

8375

Diag. Cht. No. 8860-3.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PF-2357 Office No. H-3375

LOCALITY

State Alaska

General locality West of Alaska Peninsula

Locality Approaches to Bechevin Bay

1957

CHIEF OF PARTY

F. B. Quinn

LIBRARY & ARCHIVES

DATE April 21, 1958

USCOMM-DC 5087

8375

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-8375

Field No. PF-2357

State ALASKA ✓

General locality West of Alaska Peninsula

Locality Approaches to Becherin Bay

Scale 1:20,000 Date of survey July 1957

Instructions dated 20 December 1954, 21 October 1955, 10 October 1956

Vessel PATHFINDER Launches 1, 2, and 4 ✓

Chief of party F. B. Quinn

Surveyed by H. H. Druebert, and R. D. Frost ✓

Soundings taken by 808 ~~fathometer~~ graphic recorder, ~~hand lead wire~~

Fathograms scaled by Launch Personnel

Fathograms checked by Ship's Officers

Protracted by H. H. Druebert

Soundings penciled by G. F. Wirth

Soundings in fathoms and tenths ~~xxx~~ at MLLW ~~AND~~ ARE TRUE DEPTHS.

REMARKS: _____

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEYS H-8374 (PF-2257) and H-8375 (PF-2357)

NORTH SIDE ALASKA PENINSULA, ALASKA

Scale: 1:20,000
USC&GSS PATHFINDER

Date: July 1957
F. B. Quinn, Commanding

A. PROJECT:

These surveys are a part of project ¹³⁷⁵⁰ ~~65-375~~. Original instructions were dated 20 December 1954; Supplemental instructions, 21 October 1955 and 1 October 1956.

B. SURVEY LIMITS AND DATES:

These surveys are of the Northwest entrance to BECHEVIN BAY, extending Westward to Otter Point, and Eastward to join previous surveys, including the Northeast corner of BECHEVIN BAY.

Sheet H-8374 joins H-6624 to the Westward, H-6790 and H-8303 to the North, and H-8375 to the Westward.

Sheet H-8375 joins H-8303 ⁽¹⁹⁵⁶⁾ to the North, H-8299 ⁽¹⁹⁵⁶⁾ to the Northeast, and H-8373 ⁽¹⁹⁵⁷⁾ inside BECHEVIN BAY, and ~~H-8374~~ ⁽¹⁹⁵⁷⁾ on the west.

Hydrography was started on 1 July and completed on 24 July 1957.

C. VESSELS AND EQUIPMENT:

Hydrography was done by PATHFINDER launches 1, 2, 3 and 4.

Launch No. 1 was equipped with 808 depth recorder No. 74-S and Shoran Indicator No. 581. Launch No. 1 worked on the Easterly side of H-8375.

Launch No. 2 was equipped with 808 depth recorder No. 46 and Shoran Indicator No. 518 and a comparator and PDI meter. Launch No. 2 worked on the Westerly end of H-8375, and in the entrance to BECHEVIN BAY.

Launch No. 3 was equipped with 808 depth recorder No. 52 and Shoran Indicator No. 1352. Launch No. 3 was used on sheet H-8374, in the area extending Westward to Otter Point.

Launch No. 4 was equipped with 808 depth recorder No. 61 and Shoran Indicator No. 581. Launch No. 4 worked in the area in the Northeast corner of BECHEVIN BAY, which was the Southeast part of sheet H-8375.

All depth recorders were calibrated for 800 fathoms per second.

The turning radius for all launches is about 20 meters.

All launches operated from the ship during the entire survey.

D. TIDE AND CURRENT STATIONS:

The Tide Station was located inside BECHEVIN BAY, in St. Catherine Cove, just East of Shoran Station WIN. The tide correctors were furnished by the Washington Office. For additional information see the tide note attached.

Two current stations were in operation during part of the time of the survey. Current Station No. 1, off Otter Point, was observed for 114 hours, and was located at Lat. $55^{\circ} 04.43'N$, Long. $163^{\circ} 47.29'W$. Current Station No. 2, off the entrance to BECHEVIN BAY at Lat. $55^{\circ} 06.72'N$ and Long. $163^{\circ} 27.85'W$, was observed for 215 hours. For additional information refer to Special Report Current Observations for 1957 previously submitted.

E. SMOOTH SHEET:

The smooth sheets were made by hand by ship personnel. Shoran arcs were drawn with beam compass. A "dog ear" was made for H-8375 so that arcs for station WIN could be drawn. The dog ear was removed after the arcs were drawn.

The shoreline was transferred from blue-line tracings on sheet H-8375 (1957) but since there was no blue-line tracings for a section of the shoreline on H-8374, the shoreline was penciled on from hydrographic notes, and compared with a Topographic survey of the area in 1940-41.

F. CONTROL STATIONS:

The control stations for these surveys are Shoran stations WIN and SUL.

WIN was located directly over third-order triangulation station WIND 1924, R.R.L.

SUL was located directly over Reference Mark No. 2 of third-order triangulation station SULA 1941, H.A.C.

G. SHORELINE AND TOPOGRAPHY:

The shoreline was transferred from blue-line tracings of advance manuscripts T-11476, T-11478, and T-11479. There were no advance manuscripts or blue-line tracings for the area extending from Swanson's Lagoon Westward toward Otter Point. This area was covered by a 1940-41 Topographic Survey which was used where the shoreline was not subjected to any appreciable change. In the area around Swanson's Lagoon, sheet H-8374, the shoreline is subject to yearly changes, and the shoreline was inked as red broken line using notes obtained by the hydrographic party, and estimates based on the depths of the inshore sounding line. Generally, the shoreline as shown on the manuscripts for H-8375 should be accepted for charting.

The low water line was not defined in some areas, due to the breakers occurring inshore. Therefore the zero foot curve in some areas was drawn by combining (1) the hydrographers estimate to the shore while running the sounding line inshore, (2) the reduced sounding at the position where the hydrographers estimate was made, and (3) the stage of the tide at the time.

See P 3
Review.

H-8374

H. SOUNDINGS:

Soundings were recorded by 808 type depth recorders. Comparisons were made with leadline soundings while obtaining bottom samples. Most comparisons agreed very well. Bar checks were taken by each hydrographic launch each day the weather and sea conditions permitted. See Special Report "Depth Recorder Corrections" for additional information. (S.R. 120, 1957)

The soundings were recorded in fathoms, therefore there were no phase comparisons or corrections.

Corrections for tide were obtained from the tide gage in ^{Port Moller} ~~St. Catherine's~~ Cove, and other data, and were compiled in the Washington Office.

I. CONTROL OF HYDROGRAPHY:

The survey was controlled by Shoran only. The only visual fixes used, were solely for calibration of the Shoran sets.

The location of the Shoran towers were determined from G. P's. for the respective triangulation stations used.

The two Shoran Stations, WIN and SULA, were used for the control of all hydrography outside the base line area. When it was necessary to do hydrography within the base line limits, the Ship PATHFINDER (PAT-1) was used as a Shoran Station. The surveyed area where the ship was used as a Shoran Station was completely within sheet H-8374. As the ship was anchored in position, it was located by both visual and Shoran distances, and the ships position was radioed to the launch concerned each half hour. An overlay was used with Shoran arcs inked on it, for both the boat sheet and smooth sheet plotting.

Shoran corrections were determined by comparing the Shoran distances with true distances as determined by visual three-point fixes. Such calibrations were taken at various locations within the limits of the survey so that a curve of distance versus correction could be drawn and thus provide corrections truly representative of the particular Shoran receiver, and area surveyed. See "Shoran Correction Report" ^(S.R. 121, 1957) for additional information.

The Shoran control was good in all areas, with one exception. In the Northeast corner of sheet H-8375, East of Station BOLD 1952, the Shoran control near the beach was weak, and the positions seemed somewhat displaced from the visual topography along the shoreline. The weak positions are the result of signal interference due to the intervening bluffs which are prevalent along the shore in this area. This conclusion is drawn, since the signals became stronger as the distance from shore increased. The positions and the soundings as plotted are considered adequate, since any other means of control in the area would have been time consuming, and the area is not critical to navigation.

Plotting reasonable

J. ADEQUACY OF SURVEY:

This survey is complete and adequate for charting, including the area discussed in the preceding paragraph,

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and should supersede all prior data from other sources. The junctions were all adequate and the depth curves were delineated.

K. CROSSLINES:

About 11 per cent of the hydrography is crosslines. The soundings at crossings check adequately and there were no disturbing discrepancies found on either sheet. *SEE TP 2 OF REVIEW*

L. COMPARISON WITH PRIOR SURVEYS:

The only other survey in the area, H-4394 Scale 1:20,000 was completed in 1924. This previous survey covered the area from about 3 miles West of Chumak Point, along the shore, around Chumak Point, and into Bechevin Bay. The area covered by this survey compares favorably with the prior survey. The channel areas, and the shoal areas have not shifted appreciably.

M. COMPARISON WITH CHART:

The largest scale chart of the area is 8701 printed 17 March 1952, and the only areas with any soundings are those the comparison with prior surveys mentioned in the preceding paragraph. The dangers and shoals shown on the chart have been investigated, and plotted on the smooth sheet in their respective locations.

N. DANGERS AND SHOALS:

All dangers and shoals that were found are evident on the smooth sheet.

O. COAST PILOT INFORMATION:

Coast Pilot information has been submitted for this area under separate cover.

P. AIDS TO NAVIGATION:

The only aid to navigation in the area is BEACON, 1923 Lat. $55^{\circ} 02' 42.995''$ Long. $163^{\circ} 31' 18.315''$. It is a wooden tripod built of heavy timbers and planks. It is shown on Advance Manuscript T-11478.

Q. LANDMARKS FOR CHARTS:

There are no landmarks for charting.

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:

The bottom is generally fine black and gray sand. Lack of prior surveys in most areas prevents silting determination. In the entrance to Bechevin Bay near

Chunak Point, the bottom has changed very little since the prior survey. *See Review*
In the Northeast corner of Bechevin Bay, in the area of the entrance as *#5*
charted on Chart # 8701, there is no entrance channel as such, and the
area is very shoal.

T. BY-PRODUCT INFORMATION:

Generally, the bottom of the entire area is of a firm sand, which
is good for anchorage, but the area has no protection from storms. Small
craft can enter Bechevin Bay, and weather any severe storms. The prevailing
winds are from the West.

Much of the entrance to Bechevin Bay is a shoal area, and breakers
can be seen at all times, except in cases of extremely calm weather. These
breakers can be avoided by small craft, by proceeding through the entrance
around Chunak Point, in the main channel.

Respectfully submitted,

Harley D. Nygren
Harley D. Nygren, LCDR.
For: Ronald D. Bernard, ENS.

APPROVED AND FORWARDED:

F. B. Quinn

F. B. Quinn
Captain, USC&GS
Commanding Ship PATHFINDER

STATISTICS

HYDROGRAPHIC SURVEY H-8375 (PF-2357)

Volume Number	Day Letter	Date 1957	Number of Positions	Stat. Mi. Soundings
<u>Launch No. 2</u>				
1	a	1 July ✓	9	2.9
1	b	2 ✓	110	39.4
1	c	8 ✓	70	23.8
2	d	9 ✓	4	0.8
2	e	11 ✓	119	40.5
2 & 3	f	13 ✓	104	33.7
3	g	14 ✓	141	37.1
3 & 4	h	15 ✓	125	32.5
4	j	16 ✓	104	35.1
4	k	17 ✓	94	27.8
Totals for Launch 2			880	273.6
Total for Sheet H-8375 1957				646.6
Hydrography on Sheet H-8375 - 61 Sq. Mi.				

STATISTICS

HYDROGRAPHIC SURVEY H-8375 (PF-2357)

Volume Number	Day Letter	Date 1957	Number of Positions	Stat. Mi. Soundings
<u>Launch No. 1</u>				
1	a	1 July ✓	43	18.5
1	b	2 ✓	75	27.6
1 & 2	c	8 ✓	91	37.6
2	d	9 ✓	62	24.6
2 & 3	e	11 ✓	95	35.5
3	f	13 ✓	114	45.5
3 & 4	g	14 ✓	105	37.6
4	h	15 ✓	102	39.5
5	j	16 ✓	87	27.4
5	k	17 ✓	102	24.7
6	l	18 ✓	35	28.7
6	m	24	51	13.2
Totals for Launch 1			962	350.4

Launch No. 4

1	a	26 July	88	17.3
1	b	27	27	5.3
Totals for Launch 4			115	22.6

STATISTICS

HYDROGRAPHIC SURVEY H-8374 (PF-2257)

Volume Number	Day Letter	Date 1957	Number of Positions	Stat. Mi. Soundings
<u>Launch No. 3 (green)</u>				
1	a	2 July ✓	106	37.0
1	b	8 ✓	87	33.4
2	c	9 ✓	71	26.8
2	d	11 ✓	116	45.4
3	e	13 ✓	92	26.0
3	f	14 ✓	77	20.5
3 & 4	g	15 ✓	110	28.6
4	h	16 ✓	98	22.0
4 & 5	j	17 ✓	148	37.8
5	k	18 ✓	51	14.3
5	l	19 ✓	23	6.9
Launch No. 3 Totals			979	298.7

Hydrography on Sheet H-8374 - 29 Sq. Mi.

TIDE NOTE SHEETS H-8374 and H-8375 ✓

A portable automatic Tide Gage was located on a crib in St. Catherine Cove just East of Shoran Station WIN. Lat. $55^{\circ} 00.58' N$
Long. $163^{\circ} 30.45' W$.

This was the only tide gage in the area during the survey, however standard gages were in operation at both Unalaska and Port Moller. The ship also took supplemental tide data with a depth recorder. All data were submitted to Washington, D. C. and the tide correctors were compiled there.

(All soundings outside Bechevin Bay)

*Notes: Used new tide reducers based on Port Moller
and fathometer station at working grounds.*

Use -3 hr. time corrector and 0.6 Ratio of range.

as per Tide Division Sept 8, 1959

D.R.E.

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VELOCITY CORRECTION ABSTRACT

HYDROGRAPHIC SURVEY H-8375 (PF-2357)

Launch No. 1 (Depth Recorder 74-S)

From:	Corr:
0.0 to 10.0 fms	+0.5 fms
10.1 to Max.	+0.6 fms

Launch No. 2 (Depth Recorder # 46)

Corr. is +0.4 fms for all depths.

Launch No. 4 (Depth Recorder # 61)

From:	Corr:
0.0 to 2.7 fms	+0.2 fms
2.8 to 8.6 fms	+0.1 fms
8.7 to Max.	0.0 fms

HYDROGRAPHIC SURVEY H-8374 (PF-2257)

Launch No. 3 (Depth Recorder # 52)

From:	Corr:
0.0 to 3.1 fms	+0.2 fms
3.2 to 12.9 fms	+0.1 fms
13.0 to Max.	0.0 fms

GEOGRAPHIC NAMES

Alaska Peninsula

Bechevin Bay

Bering Sea

Cape Krenitzin

Chunak Point

Otter Point

Unimak Island

APPROVAL SHEET

HYDROGRAPHIC SURVEYS H-8374 (PF-2257) and H-8375 (PF-2357)

These surveys were done under my close supervision, and I have inspected all records and the smooth sheets. I consider them complete and adequate for charting. No additional work is recommended within the area of these surveys.



F. B. Quinn
Captain, USC&GS
Commanding Ship PATHFINDER

GEOGRAPHIC NAMES

Survey No. H-8375

Name on Survey										
	A	B	C	D	E	F	G	H	K	
	On Chart No.	On previous survey No.	On U. S. Quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
<u>Alaska</u>				(for title)						1
<u>Otter Point</u>				(title only)						2
<u>Alaska Peninsula</u>									BGN	3
<u>Bechevin Bay</u>										4
<u>Cape Krenitzen</u>										5
<u>Chumak Point</u>										6
<u>Unimak Island</u>									BGN	7
<u>Bering Sea</u>									"	8
<u>Hook Bay</u> <i>HT</i>										9
Tide station not shown on sheet:										10
St. Catherine Cove										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

Names approved 6-1-58
L. HECK

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 3375....

Records accompanying survey:

Boat sheets .2...; sounding vols. .11...; wire drag vols.; bomb vols.; graphic recorder rolls 5-Envelopes; special reports, etc. 1-Smooth sheet and 1-Descriptive report... 1 each Film Positive T-6780 and T-6858.....

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

Number of positions on sheet		.2936.
Number of positions checked		.223.
Number of positions revised		..9...
Number of soundings revised (refers to depth only)		.7374.*
Number of soundings erroneously spaced		..84..
Number of signals erroneously plotted or transferred	
Topographic details	Time	..24...
Junctions	Time	..46...
Verification of soundings from graphic record	Time	..123...

Verification by *J. H. Eaton* Total time ..193.. Date ^{3/18/60 to} 4/27/60..

Reviewed by *[Signature]* Time ..23 hrs. Date ^{25 June 1960} ..

* *Estimated*
* Soundings revised because of tide corrections

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TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

28 May 1958

Plane of reference approved in
11 volumes of sounding records for

HYDROGRAPHIC SHEET 8375

Locality Alaska Peninsula, North Side

Chief of Party: F. B. Quinn in 1957

Plane of reference is mean lower low water, reading
4.3 ft. on tide staff at St. Catherine Cove, Bechevin Bay
41.0 ft. below B.M. 1 (1941)

Height of mean high water above plane of reference is as follows:

6.8 feet outside of Bechevin Bay
4.3 feet in Bechevin Bay

Condition of records satisfactory except as noted below:

*Tide reducers revised in accordance
with subsequent decision of Tide Division
to refer tides to Port Moller gage with
-3 hr. time corrector and 16 ratio of ranges
as determined by fathometer station.*

R.H.C.

William Thodges

Signature

Chief, Tides Branch

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8375

FIELD NO. PF-2357

Alaska, West of Alaska Peninsula, Approaches to Bechevin Bay

SURVEYED: July 1 - 27, 1957

SCALE 1:20,000

PROJECT NO. 13750

SOUNDINGS: 808 Depth Recorders

CONTROL: Shoran

Chief, of Party-----	F. B. Quinn
Surveyed by -----	H. H. Druebert and R. D. Frost
Protracted by -----	H. H. Druebert
Soundings plotted by -----	G. F. Wirth
Verified and inked by -----	J. H. Eaton
Reviewed by -----	L. S. Straw
Inspected by -----	R. H. Carstens

DATE: 28 June 1960

1. Shoreline and Control

The shoreline, which is subject to variable yearly change, especially at the inlets to Bechevin Bay, originates with reviewed air-photographic surveys, T-11476, T-11478 and T-11479 (1952-57).

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

2. Sounding Line Crossings

Crossing discrepancies of as much as $\frac{1}{2}$ -fathom and unnatural curves were eliminated after the application of revised tide reducers to about 7000 soundings. Revisions were made in accordance with data from the Port Moller tide station and a fathometer station.

3. Depth Curves and Bottom Characteristics

The usual depth curves are adequately delineated. The low water curve was supplemented in a few instances by adding the black dotted curve from the air-photographic surveys. The bottom is irregular in depths of 0-5 fathoms. Beyond the 5-fathom curve the bottom is even and slopes gradually seaward to deeper water.

4. Junctions with Contemporary Surveys

Satisfactory junctions were effected with H-8373 (1957) on the south at Bechevin Bay, H-8374 (1957) on the west and H-8303 (1956) on the northwest. The junction with H-8299 (1956) on the northeast is acceptable, although there are a few discrepancies in depths of as much as 1 fathom at the 10-fathom curve and deeper. These differences in depths are probably due to the fact that the Amak Island tide gage with no time or range corrections was used for the tide reducers on H-8299 (1956), whereas the Port Moller gage was used for the tide reducers on the present survey.

5. Comparison with Prior Surveys

H-4394 (1924) 1:10,000

This survey covers only about 4 square miles of the present survey, from $\frac{1}{2}$ mile east of Chunak Pt. to three miles west therefrom. A comparison with the present survey shows that this area is subject to radical change. West of long. $163^{\circ}28.25'$, intermittent stretches of shoreline, $\frac{1}{6}$ to $\frac{1}{2}$ mile long, have eroded from 30 to 60 meters whereas east of this point to the extremity of Chunak Point the shoreline has accreted northeasterly 150 to 270 meters. In consonance with the shoreline changes differences in depths from 1 to 4 fathoms have occurred since 1924 throughout the area common with the present survey.

The shoreline of Cape Krenitzin is undoubtedly subject to considerable change, but there are no prior hydrographic surveys in this vicinity with which to make a comparison.

The present survey is adequate to completely supersede the prior survey within the common area.

6. Comparison with 8701 (Drawing - Applied 5/26/60)
8860 (Drawing - Applied 5/26/60)A. Hydrography

The hydrography was applied to the drawings of the charts after verification but before review. The applied hydrography is in substantial agreement with the present survey except the low water line in lat. $55^{\circ}05.00'$, long. $163^{\circ}20.00'$ which was revised at the time of the hydrographic review.

B. Topography

The high water line at the inlet in lat. $55^{\circ}05.5'$, long. $163^{\circ}20.5'$ should be revised to agree with the

present survey and T-11478 and T-11479 surveys of 1952-57.

C. Aids to Navigation

The only aid to navigation in the vicinity of this survey is a daybeacon charted in lat. $55^{\circ}02.72'$, long. $163^{\circ}31.30'$ which is shown on the present survey and T-11478 (1952-57).

7. Condition of Survey

The sounding records, the Descriptive Report and the field plotting are satisfactory except as noted in paragraph 2 of this review.

8. Compliance with Project Instructions.

The survey complies with the Project Instructions.

9. Additional Field Work

This survey is considered basic and no additional field work is required.

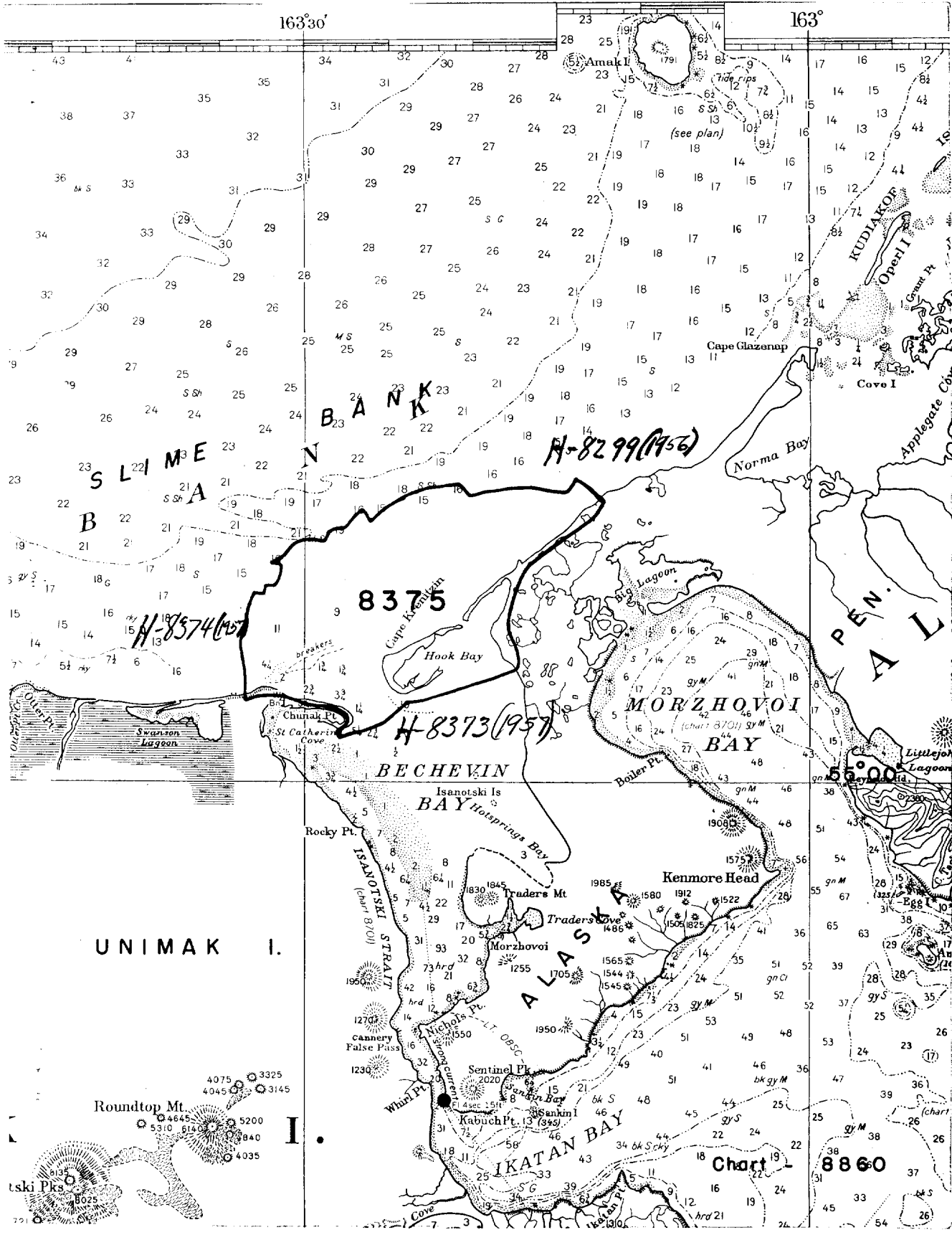
Examined and Approved:

Chief, *J. E. Waugh* 5/26/61
Nautical Chart Division

Reginald W. Richards
Projects Officer,
Operations Division

J. T. Daman
Assistant Director,
Office of Cartography

K. G. Crosby
Assistant Director,
Office of Oceanography



NAUTICAL CHARTS BRANCH

SURVEY NO. H-8375

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6/3/58	8701	M. Rogers	Previously applied thru B.S. (Bps 53292-93) Before After Verification and Review <i>for comparison with Bps soundings are from 1/4 to 1/2 fms deeper on smooth sheet. - No corr made to chart at this time</i>
2/12/59	8860	Helmer	Before After Verification and Review <i>applied thru #8701 Partially</i>
4-14-59	8802	R. K. DeLand	<i>Part applied</i> Before After Verification and Review <i>thru chrt 8860</i>
5/26/60	8701	J. A. M.	Before After Verification and Review <i>After</i> <u>Completely</u>
5/26/60	8860	J. A. M.	Before After Verification and Review <u>before review</u>
5/31/60	8802	J. A. M.	Before After Verification and Review <i>Before</i>
7/15/63	8701	R. S. House	Before After Verification and Review <i>corrected high water & low water lines and added 2nd Before After Verification and Review</i>
			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.