8381

Diag. Cht. Nos. 8502-2 & 8302-3.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PF-10157 *Office No.* H-8381

LOCALITY

State Alaska

General locality North Side Alaska Peninsula

Locality North West of Port Heiden

19 57

CHIEF OF PARTY

F. B. Quinn

LIBRARY & ARCHIVES

DATE November 26, 1957

USCOMM-DC 5087

8381

Form 537
(Ed. June 1946)

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-8381

Field No. PF-10157

State Alaska

General locality N. Side Alaska Peninsula

Locality North West of Port Heiden

Scale 1:100,000 Date of survey August 1957

Instructions dated 20 December 1954, 21 October 1955, 1 October 1956

Vessel Ship PATHFINDER

Chief of party F. B. Quinn

Surveyed by G. L. Short, J. O. Boyer

Soundings taken by [illegible] graphic recorder, [illegible]

Fathograms scaled by Ship's personnel

Fathograms checked by Ship's officers

Protracted by G. L. Short, J. O. Boyer

Soundings penciled by J. R. Schwartz

Soundings in fathoms [illegible] at [illegible] MLLW

REMARKS: Positions plotted directly on smooth sheet, boat sheet not used.

U. S. GOVERNMENT PRINTING OFFICE 777032

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEYS H-8378 (PF-4157) and H-8381 (PF-10157)

NORTH SIDE ALASKA PENINSULA, ALASKA

Scales: 1:40,000 and 1:100,000 Date: August 1957

USC&GSS PATHFINDER F. B. Quinn, Commanding

A. PROJECT:

These surveys are a part of Project 13750. Original Instructions were dated 20 December 1954; Supplemental Instructions, 21 October 1955 and 1 October 1956. The instructions were issued by the Director and the Assistant Director.

B. SURVEY LIMITS AND DATES:

These surveys are in Bristol Bay off Port Heiden. They extend from about four miles to about 17 miles off shore, a distance suitable for future EPI junction. The axis parallel to the shore is about 32 miles. Inshore they join launch sheets and off shore they extend to the 20 fathom curve.

The southeasterly limit of H-8381 (1957) joins H-8378 (1957). H-8378 (1957) joins H-8377 (1957) to the southeast and H-8376 (1957) to the south.

Hydrography was started 11 August and completed 31 August.

C. VESSEL AND EQUIPMENT:

The surveys were made by the Ship PATHFINDER. Soundings were taken with graphic recorder No. 130-S(808 type) calibrated for 800 fms/sec. Bottom samples were obatined by wire and snapper with the ship's sounding machine.

Most turns were made at standard speed with 15 degree rudder. This gave a turning radius of about 0.2 miles.

D. TIDE AND CURRENT STATIONS:

See TIDE NOTE attached.

Current station No. "a", off the entrance to Port Heiden at latitude 56° 59.'3 N and longitude 158° 53.'2 W, falls within the area of this survey. Currents were measured with a Roberts Model 2 Radio Current Meter for 103 hours from 15 to 19 August. The buoy

was anchored in 11 fathoms and the meter was sus ended 15 feet below the surface. The maximum current recorded was 1.2 knots. See CURRENT OBSERVATIONS REPORT which was submitted 4 October.

E. SMOOTH SHEET:

The smooth sheet projections were made by hand aboard the PATHFINDER. Shoran arcs were drawn with beam compass. A temporary "dog ear" was used for drawing the LIL arcs on H-8378.

Boat sheets were not used for these surveys. Overlays of transparent plastic MYLAR were used. Positions were pricked thru directly to the smooth sheets. Soundings were inked on the overlays and omitted from the smooth sheet until the reducers were known during post season processing.

MYLAR proved very satisfactory for the overlays. The material is very transparent and tough and distorts very little. The slick surface did not take or retain ink and pencil well, so the surface was roughened with fine sand paper. The material then took ink and pencil satisfactorily and still remained transparent.

F. CONTROL STATIONS:

The only control stations appearing on these sheets are the shoran stations CUP and LIL.

LIL was directly over 2nd order triangulation station LILAC, 1949 established by R. J. Sipe.

CUP was erected 11.0 meters west of 3rd order triangulation station CUPOLA, 1949 established by R. J. Sipe.

G. SHORELINE AND TOPOGRAPHY:

Shoreline and topographic details are not shown on these sheets because they are not at the scale of the available shoreline manuscripts. The inshore areas are covered by launch sheets which are at the same scale as the manuscripts.

H. SOUNDINGS:

Soundings were obtained with an 808 type graphic recorder calibrated for 800 fms/sec. All soundings were recorded in fathoms on "A" phase.

Fathometer comparisons were made with vertical casts when obtaining bottom samples. The average of 15 such comparisons showed the fathometer to be reading 0.1 fms deep and this correction was applied.

Draft readings in board, amidships were taken each day hydrography was done. Soundings were corrected for draft.

Depths were read by the fathometer operator while doing hydrography. The readings were checked at a later date by junior officers. The initial setting was also checked and a correction applied when it differed from 2.0 fathoms.

All soundings were reduced to MLLW.

I. CONTROL OF HYDROGRAPHY:

The hydrography was controlled by shoran using stations CUP and LIL. (See F above).

Shoran corrections were obtained from curves drawn from comparisons of shoran readings at known positions determined by 3-point fixes on triangulation stations. Comparisons were made at different locations on three different days. Plotting was carefully done on a Dinoplex sheet.

The curves were made with correctors and distance from station as coordinates. The points plotted fairly close to a straight line with a slope of 0.0018 miles per mile. Correctors to the nearest 0.01 mile were taken off these curves and applied to shoran readings. (See graph attached).

No unusual or substandard methods were used for these surveys. The control of all hydrography is believed good.

J. ADEQUACY OF SURVEY:

These surveys are complete and adequate for charting purposes. Junctions with contemporary surveys are good and no holidays were left. The depth curves can be adequately drawn.

K. CROSSLINES:

About 10 percent crosslines were run. All crossings are satisfactory.

L. COMPARISON WITH PRIOR SURVEYS:

FE No. 5 (47)
FE No. 2 (49)

No prior surveys of the area are available for comparison. The several scattered soundings appearing on chart 8802 probably came from Russian explorers or tracklines of the U. S. Coast Guard and this Bureau. Soundings of this survey should supercede prior soundings.

M. COMPARISON WITH CHARTS

The several soundings in this area on chart 8802 scale 1: 1,000,000 are in fair agreement considering the scale and source except for the 26 fathom sounding at latitude 56° 58.'3 N longitude 159° 11.'2 W. Depths at this location were shown to be about 17 fathoms.

plots on H-8378 in 17 fms

N. DANGERS AND SHOALS

No dangers were found within the area surveyed.

Northeast of Meshik an 11 fathom shoal extends to about 9 miles offshore. This shoal becomes 20 fathoms about 18 miles offshore. The bottom is sand and gravel with 1 to 2 fathom ridges running perpendicular to the shore. These ridges have the character of sand waves and undoubtedly shift with winter storms.

O. COAST PILOT INFORMATION:

Coast Pilot information will be submitted for the entire Port Heiden area as a separate report.

P. AIDS TO NAVIGATION:

There are no aids to navigation within the area of these surveys.

Q. LANDMARKS FOR CHARTS:

There are no unclassified landmarks within the area of these surveys.

R. GEOGRAPHIC NAMES:

No additions or changes are recommended in the geographic names as they appear on the photo manuscripts and existing charts.

S. SILTED AREAS

No silted areas were noted.

T. BY-PRODUCT INFORMATION:

Generally the bottom for the whole area is sand, gravel, and pebbles. It is good holding ground, but there is no good protection from storms. The spit extending southwest from Strogonof Point offers some protection from southeasterly weather since the ten fathom curve comes within two miles of the beach. The bottom here too is uniform and fair holding ground.

U. MISCELLANEOUS:

Processing time was greatly reduced for these sheets by using a MYLAR overlay, instead of a boat sheet, and pricking positions directly through to the smooth sheets. (See E above.) Shoran correctors were known, so positions were plotted correctly.

Depths were entered in the volumes every minute for the 40,000 scale and every two minutes for the 100,000 scale. In-between soundings were added when the bottom varied. This made for a relatively wide spacing interval between soundings on the smooth sheet. Because of the flatness of the bottom, this spacing gave a complete picture and greatly reduced the time required to process the records.

Z. TABULATION OF APPLICABLE DATA:

1. Shoran Report
2. Fathometer Report
3. Current Descriptive Report submitted 4 October
4. Coast Pilot Report
5. Tidal Data, Port Heiden, submitted 9 September

Respectfully submitted

John O. Boyer

John O. Boyer
LCDR, C&GS

Approved and forwarded:

F. B. Quinn

F. B. Quinn
CAPT, C&GS
Comdg. Ship PATHFINDER

GEOGRAPHIC NAME LIST

HYDROGRAPHIC SURVEYS H-8378(PF-4157) & H-8381(PF-10157)

BRISTOL BAY

CHISTIAKOF ISLAND

MESHIK

PORT HEIDEN

STROGONOF POINT

Note:

See hydrographic surveys H-8376 and H-8377 for geographic names in the Port Heiden area.

APPROVAL SHEET

HYDROGRAPHIC SURVEYS H-8378(PF-4157) & H-8381(PF-10157)

These surveys were done under my close daily supervision. I consider them complete and adequate for charting. No additional work is recommended within the area of these surveys.

F. B. Quinn
Captain, C&GS
Comdg. Ship PATHFINDER

STATISTICS

HYDROGRAPHIC SURVEY H-8381 (PF-10157)

Ship PATHFINDER Project 13750 Year: 1957

VOLUME	DAY	DATE	POSITIONS	STATUE MILES	WIRE SDG.
1	A	28 Aug	91	128.7	1
1	B	30 Aug	41	56.1	
1	C	31 Aug	129	184.0	3
TOTAL			261	368.8	4

TOTAL AREA - 156.0 SQUARE STATUE MILES

TIDE NOTE

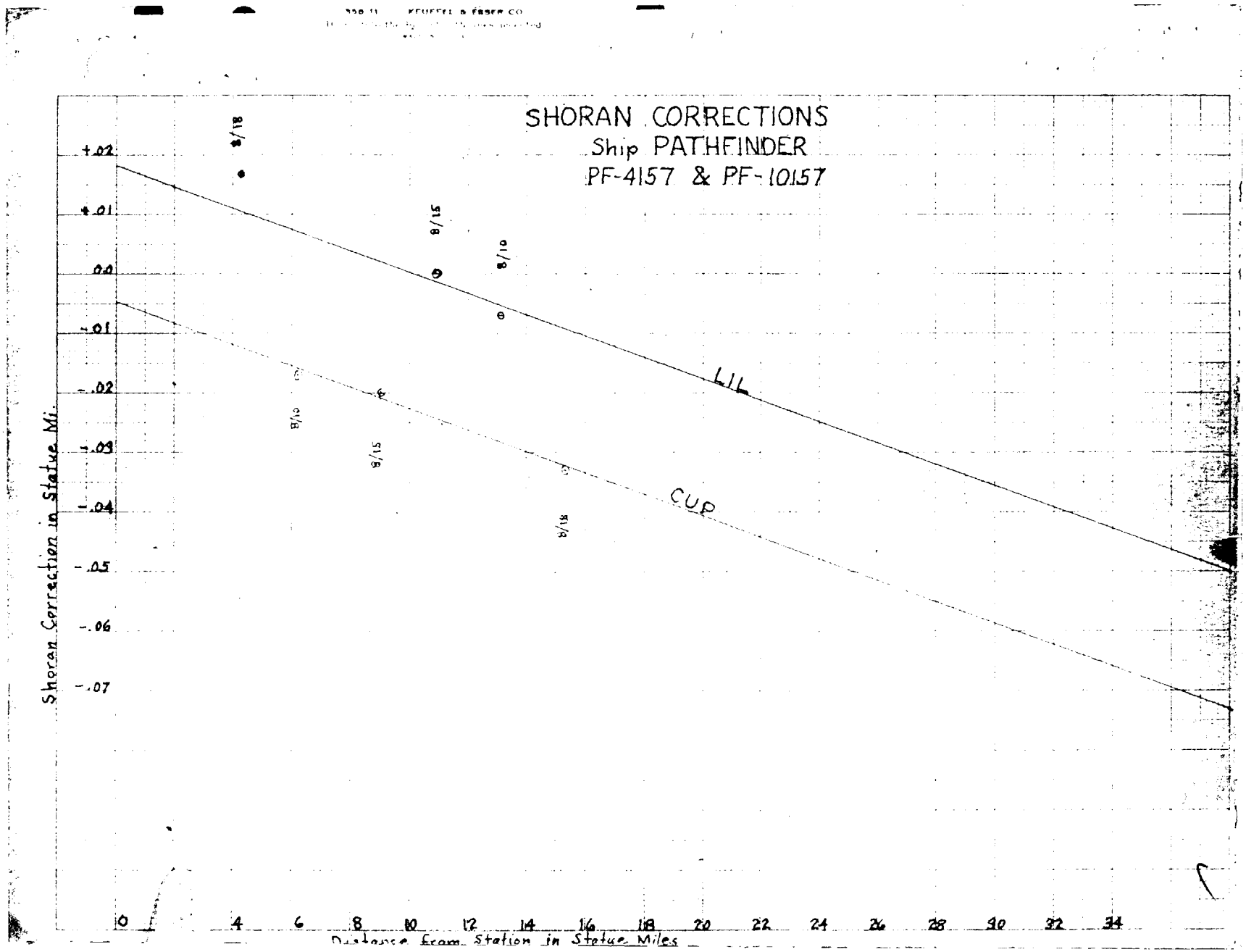
HYDROGRAPHIC SURVEYS H-8378 (PF-4157) & H-8381 (PF-10157)

A portable automatic tide gage was in operation during these surveys at latitude 56° 55.'96 N . and longitude 158° 41.'68 W, south of the northeast end of Chistiakof Island. This gage was in operation from 9 August to 3 September. Three bench marks were established.

All marigrams and records were sent to the Washington Office. It was evident that the tripod holding the staff and gage settled. The Washington office deduced MLLW to be 4.1 feet on the staff from 9 to 24 August and 4.6 feet from 25 August to 3 September.

Smooth tide curves were drawn from observed hourly heights. Reducers to the nearest 0.1 fathom were taken from these. All soundings are referred to MLLW.

Whenever the ship was at anchor off Port Heiden, the quartermaster observed tides by recording a fathometer depth each half hour. The range and times thus observed offshore agreed verywell with those recorded by the automatic tide gage.


SHORAN CORRECTIONS
Ship PATHFINDER
PF-4157 & PF-10157
Shoran Correction in Statue Mi.
+.02
+.01
0.0
-.01
-.02
-.03
-.04
-.05
-.06
-.07
8/18
8/15
8/10
8/10
8/15
8/18
L/L
CUP
0
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
Distance from Station in Statue Miles

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8381

Records accompanying survey:

Boat sheets 1; sounding vols. 1; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 1-Envelope

special reports, etc. 1-Smooth sheet, 1-Descriptive report,....

and 1 Cahier-Shoran Plotting Abstract.....

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

Number of positions on sheet		261
Number of positions checked		8
Number of positions revised		0
Number of soundings revised (refers to depth only)		4
Number of soundings erroneously spaced		5
Number of signals erroneously plotted or transferred		0
Topographic details	Time	0
Junctions	Time	2
Verification of soundings from graphic record	Time	.....

Verification by H.W. Burgoyne. Total time 25 Date July 25, 1960

Reviewed by H.W. Burgoyne..... Time 9 Date July 27, 1960

M-2232-1

Form 712
(11-30-55)

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens 14 Jan. 1958

Plane of reference approved in
1 volume~~X~~ of sounding records for

HYDROGRAPHIC SHEET 8381

Locality Port Heiden, Alaska

Chief of Party: F. B. Quinn in 1957

Plane of reference is mean lower low water, reading

4.2 ft. on tide staff at Port Heiden

21.1 ft. below B.M. 1 (1957)

Height of mean high water above of plane of reference is 10.9 feet.

Condition of records satisfactory except as noted below:

William Thayer
Signature

Chief, Tides Branch

Comm-DC 34330

GEOGRAPHIC NAMES

Survey No. H-8381

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Alaska			(title)							1
Alaska Peninsula			"						BGN	2
Port Heiden			"							3
Bristol Bay									BGN	4
										5
			Names approved 12-9-57. L. HECK							6
Tide Station Off Sheet:										7
Chistiakof Island										8
										9
										10
										11
										12
										13
										14
										15
										16
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										25
										26
										27

M 234

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8381 FIELD NO. PF-10157

Alaska - North Side Alaska Peninsula - North West of Port Heiden

SURVEYED: August 11 - 31, 1957 SCALE 1:100,000

PROJECT NO. 13750

SOUNDINGS: 808 Depth Recorder CONTROL: Shoran

Chief of Party ---------- F. B. Quinn
Surveyed by ---------- G. L. Short, J. O. Boyer
Protracted by ---------- G. L. Short, J. O. Boyer
Soundings plotted by ---------- J. R. Schwartz
Verified and inked by ---------- H. W. Burgoyne
Reviewed by ---------- H. W. Burgoyne DATE: 7/27/60
Inspected by ---------- L. S. Straw

1. Shoreline and Control

This survey is approximately 11 - 16 miles offshore and no shoreline or topographic detail is shown.

The source of control is given in the Descriptive Report.

2. Sounding Line Crossings

The depth at sounding line crossings are in good agreement.

3. Depth Curves and Bottom Configuration

This survey covers an area off Port Heiden in the vicinity of the 20 fathom depth curve. The area is unique in that apparent 2 - 3 fathom sand and gravel ridges running perpendicular to the shore exist in 20 fathoms of water approximately 16 miles offshore.

4. Junctions with Contemporary Surveys

Present survey depths on the southeast are in adequate agreement with junctional depths on survey H-8378 (1957). There are no other contemporary surveys in this area.

5. Comparison with Prior Surveys

F. E. No. 5 (1947)
F. E. No. 2 (1949)

The field examinations listed above cover the area of the present survey, and were plotted on Chart 8802 (Scale 1,023,188). They are merely reconnaissance lines and serve no adequate basis for comparison.

The present survey is adequate to supersede the field examinations in the common area.

6. Comparison with Chart 8834 (dated 2/17/58).

A. Hydrogfaphy

The charted hydrography originated with the present survey prior to verification and review. The present survey is in agreement with the charted hydrography except for the charted 13 fathom sounding at Lat. 57°02.43', Long. 159°06.42'. The 13 fathom sounding was plotted in error and should be 15 fathoms.

B. Aids to Navigation

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

7. Condition of Survey

a. The descriptive report and sounding records are complete and comprehensive.
b. The survey was smooth plotted accurately and neatly.

8. Compliance with Project Instructions

The survey adequately complies with project instructions.

9. Additional Field Work Recommended

This is a good basic survey and no additional field work is recommended.

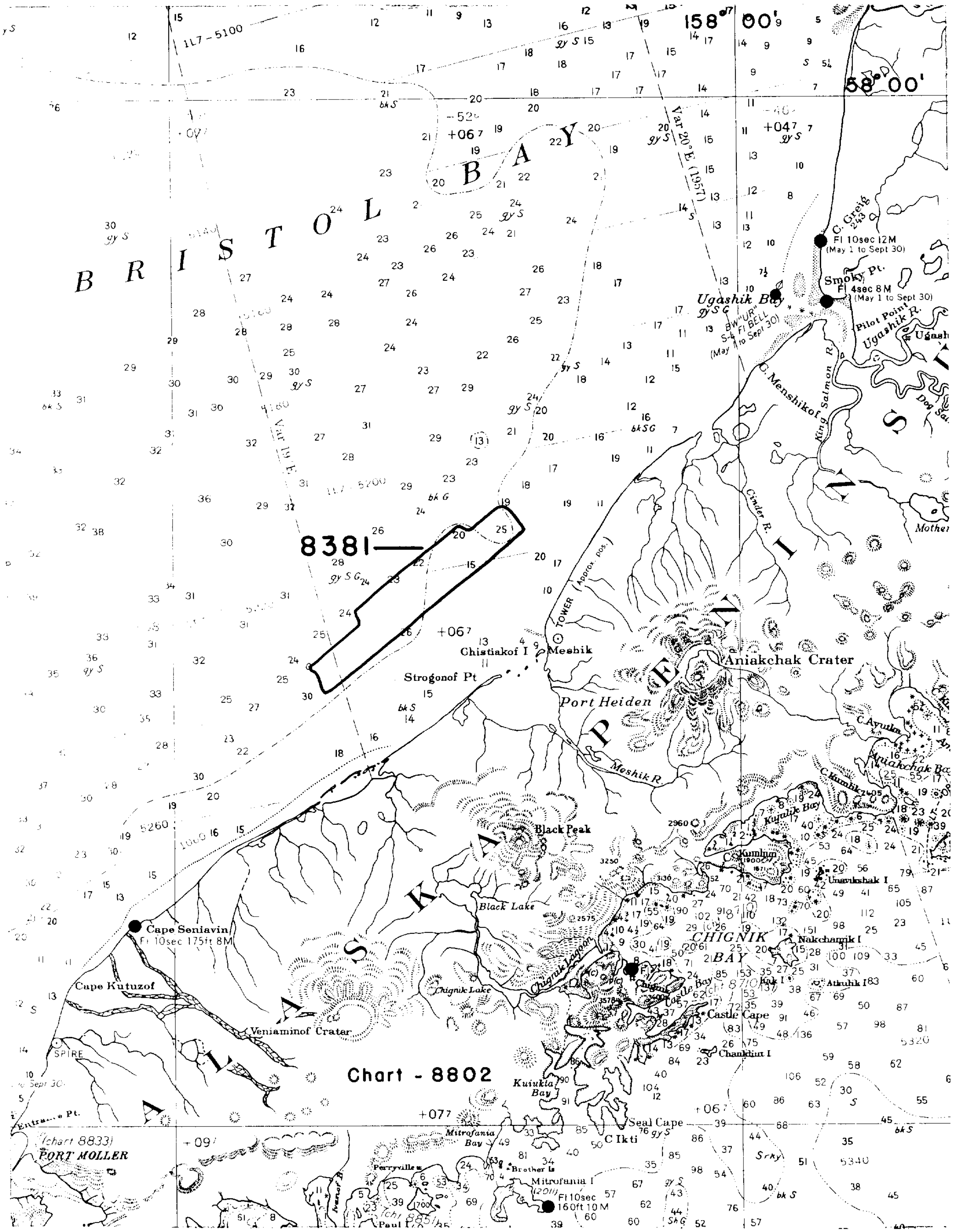
Examined and Approved:

J.E. Waugh 11/23/60
Chief,
Nautical Chart Division

Louis F. Woodcock
Projects Officer,
Operations Division

Assistant Director,
Office of Cartography

K. Crosby
Assistant Director
Office of Oceanography


158° 00'
58° 00'
BRISTOL BAY
8381
Var 20° E (1957)
Var 19 E
C. Greig
Fl 10sec 12M (May 1 to Sept 30)
Smoky Pt.
Fl 4sec 8M (May 1 to Sept 30)
Ugashik Bay
Pilot Point
Ugashik R.
C. Menshikof
King Salmon R.
Cinder R.
Mother
TOWER (Approx. pos.)
Chistiakof I
Mesbik
Aniakchak Crater
Strogonof Pt
Port Heiden
Meshik R.
C. Ayutka
Aniakchak Bay
Kujulik Bay
Black Peak
Kumlum
Unavikshak I
Black Lake
CHIGNIK BAY
Nakchamik I
Cape Seniavin
Fl 10sec 175ft 8M
Chignik Lagoon
Chignik Lake
Atkulik I
Cape Kutuzof
Castle Cape
Veniaminof Crater
Chankliut I
SPIRE
Chart - 8802
Kuiukta Bay
Seal Cape
C Ikti
Mitrofania Bay
(chart 8833)
PORT MOLLER
Perryville
Brother Is
Mitrofania I
Fl 10sec 160ft 10M
ALASKA PENINSULA

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8381

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
12-12-57	NEW CHT 8834	R. K. DeLander	Completely applied. Before ~~After~~ Verification and Review. JMG
3-1-61	8802	J. M. Albert	~~Before~~ Complete After Verification and Review
3-2-61	9302	JMA	via 8802 ~~Before~~ After Verification and Review
7/3 63	8834	J. J. Streifer	Complete application ~~Before~~ After Verification and Review VKRO 8-1-63
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			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.