8374

Diag. Cht. No. 8860-3.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PF-2257 *Office No.* H-8374

LOCALITY

State Alaska, Aleutian Islands

General locality Unimak Island

Locality East of Otter Point

1957

CHIEF OF PARTY

F. B. Quinn

LIBRARY & ARCHIVES

DATE April 21, 1958

B-1870-1 (1)

8374

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-8374

Field No. PF-2257

State ALASKA, ALEUTIAN ISLANDS

General locality ~~N. Side of Alaska Peninsula~~ UNIMAK ISLAND

Locality ~~Otter Point, Unimak Island~~ EAST OF OTTER PT.

Scale 1:20,000 Date of survey July 1957

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

Vessel PATHFINDER Launch No. 3

Chief of party F. B. Quinn

Surveyed by R. D. Bernard

Soundings taken by ~~echometer~~, graphic recorder, ~~hand lead~~

Fathograms scaled by Launch Personnel

Fathograms checked by Ship's Officers

Protracted by R. D. Bernard

Soundings penciled by V. Kiisk

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

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 693019

856

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 CS-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 (1940-41) to the Westward, H-6790 (1940-41) and H-8303 (1954) to the North, and H-8375 to the ~~Westward~~ Eastward.

Sheet H-8375 joins H-8303 to the North, H-8299 to the Northeast, and H-8373 inside BECHEVIN BAY.

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. Corrections to tide reducers were applied during verification based on the PORT MOLLER tide gage July 1,2,8,13,14,15,16 to improve the agreement of depths at cross lines. See par. 2 Review.

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° 04.43'N, Long. 163° 47.29'W. Current Station No. 2, off the entrance to BECHEVIN BAY at Lat. 55° 06.72'N and Long. 163° 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 blueline tracings on sheet H-8375, 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 blueline 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 Swansons Lagoon Westward toward Otter Point. This area was covered by a 1940-41 Topographic Survey (T-6730 and T-6858) which was used where the shoreline was not subjected to any appreciable change. All shoreline on H-8374 (1957) except about 1/4 mile East 163°47'. 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 occuring inshore. Therefore the zero foot curve in some areas was drawn by combining (1) the hydrographers estimated distance 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.

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. (SR 1957 # 121)

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

Corrections for tide were obtained from the tide gage in St. Catherines Cove, and other data, and were compiled in the Washington Office. part Haller

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" for additional information. (SR 1957 # 122)

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.

J. ADEQUACY OF SURVEY:

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

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 par. 2 Review.

L. COMPARISON WITH PRIOR SURVEYS:

The only other survey in the area, H-4394 Scale 1:20,000, (not within the area of H-8374 (1951)) was completed in 1924. This previous survey covered the area from about 3 miles West of Chunak Point, along the shore, around Chunak 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. See Review of H-8378 (1951)

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° 02' 42.995" Long. 163° 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. In the Northeast corner of Bechevin Bay, in the area of the entrance as 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
Launch No. 1				
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	34.7
6	l	18	35	8.7
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-8375 (PF-2357)

Volume Number	Day Letter	Date 1957	Number of Positions	Stat. Mi. Soundings
Launch No. 2				
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-8374 (PF-2257)

Volume Number	Day Letter	Date 1957	Number of Positions	Stat. Mi. Soundings
Launch No. 3 (green)				
1	a	2 July	~~106~~ 97	37.0
1	b	8	87	33.4
2	c	9	72	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~~ 971	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° 00.58'N Long. 163° 30.45W.

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.

See tide note H-8375. Apply to this survey

D. R. Engle

Applied Port Moller tide data at minus three (-3) hours and 60% range.

W. E. Roig.

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-8374

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			(for title)							1
Alaska Peninsula			(title only)						BGN	2
Unimak Island									"	3
Otter Point										4
Bering Sea									BGN	5
Swanson Lagoon		(used in text, but not shown on sheet)								6
				h. Heck						7
Tide station off sheet:										8
St. Catherine Cove										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ..8374...

Records accompanying survey:

Boat sheets ..1..; sounding vols. .5...; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 2-Envelopes

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

.....

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

Number of positions on sheet		971
Number of positions checked		176
Number of positions revised		50
Number of soundings revised (refers to depth only)		4,000 *
Number of soundings erroneously spaced		0
Number of signals erroneously plotted or transferred		0
Topographic details	Time	24 hrs.
Junctions	Time	~~16~~ 33 hrs.
Verification of soundings from graphic record	Time	32 hrs.

Verification by W. E. Roig .....Total time ~~195~~ 212 hrs. Date 1/14/60

Reviewed by [signature] ..... Time 55 Date 4/14/60

* Largely from application of new tide reducers

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION -- NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 8374 FIELD NO. PF-2257

Alaska, Aleutian Islands, Unimak Island,
East of Otter Point

SURVEYED: July 1957 SCALE 1:20,000

PROJECT NO. CS-375

SOUNDINGS: 808 Depth Recorder CONTROL: Shoran

Chief of Party ---------- F. B. Qiunn
Surveyed by ---------- R. D. Bernard
Protracted by ---------- R. D. Bernard
Soundings plotted by -------- V. Kiisk
Verified and inked by ------- W. E. Roig
Reviewed by ---------- L. S. Straw April 14, 1960
Inspected by ---------- R. H. Carstens

1. Shoreline and Control

Nearly all of the shoreline within the limits of the present survey is subject to change. About 1/4 mile of shoreline is shown in black on the present survey in the vicinity of long. $163^{\circ}49$; the rest is shown as a red dashed line and was determined from recorded hydrographic information. Except for the foul area delineated at Otter Point on T-6858 (1940-41) the red dashed shoreline on the present survey (H-8373 - 1957) supersedes the shoreline in common with T-6780 (1940), T-6858 (1940-41) and T-11478 (1952-56).

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

2. Sounding Line Crossings

Crossing discrepancies of as much as 0.7 fm. and unnatural curves were eliminated after application of revised tide reducers to about 4000 soundings. Revisions were made in accordance with data from the Port Moller tide stations.

3. Depth Curves and Bottom Configuration 0-6

The usual depth curves are adequately delineated. The 4 and 6 fm. curves have been added to emphasize bottom relief. The bottom is uneven in depths of ~~0-2~~ fathoms. Beyond the 10 fathom curve the bottom is even and slopes gradually seaward to deeper water.

4. Junctions with Contemporary Surveys

In accordance with the Project Instructions, satisfactory junctions were made with H-6624 (1940-41) and 6790 (1940-41) on the west and northwest. The junction on the north with H-8303 (1956) is adequate. The junction with H-8375 (1957) on the east will be considered in the review of that survey.

5. Comparison with Prior Surveys

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

6. Comparison with Chart 8701 (Latest print 1/5/59)
Chart 8860 (Latest print 10/19/59)

A. Hydrography

The charted soundings originate with the present survey applied before verification and review. About 4000 soundings were revised during verification because of a change in the tide reducer. (see paragraph 2 above). The resulting changes do not cause differences in depths between the charted soundings and the present survey of more than 1 fathom.

B. Topography

Refer to the discussion of the shoreline in paragraph 1 of this review.

C. Aids to Navigation

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

7. Condition of Survey

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

b. Some inaccuracy in Shoran controlled lines particularly in the inshore areas is considered probable because of distortion of signals caused by intervening ridges and sand dunes. Inasmuch as the shoreline was determined by estimated distances from these sounding lines it is considered approximate.

c. Distances to shore or to the beach were estimated on this survey but no distances to the high-water line were given. Where estimated distances are to be used for checking or determining the position of the high-water line, a reference should be made to the high-water line.

8. Compliance with Project Instructions

The survey complies with the Project Instructions.

9. Additional Field Work Recommended.

The survey is considered basic for charting and no additional field work is recommended.

Examined and Approved:

Max B. Ricketts
Chief, Nautical Chart Branch

Chief, Division of Charts

Lorin F. Woodcock
Chief, Hydrography Branch

J. Bouvé
Chief, Division of Coastal Surveys

RHC

Form 712
(11-30-55)

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens: 28 May 1958

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 8374

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)

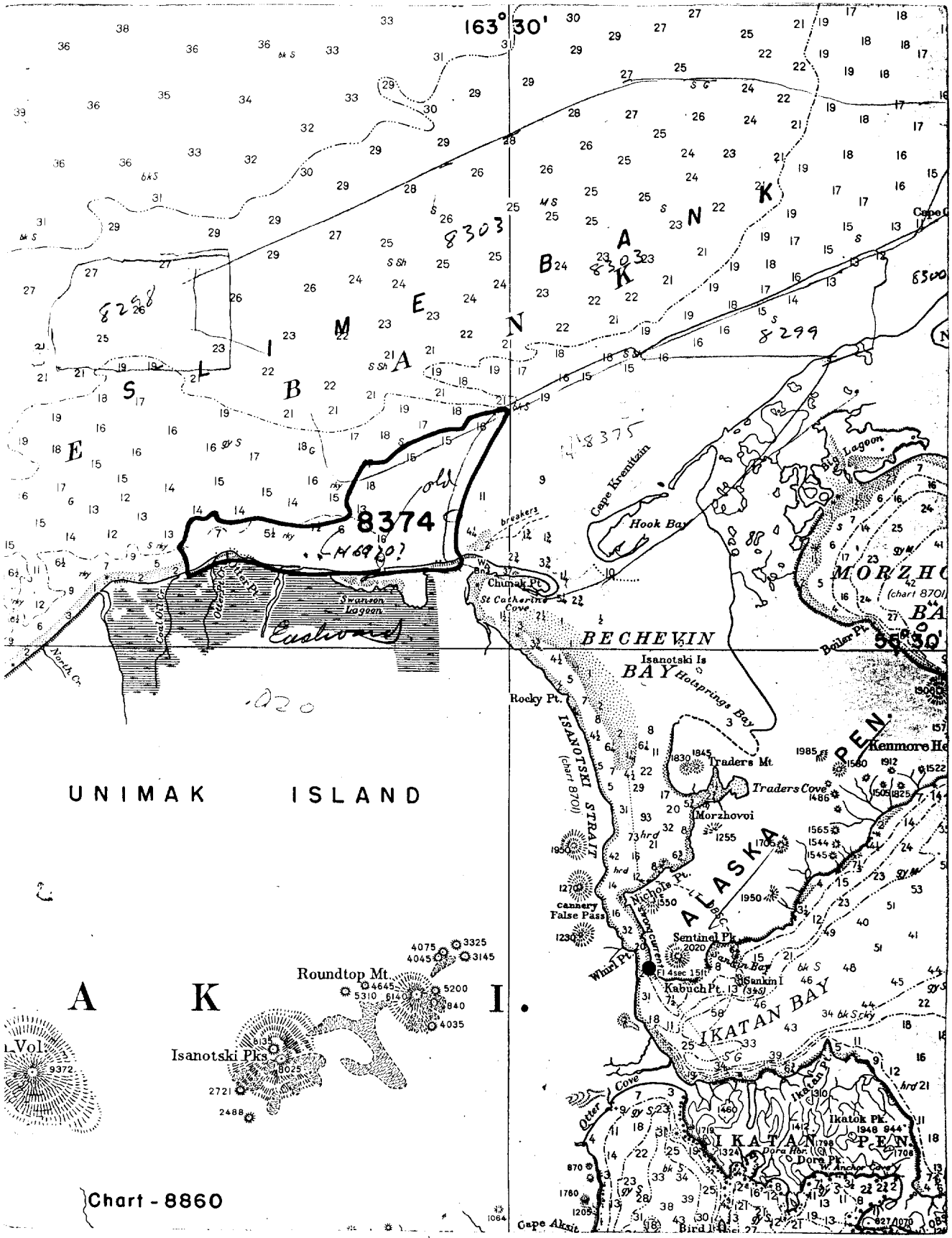
Height of mean high water above plane of reference at the working grounds is 6.8 feet.

Condition of records satisfactory except as noted below:

William Shipman
Signature

Chief, Tides Branch

Comm-DC 34330


163° 30'
8374
8303
8298
8299
8300
8375
Cape Krenitzin
Hook Bay
Big Lagoon
MORZHO
(chart 8701)
BA
Boiler Pt.
55° 30'
Chumak Pt.
St Catherine Cove
Swanson Lagoon
Eastward
BECHEVIN
BAY
Isanotski Is
Hotsprings Bay
Rocky Pt.
ISANOTSKI STRAIT
(chart 8701)
Traders Mt
Traders Cove
Morzhovoi
Kenmore He
ALASKA PEN.
Nichols Pt.
cannery
False Pass
Sentinel Pk
Whirl Pt.
Kabuch Pt.
Sankin I
IKATAN BAY
Otter Cove
Ikatan Pt.
Ikatok Pk.
IKATAN PEN.
Dora Pk.
Cape Aksit
UNIMAK ISLAND
A K I.
Roundtop Mt.
Isanotski Pks
Vol.
Chart - 8860

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8374

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
2/12/59	8860	Ethelmer	Before [redacted] Verification and Review Partially
4-14-59	8802	R.K. DeLaubenfels	Part applied Before ~~After~~ Verification and Review thru chart 8860
5/24/60.	8701	S.G. McGann	~~Before~~ After Verification and Review Completely.
5/25/60	8860	S.G. McGann	~~Before~~ After Verification and Review Completely.
5/31/60	8802	[signature]	[redacted] After Verification and Review
3 Jan 61	9302	Nichols	~~Before~~ After Verification and Review Thru 8802
			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.