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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

A. Pittman
Superintendent.

State *Alaska*

DESCRIPTIVE REPORT.

Hyd. Sheet No. *3575*

LOCALITY:

*Alaska, Shumagin
Is. Papef Strait
Northern End.*

1913

CHIEF OF PARTY:

J. B. Mearns

11-4646

3575

DEPARTMENT OF COMMERCE
Coast and Geodetic Survey
O. H. Tittmann, Supt.

ALASKA

SHUMAGIN ISLANDS

ORIGINAL HYDROGRAPHIC SHEET * 3573.

POPOF STRAIT, NORTHERN END.

Surveyed in June, July, August, 1913 by the party on the C. & G.

Survey Str. PATTERSON

James B. Miller, Assistant, C. & G. Survey, Chief of Party.

George C. Mattison, Aid, C. & G. Survey, in charge of hydrographic party.

SCALE 1: 10,000

POSITIONS plotted by George C. Mattison

DEPARTMENT OF COMMERCE
Coast and Geodetic Survey

O. H. Tittmann, Supt.

SOUTHWEST ALASKA

Shumagin Islands

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET No. *3675*

Surveyed by the Steamer PATTERSON, June - August, 1913.

1. REPORT. LIMITS. SCALE. METHODS. OBSERVER.

I have the honor to report as follows, upon hydrographic sheet No. 4, which shows hydrography in Popof Strait, Shumagin Islands, Southwest Alaska, between East and West Heads on the north, and latitude 55°-18' on the south, as done in June, July and August, 1913, by a party from the Steamer PATTERSON. The scale of the sheet is 1:10,000. Launch No. 47 was used for all sounding. The hand lead was used for soundings less than 20 fathoms, while the Cosmos Sounding Machine, was used for greater depths. Corrections should be applied to all machine soundings as shown in the following table.

Correct Depths with Cosmos Machine and Attached Register.

<u>Machine Reading</u>	<u>: Corrected depth</u>
10	: 11.0
20	: 22.0
30	: 32.9
40	: 43.8

Lines were spaced 200 meters and closer, being 50 meters apart in the narrow parts of the strait, and in Humboldt Harbor. George C. Mattison, Aid, C. & G. Survey was in charge.

2. DANGERS.

There is a flat, rocky shoal, 1200 meters, WNW 1/2 W. from East Head, and 630 meters, NNW 1/2 W. from the NW end of Range Island. This shoal is irregular in shape, about 30 meters wide by 80 meters long, lying in a northeast and southwest direction. The least depth found was 24 feet. The rock was free from kelp or other marine growth. A long, rocky shoal lies 90 meters SW 1/2 S. from the south end of Range Island, and 1,500 meters NEXN from the end of Sand Point wharf. It is 200 meters long and 100 meters wide, and extends in a northeast and southwest direction. The least depth found was 17 feet. No kelp could be seen on this shoal. There is a large, rocky shoal 750 meters northwest of the Sand Point wharf. It is an irregular, pear-shaped shoal 350 meters long in an east and west direction, 150 meters wide near the east end, and 100 meters wide near the west end. The least depth found was 8 1/2 feet, but there is probably less water, the kelp being too thick to sound out the rock completely. Kelp grows over almost the whole shoal. The southwest end of the shoal is marked by a black nun buoy.

There is a small rocky shoal 930 meters W x N from

Sand Point wharf. The least depth found was 13 feet. There were no indications of kelp. There is a sandy shoal, 900 meters, W 1/2 S from the wharf at Sand Point, with a least depth of (28) feet. It is about 50 meters in diameter. 27 ft R.L.G.

3. CHARACTER OF BOTTOM, AND INSHORE DANGERS.

The bottom is mostly hard sand, but it is usually sticky and soft at depths greater than 10 or 15 fathoms. From West Head to Unga Reef, the bottom is very rocky and foul, in some places 400 meters from the high water line. Unga Reef, is 1,500 meters W x N from the wharf at Sand Point, is a rocky extension of the point northwest of it. It is covered with kelp. From Unga Reef to the rocky bluff, opposite and W x N from the long, low sand point, the shoreline consists mostly of sand beach, and the water along the shore is free from rocks and shoals, except close to the rocky points, 1,000 and 1,500 meters from Unga Reef. From this rocky bluff to the south limit of the sheet, there is a rocky ledge extending along close to shore, in places covered with kelp, extending sometimes 300 meters from shore. Along the east shore of Popof Strait, from the south limit of the sheet to the end of the low point 1 1/2 miles north, there is a rocky ledge running along shore, from 100 to 200 meters from the high water line. Between this point and the town of Sand Point, the bottom is free from rocks up to 50 meters from high water line. The bottom is very foul around the mouth of the stream near Sand Point. 100 meters east of the wharf is a rocky ledge extending 50 meters from high water line. From the wharf at Sand Point to East Head, the bottom is foul from 20 to 100 meters off shore. The small bay, southeast of Range Island, is very foul with large boulders. Northeast of Range Island, there are large kelp patches, and the bottom is foul 200 meters and more, off shore. There is a rocky ledge extending 500 meters west from East Head, covered with thick kelp.

4. DIRECTIONS.

The ranges for entering Popof Strait from the north are shown in the accompanying sketch. For entering the course is S 33° W (true), and the peak shown in the sketch should be in range with the black rock, off the point WNW of, and opposite Sand Point. When the 17 ft. spot in the strait is 400 meters abeam on the port hand, and the slope down from the highest part of Egg Island, is in range with the foot of the slope near the low point, the course is changed to S. (true). When the derrick on the wharf at Sand Point bears N 68° E (true), a course may be set for the wharf, which will clear the sandy, 28 ft. shoal, by 200 meters.

5. ANCHORAGES.

The usual anchorage is in Humboldt Harbor in 10 or 11 fathoms. Small boats usually anchor closer to shore, in five fathoms or less. While the hydrographic party was encamped on the low sand point, 1 mile south of the town of Sand Point, during June, July and August, 1913, the mooring for launch No. 47, was placed about 300 meters W x N from the frame house on the north end of the point, in a depth of 5 fathoms, sand bottom. Some heavy blows took place during this time, especially several from the northwest, but the anchor did not drag. Vessels will find good anchorage any place in the strait between Sand Point and Egg Island. Captain Z. Moore, at present deputy marshal at Unga, and formerly Captain of the DORA, says that this is one of the best anchorages in the vicinity, and says that it is good the year round.

6. CURRENTS.

The currents are evidently all tidal, and as far as could be

estimated from the sounding launch, seem to have a maximum velocity of 2 1/2 or 3 knots, near Range Island and in the narrow parts of the strait. Flood tide flows north, while ebb flows south.

Respectfully submitted,

G. C. Mattison

Aid, C. & G. Survey.

APPROVED:

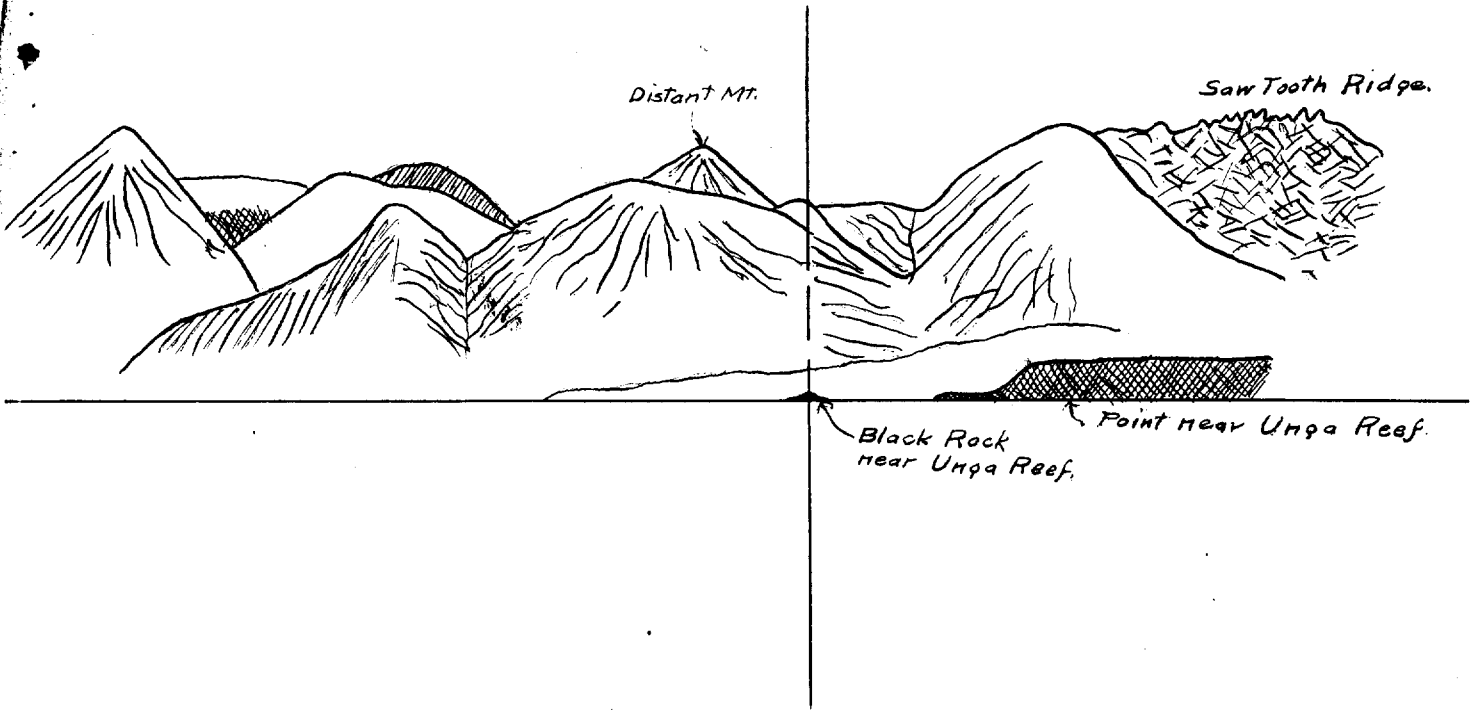
James B. Miller
Assistant, C. & G. Survey,
Chief of Party.

To the Superintendent,
Coast and Geodetic Survey,
Washington, D. C.

At Sea, November 10, 1913.

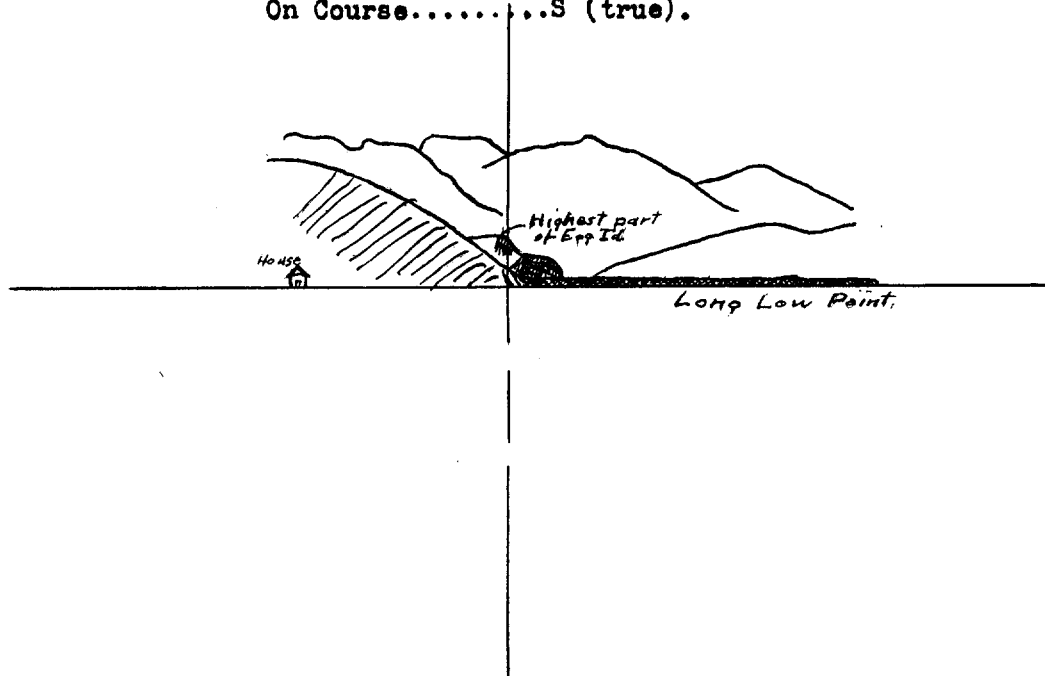
Range for entering Popof Strait from the north.

On Course...S 33 W (true).



Range for passing Unga Reef.

On Course.....S (true).



SHEET NO. *X 3575*

LOCALITY: SHUMAGIN ISLANDS, S. W. ALASKA

DATE. 1913.	BOAT	LETTER	VOL.	HOURS	POSITIONS	SDGS	MILES (Stat.)
June 23	Launch #47	a	1	10.0	144	521	14.6
" 24	" "	b	1&2	10.0	197	828	21.7
" 25	" "	c	2	10.0	236	996	24.5
" 26	" "	d	2&3	9.0	173	648	16.0
" 27	" "	e	3	4.0	64	214	8.1
" 28	" "	f	3	10.0	217	1004	20.9
" 30	" "	g	3&4	9.0	188	779	20.3
July 1	" "	h	4	1.5	24	103	2.6
" 5	" "	j	4	9.5	188	795	20.0
" 8	" "	k	5	0.5	14	79	1.4
" 17	" "	l	5	8.0	146	447	28.2
" 30	" "	m	5	3.0	51	160	8.5
Aug. 19	" "	n	5	2.0	31	120	5.2
" 25	" "	o	5&6	3.0	53	289	3.8
				89.5	1726	6983	195.8

Sq. Statute Miles. *9*

Hyd. 35765

SAILING DIRECTIONS

ALASKA PENINSULA

SHUMAGIN ISLANDS TO VOLCANO BAY

FROM SURVEYS AND RECONNAISSANCE, BY THE

STEAMER PATTERSON

1915.

DEPARTMENT OF COMMERCE
Coast and Geodetic Survey,

SAILING DIRECTIONS

Alaska Peninsula, Shumagin Islands.

POPOF STRAIT AND UNGA STRAIT TO PAVLOF BAY AND VOLCANO BAY WITH

A SKETCH, 1: 300,000

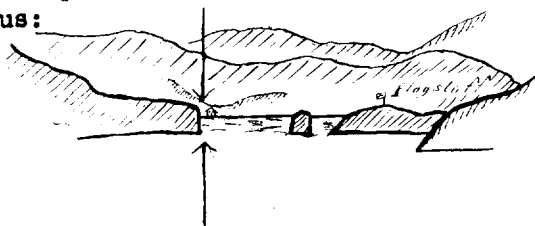
A vessel bound westward and desiring to enter Popof Strait from the southeastward may conveniently pass through West Nagai Strait. There are no known dangers on a track midway between the Haystacks and Nagai Island, but the passage has not been surveyed: it is 3 1/2 miles wide. A cluster of low bare rocks will be seen in the mouth of the first large bight southwestward of Cape Wedge, known as East Porpoise Harbor. The west coast of Nagai Island will be found approximately as shown on chart 8881, and the various coves and harbors are represented in a general way: bearings and courses can be relied upon within a point or less. Woolly Head takes its name from the "woollies" in the lee of it; it is a bare headland 1500 feet high.

POPOF HEAD is a high precipitous headland, with a steep slope of broken rock and talus at its extremity: it is 980 feet high, and has 30 fathoms 1 mile southward of it. Vessels should give it a berth of 2 miles, although in a fog it might be approached more closely.

KELLY'S ROCK marks the southern side of this entrance to Popof Strait: it is a flat-topped islet, grassy on top, 65 feet high, 160 yards across, and 200 yards offshore: there is 14 fathoms within 175 yards of it. Vessels should give it a berth of 1/2 mile or more.

The town of Unga is situated on the north side of Delar-of Harbor. There is no shelter here except in northwesterly weather, and the holding ground is bad: anchors will not hold at all. In the outer anchorage the bottom has a uniform slope from 15 fathoms at the entrance to 3 fathoms in the mouth of the

inner harbor. There is a small pinnacle rock almost awash at low water in the middle of the outer entrance: a vessel should pass northward of this, steering $N 73^{\circ} W$ (true) ($S 89^{\circ} W$ mag.), for the south point of the entrance to the inner harbor, which appears thus:



It is not safe to go into less than $5 \frac{1}{2}$ fathoms. There is a ledge which bares at low water which will be about half way to the mouth of the inner harbor, when one reaches $5 \frac{1}{2}$

fathoms on this course. The inner harbor has 1 to 2 fathoms and cannot be used.

UNGA CAPE is high and rugged: there are no known dangers for a vessel passing midway between Unga Cape and Sealion Rocks, but this passage has not been surveyed.

SEA-LION ROCKS lie 3 miles south of Unga Cape; they are about 130 feet high, flat and grassy on top: there is a ledge which breaks $\frac{4}{10}$ mile eastward of them.

POPOF STRAIT has a pinnacle rock with 8 feet over it, 3 miles $S 71^{\circ} E$ (true) (East, mag.) from Egg Island and $3 \frac{4}{10}$ miles $N 68^{\circ} W$ (true) ($N 86^{\circ} W$, mag.) from Popof Head, and 1 mile offshore: otherwise the strait is clear as far as Sand Point. From a position midway between Popof Head and Kelly's Rock steer $N 41^{\circ} W$ (true) ($N 60^{\circ} W$, mag.) $7 \frac{6}{10}$ miles, passing 1 mile southwestward of this rock, and $\frac{1}{2}$ mile northeastward of Egg Island. When Sand Point is abeam, $\frac{8}{10}$ mile distant, round to $N 52^{\circ} E$ (true) ($N 34^{\circ} E$, mag.) for Sand Point wharf, passing $\frac{2}{10}$ mile off the point on this course to avoid the shoals northward of the course. Anchor as desired after passing the point.

SQUAW HARBOR OR BARALOF BAY is a good anchorage except in bad easterly weather: in approaching from the southeastward, keep $\frac{8}{10}$ mile or more offshore, as there is a rock which may be dangerous, $\frac{6}{10}$ mile due east from the point on the southern side of the entrance: anchor in the middle of the bay in 16 fathoms. A small 4 fathom sand bank lies very slightly eastward of the middle of the bay.

EGG ISLAND is 160 feet high and 600 yards across, and grassy on top: LITTLE EGG ISLAND, close westward of it, is a grass-topped islet, 25 feet high and 130 yards across. There are a few detached rocks round about these islands, and a vessel should not approach closer than 400 yards, where 15 fathoms or more will be found.

Vessels should not approach closer than $\frac{1}{3}$ mile on either the north or south shores of Popof Strait. On the north

shore are two bights where one may anchor, about midway from Popof Head to Sand Point. The southern and western shore is more or less foul from Squaw Harbor northward to the north shore of Unga Island.

SAND POINT is a flat sand spit 4/10 mile long: the south shore has rocky ledges lying at low water line; and the north shore has flat sandy bottom near low water line. There is 7 fathoms 140 yards off the west end of the point.

UNGA REEF extends 2/3 mile south-southeastward from the western shore of Popof Strait, in the narrowest part, opposite Sand Point wharf: it is bare about 2 feet at low water, and has ribbon kelp all round it. It ends in 5 fathoms 1/2 mile north-northwestward from the end of Sand Point.

HUMBOLDT HARBOR furnishes excellent shelter and good holding ground. Anchor in about 10 fathoms, with the end of Sand Point bearing S40° W.(true)(S 22° W.mag.) and Range Island 30 yards open of the land.

SAND POINT WHARF is 1 3/10 miles northeastward of Sand Point, at the head of Humboldt Harbor: it has a frontage of 42 feet and a depth of 14 feet at low water at the end. A vessel can berth only at the end, as there are loose rocks almost bare at low water which form a support for the wharf all the way to its outer face. The wharf is not strong. There is no settlement here; merely a store.

There is a black buoy on Popof Reef: a vessel may cross the reef in 5 fathoms by keeping 100 yards off the buoy: 150 yards southward of the buoy there is another shoal with 2 fathoms.

RANGE ISLAND is 30 feet high and 300 yards across; it is rounded and grassy over the summit. There is 8 fathoms 100 yards from the northwest end. There is no passage between it and Popof Island.

AFTER ROUNDING SAND POINT, northbound, at a distance of 2/10 mile, steer N 52° E(true)(N 34° E.mag.) for Sand Point wharf, until Egg Island begins to close on the bottom of the hillside at Sand Point; then steer north (true)(N 18° W.mag.), with West Head shut in, and the point south of it right ahead, and Egg Island almost shut in right astern passing 160 yards eastward of Unga Reef, and 250 yards westward of the tail of Popof Reef, in 10 fathoms. When the course N 33° E (true)(N 14° E.mag.) will clear Range Island by 300 yards, steer that course; the point of Unga Island near Unga Reefs will then be right astern, and in range with the eastern shoulder of a saw tooth peak in the Unga range of mountains. Pass 300 yards off Range Island in 9 fathoms, and when the northwest point of it bears south (true)(S 18° E,mag.), in range with the point where Sand Point Wharf is located, steer north (true)(N 18° W,mag.); the change of course is 200 yards



east of a 4 fathom shoal.

WEST HEAD is a black cliff 40 feet high, and 1/2 mile south of it are cliffs 300 feet high; there is 10 fathoms 300 yards off it. Give it a berth of 4/10 mile or more, except when desiring to come closer in foggy weather.

It is difficult to enter Popof Strait from the north at night: there are no prominent land-marks, and the entrance is hard to distinguish, on account of the higher land in the background.

In approaching Unga Strait from the eastward, vessels also use Gorman Strait and Korovin Strait, passing southward of Korovin Island, and northward of Andronica and Popof Island. There are no known dangers if one follows the middle of these straits: Gorman Strait is 1 6/10 miles wide, and Korovin Strait is 1 7/10 miles wide, thus being narrower than shown on chart 8881.

CAPE SWEDANIA is an unmistakable headland on the eastern side of Portage Bay, and may be easily recognized by night or day. It is 1200 feet high and has a profile of this form: There is a low terrace along the shore at the point and along the western side; and the mountainside is very steep back of this: the crest of the ridge is narrow and straight. There are strong "woollies" in the lee of it.



PORTAGE BAY offers good shelter on the eastern side about 5 miles from Cape Swedania: there is a small bight here with a low gravel point south of it; and looking up a large ravine containing a stream. The northern end of Portage Bay and the western side were not reconnoitered in 1913.

CAPE ALIAKSIN has no distinctive form; it is of a rounded outline, and low rounded profile: there is a low land for some distance from the shore all round. The summit is broad and flat, and about 700 feet high. There is shoal water near shore all round, and a rock awash at high water about 1/4 mile off the southwestern side.

UNGA STRAIT is 2 3/4 miles wide, between Unga Island and Cape Aliaksin: there is 24 fathoms in the middle of the narrowest point. A vessel should not approach closer than 3/4 mile to either shore. After passing West Head, at the north end of Popof Strait, 4/10 mile distant, on course north (true) (N 18° W, mag.), run 1 1/10 miles, and change to N 71° W, (true) (West) mag., with High Island (northeast tangent of Popof Island) right astern and the tangent of Cape Aliaksin right ahead. Run 4 7/10 miles to Gull Island, and pass 9/10 mile northward of it; then steer West (true) (S 72° W, mag.) 3 2/10 miles, to a low sandy point on Unga Island. Pass 9/10 mile northward of this point; and steer S 65° W (true) (S 46° W, mag.), with Cape Swedania right astern, 15 8/10 miles, to Jude Island abeam 3 4/10 miles distant. On the northwest shore

of Unga Island, from from the low sandy point at the north end for about 2 miles southwestward to the beginning of the rocky shoreline, there is shoal water for 1 mile offshore.

ZACHARY BAY AND COAL HARBOR should be entered with the aid of a revised chart from the survey of 1913: chart 8891 is misleading. The anchorages are not recommended: Humboldt Harbor or Portage Bay are each better, and more convenient. The coal mine is abandoned and will probably not be re-opened.

GULL ISLAND is a flat-topped grass-covered islet, 50 feet high and 80 yards across. It is $9/10$ miles offshore; there is 10 fathoms or more 200 yards from it all round. A vessel may pass if necessary between Gull Island and the shore, keeping $2/10$ mile from the island and $7/10$ mile from the shore: there is a dangerous reef bare at low water, extending $6/10$ mile from shore, 1 mile due south of the island.

NIGGER HEAD OR BAY POINT is a rocky headland of rounded profile; 325 feet high; it forms a good landmark all round, and shows over the land, in Unga Strait.

CAPE ACHEREDIN OR ARCHEDENA is steep and rugged, similar to Unga Cape: it is 1400 feet high, and shows for many miles all round.

JUDE ISLAND is about 150 feet high, and about $1/2$ mile across: it is round in profile, grassy on top, and rocky around the shore. There was a herd of about 200 sealions on it in 1913. There is 24 fathoms $1/2$ mile northward of it, and 20 fathoms $3 1/2$ miles northward of it. Dangerous rocks may be found on a line from Jude Island to Nigger Head, and from Jude Island to Wosnessenski Island. Breakers were seen in these localities and vessels should keep one mile or more northward.

BEAVER BAY lies westward of Cape Aliaksin and is $3 1/2$ miles wide at the entrance. It was not reconnoitered, but a narrow opening or "hole-in-the-wall" was seen at the head of it, which probably leads to Otter Bay.

On the western side of ^{Beaver} Otter Bay the land is low, and rises gradually for 12 miles west-southwestward. The shore is not much indented, and consists of a line of low cliffs with occasional waterfalls.

HAIR-SEAL CAPE OR SEAL CAPE is low and difficult to recognize: 3 miles eastward of it is a southerly projecting point which appears to be cut off to form an island; and one mile due east of this in turn is a rocky ledge $8/10$ mile offshore showing well above water. Both these may be picked up, when skirting the shore in foggy weather: a vessel following the shore will be in 18 fathoms when heading for the ledge, as she proceeds westward.

Abreast of this ledge, about 1/2 mile inshore from the beach, is a hog-back mountain 1100 feet high.

MOSES ROCK consists of two breakers about 1/3 mile apart, 7/10 mile S 30° W (true) (S 12° W, mag.) from Hair-Seal Cape, and 3 1/10 miles west (true) (S 72° W, mag.) from the southwardly projecting point mentioned in the paragraph above. The lead gives no warning of these breakers.

PAVLOF COAL BAY, OR COAL BAY, is a good shelter in northerly weather. It looks east-northeastward up a broad valley, behind the 1100-foot hill already mentioned, and is entered on a N65° E (true) (N 46° E, mag.) course. There is 6 fathoms when Hair-Seal Cape comes abeam on this course. To avoid Moses Rock when entering, round the cape at a distance of 1/3 mile in 11 fathoms; or at a distance of 1 1/4 miles in deeper water, following the shore from Cape Tolstoi.

CAPE TOLSTOI has a bold shore, curved in outline: there are two mountains on it, close together, about 1800 feet high. There are two small islands near shore between Pavlof Coal Bay and the cape. There is 28 fathoms 1 1/4 mile off the cape.

From Jude Island abeam on the previous course, 3 4/10 miles distant, steer west (true) (S 72° W, mag.) 13 1/2 miles, and pass 2 1/10 miles off the point east of Hair-Seal Cape and 2 6/10 miles off Cape Tolstoi. Thence steer S 60° W (true) (S 42° W, mag.) 14 8/10 miles, and pass 1 4/10 miles off Ukolnoi Island, and 1/2 mile southward of Arch Point into Volcano Bay. An alternative course from Unga Strait is to steer S 73° W (true) (S 54° W, mag.) 33 6/10 miles from the same point of departure 9/10 mile north of Unga Island, to a point 8/10 miles off Ukolnoi Island, and thence S 64° W (true) (S 46° W, mag.) 8 9/10 miles to the same position off Arch Point: this course passes 1 2/10 miles offshore as one approaches Hair-Seal Cape. At the point of departure in Unga Strait the depth is 24 fathoms, increasing to 60 fathoms off Beaver Bay; as the land is closed again, the depth decreases to 12 fathoms, and approaching Hair-Seal Cape it increases again to 35 fathoms. From Cape Tolstoi southwestward and off Ukolnoi Island the depth is 60 fathoms.

Ukolnoi Island is steep and bold at the northwest point. East of it are several rocks and ledges showing above water as far as the longitude of Wasnesenski Island, and there appears to be foul ground right across. In case it should be necessary to pass through, a channel might be found by skirting Wasnesenski Island. Along the south shore of Ukolnoi Island there are several breakers 1/3 to 1 3/4 miles offshore.

POPERECHNOI ISLAND has rugged cliffs 1600 feet high along its northeast shore. There is a rock awash at low water 1 1/3 miles from the northwest point of it, in line toward Wosnesenski Island, and another breaker 1 1/3 miles east of this rock. Still further east is a pinnacle rock well above water, in the middle of the strait.

WOSNESENSKI ISLAND has a rocky flat-topped peak 1200 feet high near the southwest point, and the remainder of it is lower: there is a lagoon occupying the northeast portion and a settlement on the north shore. A vessel may anchor in the bight on the north shore, 1/2 mile westward of a bare ledge. Otherwise the shore seems foul all round; and depths of 10 to 15 fathoms are found northeasterly for two or three miles, and probably dangerous rocks exist also.

Currents set in the direction of all the courses mentioned above: there are no currents setting across the course. Generally a steady current of 4/10 knot will be found setting westward: it does not change with the tide except between Unga and Popof Reefs; here a current of 1 knot sets north on the flood tide and south on the ebb. A current of 1 knot sets westward in Unga Strait on the ebb tide, and there is no current on the flood.

AUTHORITIES.

Cape Acheredin or Atoheredina; Geog. Dic. of Alaska, 2nd Ed. local usage, Archedena.

Kelly's Rock, local name.

Squaw Harbor, local name for Baralof Bay.

Nigger Head, local name for Bay Point.

Hair-Seal Cape, or Seal Cape is the point at the entrance to Pavlof Coal Bay. (see Geog. Dic. of Alaska, 2nd Ed., which so states). Bulletin #38 (C. & G. S. 1899), page 130, is wrong in applying this name to the southwardly ^{projecting} point 3 miles eastward of it; and there is no "Coal Bay Point with a small rocky islet lying off its extremity", as mentioned there, unless it is this same southerly projecting point.

Moses Rock, name on Applegate chart. These rocks were located in 1913.

Pavlof Coal Bay, name of Coal Bay on Applegate chart.

Respectfully submitted,

Assistant, C. & G. Survey,
Chief of Party.

Honolulu, T. H.

Jan. 15, 1914.

VEC
Mar. 2, 1914.

HYDROGRAPHIC SHEET 3575.

Shumagin Islands, S.W. Alaska, by Assistant
J. B. Miller in 1913.

RECEIVED
MAR - 4 1914
ASSISTANT IN CHARGE
CHART CONSTRUCTION

TIDES.

	Sand Point ft.
Mean lower low water, or plane of reference on staff	3.5
Lowest tide observed " "	1.6
Highest " " " "	13.1
Mean range of tide	5.1

Hyd. Sheet No. 3575

Within the limits of this work, the ground has been thoroughly and systematically covered and shoal indications carefully examined and closely developed.

The records are clear and well kept and the general character of the work is excellent.

There are a few soundings, which look as if they were probably recorder's errors. For example the $1\frac{5}{6}$ fathom spot, 520 me. south of Δ "Rock", which probably should be $3\frac{5}{6}$ fathoms and the $1\frac{4}{6}$ fathom spot, on line from pos. 10 m to pos. 11 m, 825 me. S. x S.E. from \odot "Kash", which is probably 11 fathoms.

The Chief of Party has been requested for further information concerning the spot last mentioned. The sounding is therefore shown on the sheet (as $1\frac{4}{6}$ fathoms) in pencil only, for the present.

R. L. Johnston

This sounding should be 11 fathoms and has been corrected on the sheet.

It was recorded 2 fath. 3 ft instead of 12 fath. 3 ft. (Letter #467, 1914)

R. L. J.

Soundings expressed in fathoms.

Protracted by field party.
Plotted & inked by R. L. J.
Verified by J. P. Smith

Applied to chart 16553

Dec 1977

Mortot