

2205-2206-2207

Diag. Cht. No. 8202-1 & 8252-1

2208
1808

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2205-2206-2207

2184-2185-2186

2208

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Hydrographic*
Field No. *2205, 6, 7, 8* Office No. *2184-56.*

LOCALITY

State *Alaska*
General locality *Chatham*
Locality *Strait*
1894
194

CHIEF OF PARTY

St. Onid W. J. Moore

LIBRARY & ARCHIVES

DATE

83
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2206
1904

2206

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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

J. C. Mendenhall
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Hyd. c Sheet No. *2206*

LOCALITY:

See

2205

1894
~~*190*~~

CHIEF OF PARTY:

W. J. Moore

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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

J. C. Mendenhall
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Hyd. C. Sheet No. *2207*

LOCALITY:

See

2205

1894
~~190~~

CHIEF OF PARTY:

W. J. Moore

2208

U.S. AND G. SURVEY
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Diag. Cht. No. 8252-1

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SHA
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1894

Department of Commerce and Labor

COAST AND GEODETIC SURVEY

J. C. Mendenhall

Superintendent.

State: Alaska

DESCRIPTIVE REPORT.

By H. C. Sheet No. 2208

LOCALITY:

See

2205

1894
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CHIEF OF PARTY:

W. J. Moore

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U. S. Coast and Geodetic Survey
MAR 27 1895
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U. S. COAST AND GEODETIC SURVEY.

J. C. Mendenhall, Superintendent.

State: *Alaska.*

DESCRIPTIVE REPORT.

Hydrograph sheets nos. 2205-6-7-8

Topographic Sheets Nos. 2184-5-6

LOCALITY:

Chatham Strait.

1894.

CHIEF OF PARTY:

Lt. Comdr. W. D. Mendenhall

2205-6-7-8

Topo-2184-5-6

Write me at:

Telegraph me at:

My Express Office is:

U. S. Coast and Geodetic Survey, STEAMER "PATTERSON."

Mane Island Cal

March 6th, 1895.

2-547

General W. W. Duffield.

Superintendent U. S. Coast & Geodetic Survey.
Sir.

I have the honor to submit the following description report of the work performed by the party on board this vessel during the season of 1894. The statistics of the work is appended. The following is a list of the sheets finished or in progress.

Locality of work. Chatham Straits, S.E. Alaska
Freshwater Bay, Finaker Inlet (Simushan Passage),
North end of Hood Bay including Fullisnoo Harbor.

1 Sheet. Triangulation Sketch 5000

1 " Hydrography Chatham Straits 5000

1 " Shore Line " " 5000

1 " Hydrography. Finaker Inlet and Freshwater Bay. Scale 5000

1 " Shore Line. Same. 5000.

1. 1 Sheet, Hydrography. Massachusetts Con. Harbor
Scale 1/2000
2. 1 Sheet, Shore Line Massachusetts Con. Harbor
Scale 1/2000
5. 1 Sheet, Hydrography North end Woods Bay with
Tullahoma Harbor Scale 1/2000
3. 1 Sheet, Shore Line North end Woods Bay with
Tullahoma Harbor Scale 1/2000
4. 1 Sheet, Topography. Chatham Straits, general.
Scale 1/2000, unfinished.

The work performed during the season of 1894. in-
cludes Chatham Straits from Point Augusta to
Point Samuel, west end of Kenasnow Island, a
distance of thirty-one miles and also Fenwick or
Swish passage and Freshwater Bay.

The coast on both sides of Chatham Straits is bold
and rocky. The surrounding country is covered
with a dense growth of pine and cedar to the high
water mark. The precipitous character of the
beach makes the building of signals and occupa-
tion of stations very difficult and the measurement
of true lines by the ordinary methods almost
impossible.

From Cube Point the East shore of Chatham Straits is generally rocky with no indentations or off-lying dangers until Kootznahoo Head is reached.

$2\frac{1}{2}$ miles South of Cube Point is Point Hepturn, to the Northward of which is a small light available only for boat anchorage. 9 miles to the Southward of this is Fishery Point near which a considerable sized stream empties. At the mouth of the stream there is a ledge, awash at high water, lying close inshore. 2 miles to the Southward of Fishery Point is Marble Bluff which is quite conspicuous on account of its white rocks rising from the water line to the tree line. 7 miles to the Southward of Marble Bluff is Point Parker. 7 miles below Point Parker is Kootznahoo Head, Litruu which and Danger Point, $\frac{3}{4}$ mile to the Southward, is Kootznahoo Inlet. No survey of Kootznahoo Inlet has yet been made. Danger Point, which marks the Northern end of Goods Bay is a bluff wooded point off which is a ledge extending in the direction N. N. W. about 250 metres. The extremity of this ledge is marked by a red buoy.

Kuanawon Island is 3 miles long by $\frac{1}{3}$ mile wide.

lying in the direction E. N. E - W. S. W. Its Western extremity is Point Samuel 2 1/2 miles from Danger Point - Between Danger Point and Kuanow Island the land falls away to the Eastward forming a light in which is the village of Angoon. Off the village distance 1/2 mile are extensive reefs the tops of which are always visible. The Runquet from Danger Point to Point Samuel, direction S. S. E 1/4 E passes outside and clear of the reefs. The light is generally foul except in the Northern part where there is a fair weather anchorage between the reef and Danger Point.

On the North Side of Kuanow Island are several projecting reefs and the ground is generally foul inshore. A red buoy on the most northerly extension of the reef marks the extent of navigable water. From this buoy the direction of the Channel leading to Killisnoo Harbor is E 1/4 N. The channel between Kuanow Island and Admiralty Island is very narrow and in summer seems to be filled with kelp. There is 4 1/2 fathoms in mid channel. A reef extending from Kuanow Island is marked by a beacon.

which is lighted for the arrival and departure of the Pacific Coast Steamship Co's Steamers.

The harbor of Killisnoo is contracted and affords little protection from South Easterly gales.

The village of Killisnoo is situated on the East end of Kanasnow Island. Here is the Post Office and the works of the Alaska Oil and Grano. Co.

The company maintain a wharf with 25-30 ft water. and two small steamers, one of which is available for towing.

To the Southward of Kanasnow Island and lying in the main body of Hood's Bay, are two small low islands destitute of trees. Tule Island and Sand Island. The Southern entrance to Killisnoo Harbor is a mid channel course between Kanasnow and Tule Islands. A Beacon on Kanasnow Island marks a projecting spur to the Southward and a red buoy marks the extremity of a reef in the Eastward part of the harbor known as Lone Rock. Any portion of the East shore may be approached with safety to within 1/3 mile except Danger Point and the Light to the Southward.

On the Western shore, to the Southward of Point Augusta

are several coves the southernmost of which has received the name Iyoutkan Cove. All these coves are without shelter and are unfit for anchorage.

8 miles to the southward of Point Augusta is North Passage Point. This is a low rocky point nearly north extending 3 miles in a South Eastward direction from the high land back of it. At a distance of $2\frac{1}{2}$ miles, S by $E\frac{3}{4}E$, from North Passage Point is East Point.

Between these is the entrance to Hushwater Bay. This Bay or arm extends from Chatham Strait in a direction N. N. W. $\frac{1}{2}$ W. for a distance of 11 miles and is 2 miles wide. Its head terminates in a sand flat with a large stream. Its northern shore is steep to offering no anchorage. There is a detached rock $3\frac{1}{2}$ miles inside entrance and two islands in mid-channel. On its South side, 2 miles from East Point is Massachusetts Cove opening to the Eastward. This is an indifferent fairweather anchorage. It has extensive sand flats at its head with a small stream.

Parlov Harbor, also known as Nasantui, $1\frac{1}{2}$ miles above Massachusetts Cove is a good summer anchorage for moderate sized vessels. It is open to the North. It is $\frac{1}{2}$ mile in width and the same in depth.

A large stream enters it on its southwestern side. On the west side of the harbor is a rocky ledge which is covered at high water. The anchorage is in 14 fathoms between the ledge and the east side of the harbor.

1/2 miles above Parlor Harbor, on the south side of Freshwater Bay, is an admirable anchorage for small vessels at all seasons. It is protected from the Northward by an off-lying island. The entrance is narrow but has from 4 to 5 fathoms of water.

Freshwater Bay contains no other anchorages but small vessels may anchor at the head of the bay or off the flats at mouths of streams, of which there are several.

East Point divides Freshwater Bay from Tenakee Inlet (commonly called Shirash Passage). It is low and broad at the water's edge, rising rapidly to the higher ground in rear. There is a green knoll at the extremity of the point with several detached rocks close inshore.

2 3/4 miles S. E from East Point is South Passage Point which is the southern entrance point to Tenakee

Inlet.

The entrance to Lenakee inlet is $2\frac{1}{2}$ miles wide and is clear with the exception of a rock, awash at lowest low water which lies $\frac{1}{2}$ mile North East from South Passage Point. The inlet is 37 miles long. It has a general direction S. $W\frac{1}{2}N$ for 10 miles, and for the remaining 27 miles the general direction is $W\frac{1}{2}N$. Its width is from 1 to 3 miles. Its Northern shore is steep and rocky for 10 miles from the entrance at which point is Hoonaah Hot Springs and an Indian village. From this to the head of the inlet the fore shore is comparatively low and all densely wooded to the water's edge. The North shore is clear, with few indentations or off-lying dangers. There is a small high-water island, with a few trees and Indian grass, abreast the Indian village also two rocks, exposed at high water $S\frac{1}{4}E$ from the village, distant $\frac{2}{3}$ mile and a small rock $N\frac{3}{4}S$ from the village. From the last named rock, running $W\frac{1}{2}N$, distant 8 miles are two small rocks exposed at half tide.

The South shore is the same in character for $5\frac{1}{2}$ miles within the entrance, (at this point the inlet is $1\frac{1}{4}$ miles wide) It then increases to 2 to 3 miles in width and

The shore becomes low with several bays and coves.
 At 12 miles from the entrance is a bay 5 miles long, $\frac{1}{2}$ mile
 wide, general direction S. W. by W. The shores are low
 and sandy. On its southern side is an extensive sand flat
 with a high water island. The depth varies from 35 fms
 at entrance to 15 fms at its head affording anchorage
 for its whole length, bottom sand and mud. At its
 head there is a sand flat with a small stream of fresh
 water. 3 miles N. W. W. from the last mentioned bay is
 a small light, the entrance to which is perfectly clear.
 It affords an excellent anchorage for small vessels.
 6 miles along this is a larger bay, 3 miles long, $\frac{2}{3}$ mile
 wide which has a detached rock, covered at high water
 near its center. It has from 20 to 30 fathoms water.
 $2\frac{1}{2}$ miles along this is a bay $2\frac{1}{2}$ miles long. Its entrance
 is somewhat contracted by a reef on its north side
 covered at half tide. The entrance to the southward of
 the reef is $\frac{1}{3}$ mile wide and perfectly clear with 15
 fathoms water. Someways within the bay are from
 15 to 22 fathoms, muddy bottom.
 From this point to the head of the inlet the shore is
 low with true indentations and several sand
 flats with streams of water. At $1\frac{3}{4}$ miles from

The head of the inlet there is a passage about 50 yards connecting with Port Frederick on Jay Straits.

The channel of Anaku Inlet is perfectly clear with the exceptions noted. At its entrance the depth of water is 35-40 fathoms. Inside the entrance there is 100-102 fathoms. 7 miles within the entrance the depth is 60 fathoms, which depth is carried for 11 miles. From this point to the head of the inlet it shoals from 74 to 25 fms. in mid channel.

South Passage Point. Has on its northern side a clump of high-water islands or rocks, the largest of which is wooded. From South Passage Point, the general direction of the west shore of Chatham Straits is S. E. $\frac{1}{2}$ S. 6 miles S. E. is Basket Bay. This is a small light $\frac{1}{4}$ mile wide and $1\frac{1}{3}$ miles deep. Both shores are bold and rocky. At the southern side of its entrance there is a reef in shore, also some detached rocks. The general direction of the bay is West. It affords an indifferent anchorage for small vessels as South Easterly winds draw directly in, the bottom is rocky with a depth of water from 20 to 30 fathoms.

7 miles below Basket Bay is a very conspicuous, white, dome-shaped rock; lying close in shore.

11
off the mouth of a small stream. It is 35 feet high and forms an unmistakable landmark. 1 2/3 miles S. E from this is a rocky point off which, at a distance of 1/2 mile lies a detached rock covered at high tide - the detail survey terminates at this point. The buoy on Morris Reef, entrance to Peil Straits is visible and appears on the Hydrographic chart, although the shore line, for want of sufficient signals, was not carried to that point -

The steamers of the Pacific Coast Steamship Co. call regularly at Killisnoo for the delivery of mails and freight.

There are no laws regulating pilotage in Alaskan waters. Pilots are carried by all steamers navigating Chatham Straits and vicinity. Vessels arriving off the coast call at Sitka for pilots and if in need of tow boats, communicate with the Alaska Oil and Grease Co. at Killisnoo from which point a tow boat can ordinarily be sent to Cape Ommaney, the entrance to Chatham Strait.

The tides in Chatham Straits and vicinity are very regular. The record of tides in Carbor Harbor

gins. Duration of rise 6^h 12^m.5. Duration of fall 6^h 12^m.6. Mean duration of stand 26.7^m. The tidal currents in Chatham Straits are parallel to the axis of the Straits though the currents in Killisnoo are much influenced by prevailing winds.

Navigation in Chatham Straits and vicinity has never been impeded by ice. The data in regard to fog is incomplete. Navigation may be impeded from this source at any season of the year.

Although fresh water is abundant by reason of the many streams discharging into Chatham Straits and vicinity, vessels must obtain water on their own resources. By boats or casks.

Coal in quantity can only be purchased from the Pacific Coast Steamship Co. The Steamers of this line will carry coal in 100 ton lots or less from Departure Bay or Nanaimo, B.C. when ordered.

The wharf at Killisnoo, the property of the Alaska Oil and Grease Co, is the only one within the limit of the seasons work. This has 25-30 ft at its outer face.

There is a Post Office at Killisnoo, Koonow Island

The nearest Custom House is at Sitka -
 the only settlement having regular communication
 with the United States is Tillamook.

The Latitudes and Longitudes of the Astronomical
 stations for the season are as follows. Both depend
 on the longitude of Sitka Suny. intime. $9^h 01^m 20^s 6$

① Lopez Lat N. $57^{\circ} 48' 17.96$ Long W $134^{\circ} 56' 14''$

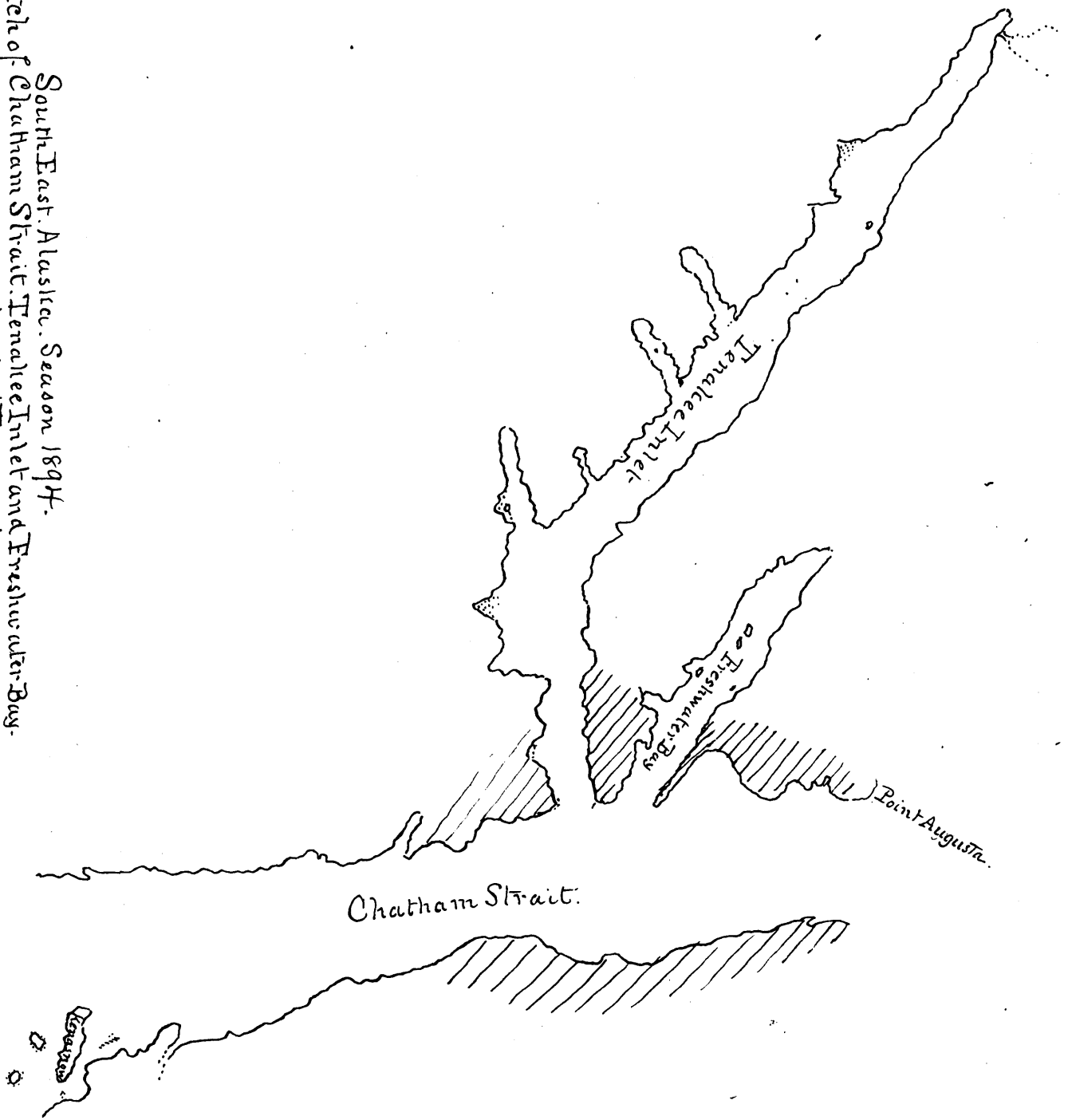
② Angoon " " $57. 30 4.04$ " " $134^{\circ} 34' 52''$

Yours respectfully

W. J. Moore

Lieut Comdr. U.S.N. Chief of Party.

Sketch of Chatham Strait, Tenalee Inlet and Freshwater Bay.
South East Alaska. Season 1894.
Red lines show finished topography.



Statistics of Field Work executed by *the general party on Grand Ave*
W. S. Coast & Geodetic Survey Steam Patterson Season 1894

Date of beginning field work *May 28th 1894*
 Date of closing field work *August 14th 1894*

RECONNAISSANCE:

Area of, in square statute miles
 Lines of intervisibility determined as per sketch submitted
 Number of points selected for scheme

BASE LINES:

Primary, length of *1950.567 meters*
 Secondary, length of
 Beach measurements, length of
 Number of days employed in measurements of base } *22*
 Number of days employed in re-measurements }

TRIANGULATION:

Area of, in square statute miles
 Signal poles erected, number of *A 44 O 232* *276*
 Observing tripods and scaffolds built, number of
 Observing tripods and scaffolds built, heights of
 Days occupied in opening and verifying lines of sight, number of
 Stations occupied for horizontal measures, number of *291*
 Stations occupied for vertical measures, number of *48*
 Geographical positions determined, number of *2*
 Elevations determined trigonometrically, number of

GEODESIC LEVELING:

Elevations determined by spirit-leveling of precision, number of
 Lines of geodesic leveling, length of

LATITUDE, LONGITUDE, AND AZIMUTH WORK:

Latitude stations occupied, number of *2*
 Pairs of stars observed for latitude, number of *41*
 Average number of observations on a pair
 Longitude stations, telegraphic, number of
 Longitude stations, telegraphic, number of nights on which signals were exchanged
 Longitude stations, chronometric, etc., number of *2*
 Azimuth stations, number of *2*
 Number of nights of observations for azimuth *1*
 Number of stars observed for azimuth *1*

GRAVITY DETERMINATIONS:

Number of pendulum stations occupied

MAGNETIC WORK:

Stations occupied for observations of the magnetic declination, number of

Stations occupied for observations of the magnetic dip, number of

Stations occupied for observations of the magnetic intensity, number of

TOPOGRAPHY:

Area surveyed in square statute miles

385.5

Length of general coast-line in statute miles

301.11

Length of shore-line of rivers in statute miles

Length of shore-line of creeks in statute miles

Length of shore-line of ponds in statute miles

Length of roads in statute miles

Topographic sheets finished, number of

1 map made

3

Topographic sheets, scales of

1:10000 1:20000 (3:20000 1:10000)

Topographic sheets, limits and localities of:

Chatham Straits, Fanning Inlet + Freshwater Bay, Stillman's (North end of Hood's Bay, Freshwater Bay (Nashmitt Con and Parlor Harbor))

1 Mangrove Sheet 1:10000

HYDROGRAPHY:

Area sounded in square geographical miles

320.00

Number of miles (geographical) run while sounding

830.53

Number of angles measured

4143

Number of soundings

6619

Number of tidal stations established

3

Number of specimens of bottom preserved

8

Current stations, number of

Hydrographic sheets finished, number of

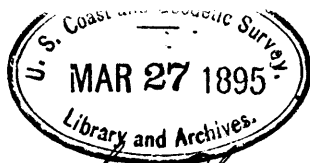
4

Hydrographic sheets, scales of

1:10000 1:20000 1:50000 1:10000

Hydrographic sheets, limits and localities of:

Chatham Straits, Fanning Inlet and Freshwater Bay, Nashmitt Con and Parlor Harbor, Stillman's Harbor, North end of Hood's Bay.



Sailing Directions for Chatham Strait
Killsnoo Harbor. Basket Bay. Senasnoo Inlet
and Freshwater Bay.

The direction of Chatham Strait from Point
Samuel to Point Augusta is N. 71° $\frac{3}{4}$ W. This
course may be made in mid channel in
perfect safety with a depth of water of from
295. to 325. fathoms. Either shore may be approached
to within $\frac{1}{3}$ mile safely, the depth of water at
this distance being nowhere less than 40 fathoms.
Entering Killsnoo from the Southward. Stand
up until within $\frac{1}{2}$ mile of Point Samuel, West
end of Senasnoo Island, bearing N by 71° $\frac{1}{2}$ W.
from which point a course N. E. 3° $\frac{1}{4}$ E carries clear
between Senasnoo and Table Islands and leads
to the red buoy on Low Rock. Bearing clear
the Beacon on the N. E. end of Senasnoo Island.
The course is North for the anchorage which is in
14 fathoms water. The end of the wharf at
Killsnoo bearing N by S. 3° $\frac{1}{4}$ S.

If entering Killsnoo Harbor from the Northward.
Stand in for the red buoy to the Northward of
Senasnoo Island on an E. S. E course

2

From the Ledge the course $E\frac{1}{4}N$ leads clear of the reefs on Sunarrow Island and to the Lagoon on the ledge abreast the village which is to be passed close aboard and to the anchorage as before. The channel between Kerasnow and Admiralty Islands is very narrow and is fringed with reefs on both sides. In summer it is impossible to keep entirely clear of the kelp which seems to fill the channel. $4\frac{1}{2}$ fathoms can be carried in mid channel. This channel is used by the steamers of the Pacific Coast Steamship Co. When using it at night the Lagoon abreast the village is lighted. The harbor is contracted and the usual anchorage is not well protected from the S. E.

Many S. E. gales vessels may anchor abreast the wharf. The bottom is rocks and sand.

Basket Bay, on the West side of Chatham Straits bears $N. N. W\frac{1}{4}W$ from Point Samuel. Its entrance is $\frac{1}{4}$ mile wide and the depth of the Bay is $1\frac{1}{3}$ miles. Its shores are nearly parallel, converging slightly to the head of the Bay. The mid channel course up the Bay is West and is clear with the exception of a reef and some detached rocks on the south.

side. It is an indifferent anchorage, for small vessels only, as South Easterly winds draw in. The bottom is rocky, depth 20-30 fathoms. At the head of the Bay a large stream of fresh water enters which flows from a lake about 1/4 mile from the head of the Bay.

Entomby Fenakee Inlet, a mid-channel course, forming the North shore if anything, will be found to be perfectly clear, depth at entrance 35-40 fathoms.

On a line joining South Passage Point and East Point and 1/2 mile distant from South Passage Point is a rock, awash at lowest low water.

1 mile within the entrance the water deepens to 100 fathoms. From this point to the head of the inlet the depth varies from 85 to 25 fathoms, decreasing gradually until the head of the inlet is reached. There are no anchorages in the main channel until the head of the inlet is reached when vessels may anchor off the sand flats in 25 fms water.

Anchorage may be found in any of the four arms previously described. The entrances to all are clear and the anchorages well protected.

The entrance to Freshwater Bay is between East Point

and North Passage Point. Entering in Mid Channel 40 to 25 fathoms may be carried to the head of the Bay the general direction of the Bay is $W N W \frac{1}{2} W$. The width 2 miles, depth 11 miles. The north shore is steep to and without anchorages -

On the South side 2 miles from East Point is Massachusetts Cove, a small light opening to the Eastward. This may be used as an anchorage in fair weather, anchoring in 8-10 fathoms between entrance points. The cove terminates with sand flats at its head, with a small stream of fresh water.

Parlor Harbor (Nasanki) is $\frac{1}{2}$ mile above Massachusetts Cove on the South Arm of Freshwater Bay. It is a good Summer Anchorage for moderate sized vessels, being protected from the S. E. and S. W. It opens to the Northward and would not be tenable during the prevalence of Northwesterly or North Westly gales. It is $\frac{1}{3}$ mile in width and about the same in depth. There is a reef extending from the East Entrance point 80 meters and on the west side of the Harbor, corund at high water is a ledge or pinnacle. This rock lies 800 meters from high water mark. Vessels may anchor outside the rock or between

there. and the east shore, the clear anchorage being 600 meters in width. A large stream enters the S.W. Corner of the harbor. with some Indian fishing huts at its mouth. This is an excellent maturing place. Salmon, Salmon trout and Halibut are very abundant. The stream comes from a lake about 1/2 mile above the fall. The anchorage is in 14-15 fms water. The bottom sand and rocks.

1/4 mile above Harbor Harbor, on the South side of Freshwater Bay there is an excellent harbor for small vessels at all seasons. It is well protected in all directions. The entrance is narrow but 3 1/2 - 4 fathoms can be carried in mid-channel. There is a small spur on the S.W. side which is marked by a waterfall. I have called this anchorage Cedar Cove.

Vessels may anchor at the head of Freshwater Bay, off the sand flats.

From North Passage Point to Point Augusta there are no anchorages. Igoukum Cove, immediately north of North Passage Point is mentioned in the Sailing directions as an anchorage. It might be used as a night anchorage, in which case anchor off the sand beach in not less than 30 fathoms.