BOAT originated from the ship which was not stationary it was necessary to locate its position periodically as mentioned in Section F. For convenience in protracting antenna positions involving SHO-BOAT, a graphic representation was prepared on polar coordinate paper of the ship's position with reference to WALRUS ID. 2, 1953 for those times of day that the three point fixes were originally taken and recorded.

Using the original visual angles the ships position was very carefully plotted and the bearings and distances scaled. These values were checked against the values determined in the field (values used for control on the boat sheet) and were re-checked for error where large discrepancies occurred.

When the movement between visual fix positions was not in excess of 80 meters, only these positions were used, but if this distance exceeded 80 meters a corrected position was plotted at 1/2 the time interval between the fix positions. The bearings and distances of these intermediate positions from WALRUS ID. 2, 1953, were also scaled from the polar co-ordinate paper.

An abstract of these ships positions was made and will be included along with the co-ordinate plot of positions in the records of this survey.

An example of how these positions were used as to time interval is as follows: If positions were determined for 0800, 0900, 1000, 1100, etc. the 0800 position was used until 0830 and the 0900 position was used from 0830 until 0930, etc. Intervals are adequately defined in the remarks column of the records in colored pencil.

A study of current and wind effects on the ship discouraged an attempt to weigh or proportion ship movement. Also the fact that fixes were taken at the beginning and end of the ships swing made this unnecessary.

Those launch positions involving SHO-BOAT were protracted using the following method: An acetate overlay was made upon which SHORAN arcs were drawn exactly matching those shoran arcs which had been drawn on the smooth sheet with origin at WALRUS ID. 2, 1953. The origin of the arcs drawn on the overlay was located on the overlay. A compass rose was placed on the smooth sheet with its center directly over WALRUS ID. 2, 1953, and oriented with respect to azimuth. The ships position was then plotted on the compass rose by bearing and distance from WALRUS ID. 2, 1953, and the origin of the arcs on the acetate overlay was placed directly over the plotted ships position. As the protracting progressed this procedure was repeated and the acetate overlay was shifted to coincide with the ships position as it changed during each days work.

During the protracting of the smooth sheet a steady distortion was noted; a stretching along the meridians at the northeast corner of the sheet. As there was no distortion in the acetate overlay the arcs on the overlay had to be redrawn to coincide with the arcs which were drawn on the smooth sheet with origin at WALRUS ID. 2, 1953, and which had distorted those areas of the sheet mentioned above. With the arcs re-drawn on the overlay the work was continued as outlined in the previous paragraph, the distortion being checked each day and corrected for in the above mentioned manner.

The maximum error in launch position that could occur using this overlay method, for a maximum of 80 meters between plotted ships positions, would be 40 meters. However, these large ship movements (as taken from the co-ordinate plot) were always along a NE - SW line through the ships position.

As only a very small part of the survey is on this NE - SW bearing from the ships position, the possible error in launch position was proportionally reduced from a maximum of 40 meters on the NE - SW line to zero on the NW - SE line through the ships positions.

No other difficulty was encountered in the protracting except for a small number of positions along the shore directly south of station SHO-NUFF where their intersection of shoran lines between station SHO-NUFF and SHO-FAIR is weak. These positions were adjusted on time and course using the boat sheet as reference. Shoran corrections are abstracted with this report, and are discussed in "EPI AND SHORAN DESCRIPTIVE REPORT - 1953" Ship PATHFINDER. (Filed with H-8073-1953)

Some difficulty was encountered in protracting the positions on the "1:10,000 scale insert" because of weak fixes which had to be adjusted on time and course.

#### J. ADEQUACY OF SURVEY

This survey is complete and adequate to supercede prior surveys for charting. No holidays exist within the limits of the survey.

Satisfactory junctions are made with adjoining surveys, and depth curves can be adequately drawn at the junctions.

#### K. CROSSLINES

Approximately 10% crosslines were run. Crosslines were satisfactory and no systematic discrepancy was noted. Occasional differences of 0.5 fm. were noted and in each case could be due to either a slight displacement of the line due to the interpolated SHO-BOAT position or a tide reducer causing a 1/2 fathom change in the plotted sounding.

*Depths at  
Crossings  
are adequate  
See P 2  
of Review*

#### L. COMPARISON WITH PRIOR SURVEYS

A comparison between soundings on this survey and those on H-7948 (1951, 1:40,000) was made and found to be good. The rocks awash located at Lat. 57° 11' 09" N Long. 169° 56' 11" W on H-7948 (1951, 1:40,000) was not found on this survey. The existence of this feature was not noted until this comparison was made and no information was available on the Ship PATHFINDER at the time of writing this report as to its origin or the methods by which it was located. The PATHFINDER anchored in the vicinity of WALRUS ID. on an approximate NW line through WALRUS ID. 2, 1953 at a distance of approximately 500 to 900 meters while acting as a floating shoran station during the progress of this survey and this rock awash as plotted on the prior survey was at no time seen by the ships officers. This, along with the fact that the feature was at no time seen during the progress of launch hydrography, both visually and shoran controlled, conducted in its immediate vicinity, would seem to indicate that its location, if not its existence, is doubtful. There is a possibility that this rock awash is the same one used as hydrographic signal PAL on the "1:10,000 scale insert" as both locations are relatively close together.

*Rock awash  
transferred  
out of posi-  
tion to H-7948  
from Chart No.  
8996 "Pal"  
on H-8074  
is believed  
to be located  
on this rock.*

M. COMPARISON WITH CHART

This survey was compared with C & G S Chart 8994 (1:50,000, 4/6/53) which is the largest scale chart covering this area. In general the agreement is good. However, the segment of the 20 fathom depth curve charted in the vicinity of Lat. 57° 11' 55" N, Long. 169° 57' 15" W, was not found in existence by this survey. *Curve and 20fm sdg. deleted from Chart 8994 (Drawing 4-6-54)*

N. DANGERS AND SHOALS

No new dangers or shoals were found on this survey that have not been adequately shown on the charts covering the area. The shoals as charted in this area are substantially correct.

O. COAST PILOT INFORMATION

A detailed report on Coast Pilot Information has been submitted. See "COAST PILOT NOTES - 1953," (Ship PATHFINDER.)

P. AIDS TO NAVIGATION

None

Q. LANDMARKS FOR CHARTS

None

R. GEOGRAPHIC NAMES

All geographic names shown on this survey sheet are presently charted. No change or additions are recommended. See "GEOGRAPHIC NAMES LIST", this report.

S. - Y. NOT APPLICABLE

Z. TABULATION OF APPLICABLE DATA

<u>NAME</u>	<u>DATE FORWARDED</u>
1. EPI and SHORAN DESCRIPTIVE REPORT, 1953	10 Dec 1953 <i>Filed with H-8073</i>
2. FATHOMETER DESCRIPTIVE REPORT, 1953	10 Dec 1953 " "
3. COAST PILOT NOTES, 1953	Nov 1953
4. TRIANGULATION DATA, ST. PAUL ISLAND, 1953	10 Nov 1953
** 5. TOPOGRAPHIC SHEET PF-D-53 <i>(marked for destruction)</i>	
** 6. CURRENT RECORDS, 1953	
** 7. SHIP AND BUOY POSITIONS, ST. PAUL ISLAND, 1953	
** 8. POLAR CO-ORDINATE PLOT OF SHIPS POSITION, ST. PAUL ISLAND, 1953	
9. TIDAL DATA, ST. PAUL ISLAND, 1953	3 Aug, 13 Oct, 21 Oct 1953

\*\* To be forwarded with Smooth Sheet as part of records.

Respectfully submitted,

*Clinton D. Upham*  
CLINTON D. UPHAM  
Ensign, U.S.C.&G.S.



APPROVED AND FORWARDED:



K.G. CROSBY  
CAPT., USC&GS  
COMDG., SHIP PATHFINDER

TIDE NOTE

HYDROGRAPHIC SURVEY H-8074 (FIELD NO. DF-2353)

SHIP PATHFINDER, CS-343

1 9 5 3

Records from the portable automatic tide gage maintained at Village Cove, St. Paul Island, Alaska (Lat.  $57^{\circ}07'30''$ , Long.  $170^{\circ}16'30''$ ) during the period of the field work were used in the reduction of soundings for tide, except as noted in Section D, when corrected tides obtained from the tide station at Dutch Harbor were used for work done on 6-9 August 1953.

M.L.L.W. on the tide staff corresponds to a reading of 3.4 feet through 16 August 1953 then to a reading of 3.1 feet for the remaining period of work.

Hourly heights for the reduction of soundings were scaled from the marigrams in the field.

ABSTRACT OF SHIP POSITIONS (SHO-BOAT)

HYDROGRAPHIC SURVEY H-8074(PF-2253)

SHIP PATHFINDER

1 9 5 3

The following values were used in the protracting of the smooth sheet and were determined by a polar coordinate plot of the ship's position. See "Plot of Ship's Position (SHO-BOAT)", records this survey.

Date	Time of Position	Time Used	Ship's Shoran Antenna (SHO-BOAT) Bearing from Walrus Id. 2, 1953	Distance (meters)	
July 17	0811	0811-0835	True 295°	258	
	0900	0835-1030	295	868	
	1100	1030-1130	295	847	
	1200	1130-1230	295	846	
	1300	1230-1330	294	836	
	1400	1330-1430	291	864	
	1500	1430-1530	291	861	
	1600	1530-1630	291	861	
	18	0800	0800-0830	296	865
		0900	0830-0930	295	868
		1000	0930-1030	296	875
		1100	1030-1130	295	860
		1200	1130-1230	295	844
		1300	1230-1330	294	846
		1400	1330-1430	293	832
		1500	1430-1530	292	852
1600		1530-1630	290	876	
1700		1630-1730	290	882	
19	0800	0800-0830	295	880	
	0900	0830-0930	296	883	
	1000	0930-1030	296	873	
	1100	1030-1130	295.5	860	
	1200	1130-1230	296	847	
	1300	1230-1330	295	832	
	1400	1330-1430	295	828	
	1500	1430-1530	292	823	
	1600	1530-1630	287.5	861	
	1700	1630-1730	287	886	
20	1715	1730-end	287	886	
	0800	0800-0830	296	820	
	0900	0830-0930	296	824	
31	1000	0930-1030	296.5	860	
	0800	0800-0830	303	690	
	0900	0830-0930	304	680	

Date 1953	Time of Position	Time Used	Ship's Shoran Antenna (SHO-BOAT) Bearing from Walrus Id. 2, 1953	Distance (meters)	
July 31	1000	0930-1030	True 304 <sup>0</sup>	665	
	1100	1030-1130	303	637	
	1200	1130-1230	296	655	
	1300	1230-1330	294	662	
	1400	1330-1430	294	677	
	1500	1430-1530	294	673	
	1600	1530-1618	295	685	
	1637-30	1618-45-1656-15	299 (Assumed Position)	684	
	1715	1656-15-end	303	683	
Aug. 7	0800	0800-0830	298	585	
	0900	0830-0915	298	594	
	0930	0915-0945	302.5 (Assumed Position)	600	
	1000	0945-1030	307	607	
	1100	1030-1130	310	556	
	1200	1130-1230	309.5	568	
	1300	1230-1330	308	580	
	1400	1330-1430	310	590	
	1500	1430-1530	310	584	
	1600	1530-1630	310	583	
	1700	1630-1730	310	558	
	8	0800	0800-0830	297	543
		0900	0830-0930	297	552
		1000	0930-1030	297	552
		1100	1030-1130	300.5	556
		1200	1130-1220	308	537
1240		1220-1250	307	558	
1300		1250-1330	307	550	
1400		1330-1430	307	567	
1500		1430-1530	307	568	
1600		1530-1630	308.5	560	
1700	1630-end	308	551		
Sept. 7	0900	0900-0915	287	564	
	0930	0915-0945	287	548	
	1000	0945-1030	287	556	
	1100	1030-1115	288	578	
	1130	1115-1145	292	585	
	1200	1145-1222-30	299	545	
	1245	1222-30-1252-30	302	567	
	1300	1252-30-1330	301.5	567	
	1400	1330-end	303.5	601	

ABSTRACT OF FATHOMETER CORRECTIONS  
HYDROGRAPHIC SURVEY H-8074 (PF-2253)

Ship PATHFINDER

CS 343

1953

<u>LAUNCH NO.</u>	<u>DAY LETTER</u>	<u>FATH. NO.</u>	<u>A SCALE CORR'N. FATH.</u>
1	a - j green	52S	+0.3
2	a - b blue	74S	-0.1
	c - k blue	68S	+0.2
3	a - k purple	46S	+0.2

ABSTRACT OF SHORAN CORRECTIONS  
 HYDROGRAPHIC SURVEY H-8074 (PF-2253)

Ship PATHFINDER

CS 343

1953

<u>LAUNCH</u>	<u>DAY</u>	<u>STATION</u>	<u>CORR'N. STAT. MILES</u>
1	a (green)	BOAT	+0.010
		NUF	-0.010
	b (green)	BOAT	+0.001
		NUF	+0.013
	c (green)	BOAT	+0.004
		NUF	-0.013
	d (green)	BOAT	+0.005
		NUF	-0.011
	e (green)	FAIR	-0.011
		NUF	-0.013
	f (green)	BOAT	+0.007
		NUF	-0.013
	g (green)	FAIR	-0.009
		NUF	-0.011
h (green)	FAIR	-0.009	
	NUF	-0.010	
2	a (blue)	BOAT	+0.009
		FAIR	+0.006
	b (blue)	BOAT	+0.015
		FAIR	+0.012
	c (blue)	BOAT	+0.019
		FAIR	+0.012
	d (blue)	BOAT	+0.017
		NUF	+0.014
	e (blue)	BOAT	+0.012
		NUF	+0.009
	f (blue)	BOAT	+0.011
		NUF	+0.009
	g (blue)	BOAT	+0.013
		NUF	+0.012
h (blue)	FAIR	Pos 1-14 -0.002	
	BOAT	Pos 39-36 -0.002	
j (blue)	FAIR	Pos 64-156 -0.014	
	NUF	-0.003	
k (blue)	FAIR	+0.012	
	NUF	+0.012	
3	a (purple)	BOAT	+0.014
		NUF	+0.013
		NUF	-0.003

ABSTRACT OF SHORAN CORRECTIONS (continued)

<u>LAUNCH</u>	<u>DAY</u>	<u>STATION</u>	<u>CORR'N. STAT. MILES</u>
3	b (purple)	BOAT	+0.014
		NUF	-0.004
	c (purple)	BOAT	+0.012
		NUF	-0.005
	d (purple)	BOAT	+0.017
		NUF	-0.001
	e (purple)	BOAT	+0.011
		NUF	+0.004
	f (purple)	FAIR	-0.002
		NUF	-0.002
	g (purple)	BOAT	+0.014
		NUF	-0.001
	h (purple)	BOAT	+0.041
		NUF	+0.007
	j (purple)	FAIR	+0.026
		NUF	+0.009
	k (purple)	FAIR	-0.001
		NUF	+0.009

STATISTICS

HYDROGRAPHIC SURVEY H-8074 (PF-2253)

Ship PATHFINDER

CS 343

1953

<u>VOL. NO.</u>	<u>LAUNCH</u>	<u>DAY</u>	<u>DATE</u>	<u>NO. of POS.</u>	<u>STAT. MI. SDG LINES</u>
1	1	a (green)	18 July	46	12.4
1	1	b (green)	19 July	91	23.7
1	1	c (green)	20 July	26	6.4
2	1	d (green)	31 July	190	56.9
1 & 3	1	e (green)	6 Aug	137	46.9
3	1	f (green)	7 Aug	183	56.8
4	1	g (green)	8 Aug	182	60.1
4 & 5	1	h (green)	9 Aug	171	55.8
5	1	j (green)	7 Sept	91	27.0
6	2	a (blue)	17 July	41	13.2
6	2	b (blue)	18 July	27	9.5
6	2	c (blue)	19 July	68	20.9
6	2	d (blue)	20 July	38	12.0
6 & 7	2	e (blue)	31 July	116	37.7
8	2	f (blue)	6 Aug	137	45.6
7	2	g (blue)	7 Aug	156	51.6
8 & 9	2	h (blue)	8 Aug	204	57.3
9	2	j (blue)	9 Aug	133	35.8
9	2	k (blue)	7 Sept	34	9.8
10	3	a (purple)	17 July	17	4.8
10	3	b (purple)	18 July	27	11.4
10	3	c (purple)	19 July	24	12.1
10	3	d (purple)	20 July	39	9.5
10	3	e (purple)	31 July	41	12.6
11	3	f (purple)	6 Aug	125	46.3
11 & 12	3	g (purple)	7 Aug	105	36.1
12	3	h (purple)	8 Aug	147	52.3
12 & 13	3	j (purple)	9 Aug	127	43.2
13	3	k (purple)	7 Sept	50	17.5

1:10,000 SCALE INSERT

14	1	a (green)	17 July	106	16.6
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TOTAL 2,879 901.8

AREA OF SURVEY 82 SQUARE STAT. MI.



ABSTRACT OF HYDROGRAPHIC SIGNALS  
HYDROGRAPHIC SURVEY H-8074 (PF-2253)

Ship PATHFINDER

CS 343

1953

NAME USED IN  
HYDROGRAPHIC SURVEY

ORIGIN OF STATION

BOAT	See folder "Plot of Ship's Position (SHO-BOAT)
BOB	PF-D-53
BOT	Vol. 14
CROSS	PF-D-53
FAIR	SHO-FAIR, 1952 <sup>1</sup>
MID	PF-D-53
NOR	PF-D-53
NUF	SHO-NUF, 1953
PAL	Vol. 14
ROC	Vol. 14
SOW	PF-D-53
WAL	WALRUS ID. 2, 1953

ABSTRACT OF GEOGRAPHIC NAMES

HYDROGRAPHIC SURVEY H-8074(Field No. PF-2253)

CS 343

Ship PATHFINDER

1953

BERING SEA  
NORTHEAST POINT  
ST. PAUL ISLAND  
WALRUS ISLAND

20' 171°00' 40' 20' 170°00'

PF-8153 H-8072

PF-4253 H-8073

PF-2253 H-8074

PF-2353 H-8075

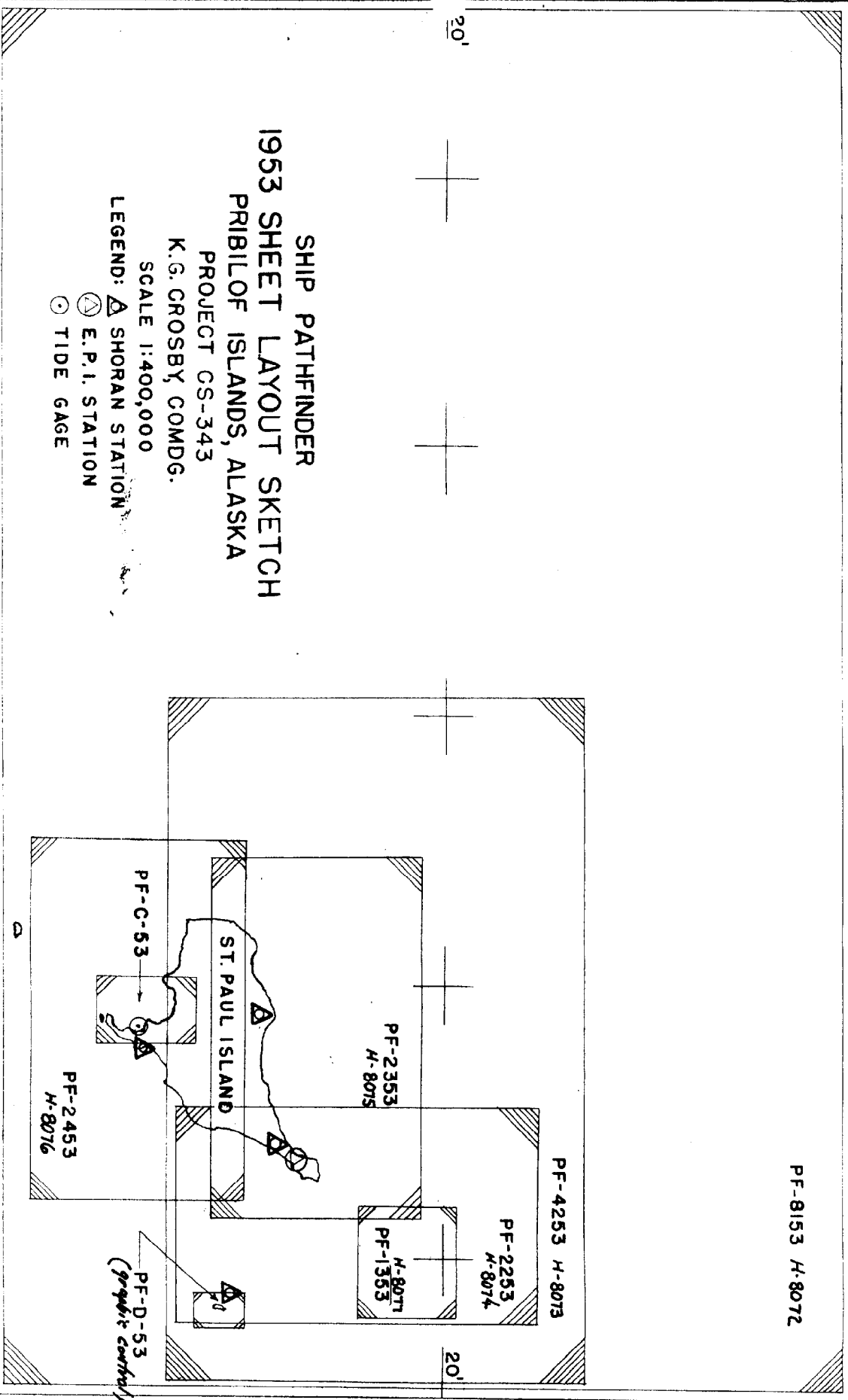
PF-1353 H-8077

ST. PAUL ISLAND

PF-C-53

PF-2453 H-8076

PF-D-53 (graphic control)



SHIP PATHFINDER  
 1953 SHEET LAYOUT SKETCH  
 PRIBILOF ISLANDS, ALASKA  
 PROJECT CS-343  
 K.G. CROSBY, COMDG.

SCALE 1:400,000  
 LEGEND:  $\Delta$  SHORAN STATION  
 $\odot$  E.P.I. STATION  
 $\circ$  TIDE GAGE

57°00' 20' 171°00' 40' 20' 170°00' 57°00'

APPROVAL SHEET  
HYDROGRAPHIC SURVEY H-8074 - ST. PAUL ISLAND  
PRIBILOF ISLANDS  
ALASKA

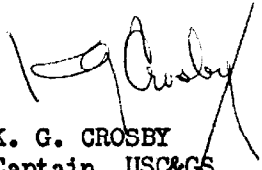
The hydrography accomplished during the course of this survey was inspected each day after the launches returned to the ship at the close of each days work. Additional hydrography was suggested during these periods and usually accomplished the next following work day.

During the smooth plotting of the survey the protracting and plotting of soundings were inspected daily.

I consider the survey complete and adequate and no additional field work is recommended.

The method of plotting the launches positions has been given in great detail to give the verifier knowledge of how this work was accomplished in case position discrepancies arise when the sheet is being verified.

This survey is approved.



K. G. CROSBY  
Captain, USC&GS  
Chief of Party

GEOGRAPHIC NAMES

Survey No. H-8074

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
<u>Alaska</u>				(for title)							1	
<u>Pribilof Islands</u>				"					BCN		2	
<u>St. Paul Island</u>											3	
<u>Northeast Point</u>											4	
<u>Walrus Island</u>											5	
<u>Bering Sea</u>										BCN	6	
				Names approved 5-6-54,								7
				<i>h. Heck</i>								8
											9	
<u>Village Cove</u>				(St. Paul Island)	(tide station)						10	
											11	
											12	
											13	
											14	
											15	
											16	
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											21	
											22	
											23	
											24	
											25	
											26	
											27	

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8074...

Records accompanying survey:

Boat sheets ..4..; sounding vols. ..14..; wire drag vols. ....; bomb vols. ....; graphic recorder rolls 3. Env.; special reports, etc. 1 Smooth Sheet; 1 Descriptive Report; 1 Cahier containing Ship's Position(SHO-BOAT) & Plot of Ship's Position(SHO-BOAT) & 1 Sketchbook;

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

Number of positions on sheet	.....	2879	2479
Number of positions checked	.....	43	346
Number of positions revised	.....	4	0
Number of soundings revised (refers to depth only)	.....	100*	(approx)
Number of soundings erroneously spaced	.....	50**	(approx) <sup>27</sup>
Number of signals erroneously plotted or transferred	.....	0	✓
Topographic details	Time .....	5	✓
Junctions	Time .....	8	✓
Verification of soundings from graphic record	Time .....	16	16
Prel. Verif. by - I. M. Zeskind	81	6-10-54	
Verification by <i>J. L. Chamberlain</i>	Total time 1.80	Date 10-23-57	
<i>Curves taken by J. S. McMillan</i>	66 hrs	6-21-65	
<i>Junctions by I. M. Zeskind</i>	Time 2.6	Date 6-15-54	
<i>Addendum Review by J. S. McMillan</i>	22	6-21-65	

\* In many instances the field party did not make proper allowance for Kelp or Wave action when reading the fathograms.

\*\* In many instances the soundings were improperly spaced when an uneven interval occurred between soundings.

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

REGISTRY NO. H-8074

FIELD NO. PF-2253

Alaska, Pribilof Islands, East of St. Paul Island

Project CS-343

Surveyed - July, Sept. 1953

Scale 1:20,000  
1:10,000

Soundings:  
808 Fathometer

Control: Shore and  
Sextant fixes on  
shore signals

Chief of Party - K. G. Crosby  
Surveyed by - M. E. Wennermark, H. D. Nygren, H. P. Demuth  
                  B. E. Greene and L. R. Whitney  
Protracted by - C. D. Upham and L. C. Larson  
Soundings plotted by - C. D. Upham  
Preliminary Verification by - I. M. Zeskind  
Verified and inked by - *JC Chambers*  
Reviewed by - I. M. Zeskind      6/15/54  
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline shown in pencil on the present survey originates with plane table topographic surveys T-2295a and T-2297 of 1897. Proposed contemporary shoreline is not available at this time.

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

The bottom is generally smooth except in inshore areas in depths of less than 10 fms. where it is irregular.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-8077 (1953) on the north. The present survey falls within the area of H-7948 (1951-52-53), and joins H-8076 (1953) on the southwest, H-8075 (1950) on the northwest and with H-8073 (1953) on the northwest and north. The junctions with H-7948, H-8075, H-8076 and H-8073 will be considered in the reviews of those surveys.

5. Comparison with Prior Surveys

There are no prior surveys by this Bureau in the area covered by the present survey.

6. Comparison with Drawing No. 4, dated 4/6/54 of Chart 8994

A. Hydrography

The charted hydrography originates principally with the present survey and overlapping survey H-7948 (1951-53), prior to verification and review. Additional charted soundings are from early reconnaissance surveys. Except for minor differences of as much as 1 fm. in depths, the charted depths are in good agreement with depths on H-8074 and H-7948.

Hydrography from the present and overlapping surveys supersedes the charted hydrography.

B. Aids to Navigation

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

7. Condition of Survey

- a. This survey has only been given a preliminary verification. A complete statement concerning the condition of the survey is deferred until the present survey has been completely verified.
- b. The following deficiencies were noted during the preliminary verification of the present survey.
  - (1) The field party frequently failed to make proper allowance for kelp traces or wave action when reading the fathograms.
  - (2) Depths recorded at uneven intervals were frequently erroneously spaced on the smooth sheet.



c. Only one bottom characteristic was obtained within the area of the present survey.

8. Compliance with Project Instructions

The present survey adequately complies with the Project Instructions, except as noted in paragraph 7 b and c above.

9. Additional Field Work Recommended

This is a good basic survey and no additional field work is recommended. However, attention is directed to the paucity of bottom characteristics within the area of the present survey.

Examined and approved

*Wallace A. Bruder*  
Wallace A. Bruder  
Acting Chief, Nautical Chart Branch

*H. Arnold Karo*  
H. Arnold Karo  
Chief, Division of Charts

*G. R. Fish*  
G. R. Fish  
Chief, ~~Section~~ of Hydrography *Branch*

*Earl O. Heaton*  
Earl O. Heaton  
Chief, Division of Coastal Survey

Addendum to Review

H-8074 (1953)

Verified and inked by-----J. C. Chambers  
Depth curves inked by-----J. S. McMillan  
Review Addendum by-----J. S. McMillan 6/21/65  
Inspected by-----R. H. Carstens

The verification of this survey has been completed.  
Soundings, depth curves and junctions have been completely inked.

Junctions with Contemporary Surveys

Adequate junctions were effected with H-8077 (1953) on the north in the vicinity of the shoal located in latitude 57°19.0', longitude 169°59.5', with H-8076 (1953) on the southwest, with H-8075 (1953) on the west, with H-8073 (1953) on the northwest and north, and with H-7948 (1951-53) on the east. A butt junction was made with a portion of H-7948 on the south where the present survey supersedes a strip of hydrography in the vicinity of the 20 fm. curve. In this area depths differed by about 1 fm. and precluded showing a common delineation of the curve. Present depths adequately reveal the bottom configuration in the overlapping area.

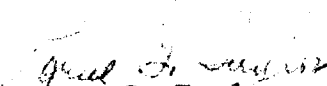
Comparison with Chart 8994 (latest print date 3-22-65)

The charted hydrography originates with the present survey after verification and before review. Except for minor differences of about 1 fathom in depth, the charted depths are in good agreement with the present depths.

Condition of Survey

- a. Completion of verification and inking reveals that the smooth plotting was well done.
- b. The Descriptive Report is complete and comprehensive.

Approved:

  
Lorne G. Taylor  
Chief, Nautical Chart Division

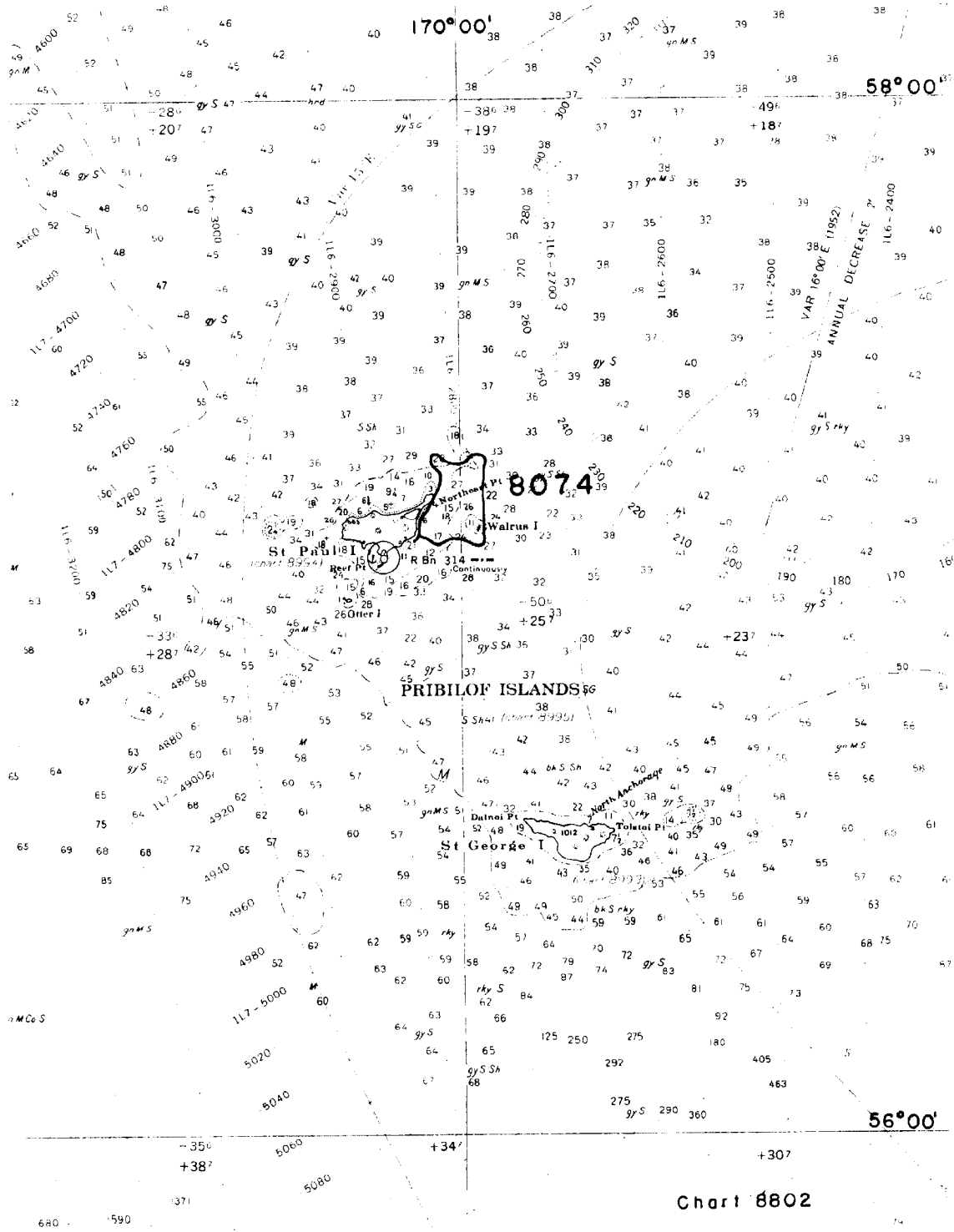


Chart 8802

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX~~

28 April 1954

Division of Charts: R. H. Carstens

Plane of reference approved in 14  
volumes of sounding records for

HYDROGRAPHIC SHEET 8074

Locality Pribilof Islands, Alaska

Chief of Party: K. G. Crosby in 1953

Plane of reference is mean lower low water, reading  
3.4 ft. on tide staff ~~xx~~ (July 11, 1953) at Village Cove, St. Paul  
3.1 ft. ~~below B.M.~~ on T.S. (Aug. 14, 1953) " " " Island  
9.5 ft. below B. M. 2 (1946)

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

Condition of records satisfactory except as noted below:

*E.C. McKay*  
Section of Tides

Chief, Division of Tides and Currents.

# NAUTICAL CHARTS BRANCH

SURVEY NO. H-8074

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
5/3/54	8994	H. W. Burgoyne	<del>Before</del> <del>After</del> <sup>Partial application with particular attention paid to 3, 5, and 10 ft. curves.</sup> Verification and Review
Mar 54	8995	C. R. W.	<del>Before</del> <del>After</del> Verification and Review <sup>Applied via Paper 50715-7</sup>
Oct. 54	9302	G. H. E.	<del>Before</del> <del>After</del> <sup>prelim</sup> Verification and Review
	8802	H. E. Thomsen	<del>Before</del> <del>After</del> Verification and Review
5-5-59	8994	R. K. DeLauder	<del>Before</del> <del>After</del> <sup>before</sup> Verification and Review <sup>completely appl</sup>
9 Jan 61	8995	T. Nichols	<del>Before</del> <del>After</del> Verification and Review <sup>Three Drawg 4</sup>
10 Jan 61	8802	4	<del>Before</del> <del>After</del> Verification and Review <sup>Three 8994</sup>
"	9302	"	<del>Before</del> <del>After</del> Verification and Review <sup>Three 8995</sup>
11 Feb 61	9000	"	<del>Before</del> <del>After</del> <sup>preliminary</sup> Verification and Review <sup>Three 8802</sup>
6/16/69	8994	J. M. Hilliard	<del>Before</del> <del>After</del> Verification and Review <sup>Fully Applied</sup> <sup>To Drawing #6</sup>

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.