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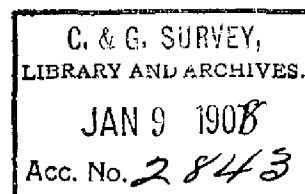
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Form 504	
U. S. COAST AND GEODETIC SURVEY	
DEPARTMENT OF COMMERCE	
DESCRIPTIVE REPORT	
Type of Survey	<i>Topographic</i>
Field No.	Office No. <i>2843</i>
LOCALITY	
State	<i>Alaska</i>
General locality	<i>Knight Island</i>
Locality	<i>Passage. Prince</i>
	<i>William Sound</i>
<u>1907</u>	
CHIEF OF PARTY	
<i>R. B. Leickson</i>	
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DATE	



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RECEIVED
COAST AND
GEODESIC SURVEY



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DESCRIPTIVE REPORT

Of the

SHORE LINE

Of

KNIGHT ISLAND PASSAGE

PRINCE WILLIAM SOUND

ALASKA

1907

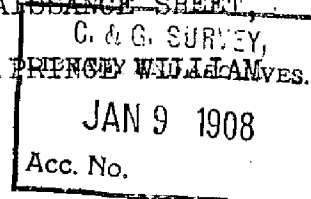
R.B. Derickson,
Asst. C. & G. Survey,
Comdg. U.S.C. & G.S.S. TAKU.

To Accompany
Plane Table Reconnaissance Sheet

2843

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REPORT TO ACCOMPANY THE PLANE TABLE RECONNAISSANCE SHEET
SHOWING THE SHORELINE OF KNIGHT ISLAND PASSAGE, PRINCE WILLIAM
SOUND, ALASKA.



Construction.

Having the known distance in meters between "Helen", "Grace", "Summit", and "Evans", triangulation stations, they were plotted on the sheet to scale of 1:40000. Likewise each station of the scheme of triangulation through Knight Island Passage was plotted as the work progressed. From the triangulation stations occupied, cuts were taken with the theodolite to all prominent points, islands, bays, mountains, and headlands, to aid in the topographic survey. The sheet was also used on the plane table which was set up at salient points along the S.E. and south coasts of Knight Island, and the Sister Islands. This work was supplemented by sextant cuts from the Str. TAKU while on the deep-sea sounding lines, and at the same time plotted, while the sounding was being taken. In this way the location of all points was verified. There were approximately 120 points along the shoreline accurately determined by this method. These with the cuts and tangents taken from the triangulation stations, together with the plane table, gave an accurate way of sketching in the trend of the shoreline. The shoreline which was actually run out with the plane table, is shown with the full line, and such points as were determined with sextant and plane table cuts, are shown with the small circle.

At the north end of the island through the passes to Montague Strait, and through the narrow passage from the south end of the island to Drier Bay, sketches were made from the bridge of the TAKU,

with bearings and estimated distances sketched in as the vessel proceeded on her courses. (The Upper Pass was sketched in from the N.W. entrance, and the bay at the head of Bainbridge Pass was sketched in from the TAKU, from the points determined in its vicinity. Other bays shown were entered and sketched in the same manner.)

The points in Herring Bay were transferred from the plane table sheet in order to connect the sketch with the shoreline actually surveyed. The position of the plane table sheet of Drier Bay is outlined in pencil. The outline of Lone Island is shown by tangent cuts, the south end being located by the triangulation station "Lone".

Descriptions.

Lone Island is 2-3/4 miles long, and 1/3 of a mile wide, trending approximately north and south, and terminating in a low point at its N.W. corner. In general the shoreline is rocky and steep, and the ridge which extends nearly its full length, is about 600 feet high, and heavily timbered from the crest to the bluffs at the water line. A small sand beach is on each side of the south point, the point itself being about 40 feet high, and rocky. There is an abandoned fox ranch with several buildings between the two sand beaches. As seen from the west side, the N.W. point is apparently a low sand beach. The cliffs on the east side are higher than those on the west, showing the erosive action of the sea, the west side being more protected.

The cuts taken to the extremities of Perry Island give its approximate location. As seen from Lone Island, the shores appear rocky, the land heavily timbered, and rising abruptly from the shoreline.

Grafton Island which is separated from the mainland by a rocky channel about $1/2$ mile wide, is composed of an island 1 mile long, and $1/4$ of a mile wide, with two low lying islets at its south end. This island has the station "Cave" at its N.E. point. Here the shoreline is gradually rounding to the north side. The north end of the island is about 100 feet high, with steep, rocky bluffs. These bluffs are considerably eroded, and deep caves enter from the water-line, extending 50 to 100 feet under the cliffs. These cliffs appear a light grey color from the passage, and are easily distinguished from the shoreline of the mainland. From "Cave" to the southward the shoreline is much lower, having stretches of sandy beaches, strewn with boulders.. At the south end there is a small, well built house, and several sheds, occupied by a fox-rancher. The two islets are low, with white sandy beaches. Trees and deciduous growth extend over the entire island. The sandy beaches of the islets and the south end of the main island are noticeable from mid-channel.

The main shoreline west of Grafton Island appears rocky and high, bushes and trees extending back from the bluffs.

Point Nowell terminates in a small hook, upon the eastern point of which is located the triangulation station "Nowell". The hook itself is about $1/3$ of a mile long, and 200 meters wide. Back from the triangulation station it reaches a height of from 30 to 50 feet. The shores are low. The point is a series of broken ledges, and a long gravel beach extends from the triangulation station to the N.W. The neck of the hook is low, and the mountains rise directly back of it to an elevation of about 2000 feet. The hook, neck, and mountain-sides are timbered. The shoreline on the west side of the little bay, inside the hook, is steep and rocky. Broken boulders

and granite blocks line the beach for several miles, extending down the west side of Dangerous Passage. The mountains rising back from the shoreline, are covered with timber to an elevation of about 1000 feet. Six miles N.W. of Pt. Nowell, there is a very prominent, pyramidal shaped peak, standing well out from the surrounding mountains. Its elevation is 3148 feet. Also a conspicuous, double-peaked mountain, 8 miles west from Pt. Nowell has an elevation of 3075 feet. These peaks were the first of the lower mountains to show the fall of snow, the crests whitening up about Oct. 1st.

The small island which lies in the north entrance to Dangerous Passage near the Chenega shore, is low and covered with trees. It is triangular in shape with rocky shores and several detached islets on its N.W. side

Chenega Island on the S.W. side of Knight Island Passage, is high with barren, round-topped mountains. It is 8 miles long and 4 miles wide at the south end, coming to a point at the north end, at the entrance to Dangerous Passage. Its shores along the east and south sides are irregular and rocky. The coastline on the east side has a north and south trend, rounding into a slight projection at the station "Chop". About 1 mile south of this station there is a short sand-beach at the entrance to a draw, which extends up into the mountains. The south end of the beach terminates at the steep mountain-side which projects itself into a bluff 40 feet high.

Broken cliffs and steep shoreline extend to the S.E. point of the island. This point is about 40 feet high with rocky shelving sides. Trees cover it to within 20 feet of the water-line. Rounding this point, the south side is of the same character and appearance as the east side. A prominent landslide on the south face of the mountain

two miles from the S.E. point, marks Chenega village which lies at its base. Chenega village situated near the head of the small bay, is merely a collection of Indian huts. One white man and six Indians were living at this village. The small islands directly off the village bay, are low and wooded, with rocky shorelines. The S.W. point of Chenega Island appears low and wooded, but in general throughout, the mountains rise directly from the coastline, and are timbered to an elevation of 1000 feet, the mountains themselves generally reaching 1800 to 2000 feet.

The island which bears south from the S.W. point of Chenega, 2-1/4 miles distant, appears round, with an elevation of about 200 feet. It is wooded and stands out clearly.

The point of the mainland directly south of this island, is high and wooded.

Pt. Countess has a high irregular shoreline. Where the signal "Countess" is located, the bluffs are about 40 feet high, with steep mountainsides directly back. On to the westward the shoreline is broken, with rock-strewn beaches, and projecting headlands. Several small bays lie behind the ledges directly to the westward of the point, and the slope of the mountainside is not so abrupt.

There are three noticeable peaks S.W. of Pt. Countess. Claw Peak, whose elevation is 2490 feet, as seen from the north and east, resembles a claw or talon. Black Peaks, No. 1 and No. 2, are of about the same elevation. The summits are sharp and appear black. Crown Peak which is on the crown of the glacier 20 miles to the westward, was located by the triangulation, but could not be plotted on this sheet owing to the distance.

Rounding Pt. Countess into the bay, at the head of Bainbridge Pass, the shoreline has the same general characteristics as that to the westward, broken and steep, with an occasional rock-strewn beach. The N.W. point at the entrance to Bainbridge Pass is a headland, about 150 feet high, connected with the main shoreline by a low neck of land. It is wooded with rocky, steep sides. The S.E. point at this entrance is about 40 feet high, and has a number of grass patches on the rocks, with small shrubs and underbrush growing to the waterline. There are several high, disconnected ledges off this point. From here around to the head of the bay, the shoreline is broken and rocky, with underbrush and trees growing to the water's edge, and steep mountainsides rising directly from the shore. The islets at the head of the bay are low and wooded. All along the eastern side, the shoreline is of the same character as the western. At the S.E. corner of the bay, the ridge extending up Fleming Island, is low, approximately 200 to 400 feet high, gradually rising from this to the summit of Flat-Top Mountain. This mountain was called Table Mt. in the triangulation records, and referred to as Flat-Top in the hydrographic report. It is 1532 feet high, and has the appearance of a truncated cone, the top surface of which is approximately 200 meters in diameter. The sides all around from the top down for 100 feet, are very steep. Approaching this from the north and south, the slope is more gradual. A deep gorge indents the west side, while the east side slopes regularly to the water's edge. The extreme north point of Fleming Island has rocky, bluff shores. The small point at the N.W. is 50 feet high, and is connected with the main point by a narrow, low neck of land. This point and the

north end of Fleming Island, are covered with scattering spruce trees, grass, and deciduous growths.^{4p} From an elevation of 1000 feet, it is mostly moss and stunted pines.

The large island which lies on the east side, near the north end of Fleming Island, in Prince of Wales Passage, is about 2 miles long and 1 mile wide. Its north shores are high and rocky. The south end is low, and has several islets off its S.W. side. On the east side there are two islets, lying close to the shore, which from Knight Island Passage, resemble two vessels under sail. Along the west side there are a few shallow bays. In one of these is located a saw-mill, owned by a man by the name of Fleming. There are three or four board houses, and several sheds around the mill. The mill was not in operation during the summer. The interior of this island is hilly; its sloping hillsides extending to the beach, are covered with trees and grass. These rolling hills have an approximate elevation of 600 to 800 feet. This island has been referred to as Saw-Mill Island in the triangulation records.

The small island which lies $1/3$ of a mile north of the island described in the above paragraph, is 125 meters long and 50 meters wide, and is about 75 feet high. It is wooded and has steep, rocky shores. A number of rocks awash extend a considerable distance off its S.E. corner at low water. This island has been referred to in the hydrographic report and triangulation records, as Near Island.

The east point at the north entrance to Prince of Wales Pass is about 50 feet high, increasing in elevation back from the point to the round-topped wooded hills which extend along the north coast of Evans Island. A grass-topped rock 20 feet high, lies 50 meters off the point. The shoreline from here to the eastward is broken

— and rocky. Several bays of small extent indent the coast. They are of little value, and their area is only approximately given. On the N.E. point of Evans Island the sketched shoreline as shown on this sheet should be adjusted to connect with the topographic survey of Latouche Passage.

The Sister Islands, situated in the centre of Knight Island Passage, are 2 miles north of the north end of Fleming Island, and 3 miles S.E. of the S.E. point of Chenega Island. They are seven in number, extending in a north and south direction for a distance of one mile. The largest of these is the South Sister. It is 120 meters wide and 280 meters long, and approximately 80 feet high. Its shores are high and rocky. 230 meters off the south end, there is a rock awash at half tide. The middle group of four sisters are separated from the South Sister by a passage 280 meters wide. These four islets are circular in shape, and cover an area 400 meters long and 200 meters wide. They have rocky shores, and are separated from each other by narrow strips of water. They are about 20 feet high. The North Sister and the one just south of it are separated from the middle group by a strip of water 400 meters wide. Each of these two are about 100 meters in length, with rocky sides, and are also about 20 feet in height. The hydrographic station "Sister" is on a ledge 10 meters in diameter, and 12 feet high, which lies 75 meters N.N.W. of the North Sister. The Sisters are covered with a thick growth of spruce trees, and are easily distinguished, being separated so far from outlying islands and headlands. The plane table was run along the shore of these islands, and their position accurately determined.

— The shoreline west of the S.E. point of Knight Island, has a

— number of long white sand beaches, broken here and there by projecting rocks and ledges. The west side of the first bay, 2 miles west of "Helen" triangulation station, has a long sand-spit extending parallel with the shore near the S.E. point. From this sand-spit on around the head of the bay to the S.W. point, the shoreline is broken with occasional short beaches interspersed with broken ledges. The shoreline extends in nearly an east and west direction from this point to the entrance of Mummy Bay. It is indented with shallow bights with projecting rocky points, and low shoreline at their head. These points range in height from 5 to 20 feet. From the S.E. point of Knight Island to the entrance to Mummy Bay, the land has a gentle slope for a distance of 1/2 mile, when the rise of the mountainsides is more abrupt.

The S.E. point at the entrance to Mummy Bay has a rocky, precipitous face, about 30 feet high. The top edge is lined with small spruce trees and bushes. Between this point and the first prominent point after rounding into Mummy Bay, there is a shallow bight with a low rocky shoreline. This point, around which is the entrance to Thumb Bay, has the same rocky shoreline. The ground back of it reaches an elevation of about 200 feet. The bight just east of the point has a broken, rock-strewn beach, sloping gradually back from the water's edge to a height of about 200 feet. Here the summit is covered with scattering trees and grass, and drops gradually down the other side to the shallow bight inside of the S.E. point at the entrance to Mummy Bay. On ^{the N side of} this ridge there are a number of log houses, and a mining camp, where some development work is being done. From this camp a wharf is projected, to extend into Thumb Bay. The

— shoreline extending on around the head of Thumb Bay is rocky and abrupt. The point lying across from the mining camp is low and rocky and is covered with trees and bushes growing to the water's edge. Low bluffs extend from here around into the next bay where the small island is shown at the entrance. From the heads of these two bays the mountains rise abruptly. From the summit of the divide, at the N.E. corner of the second bay, the sides fall precipitously to the shoreline of Hogan's Bay, which enters from the east side of Knight Island. The small island mentioned in the second bay is low and covered with small spruce trees and bushes. At the extreme north end of Mummy Bay, the shoreline is low and broken with rocky ledges. The ground rises gradually for $1/4$ of a mile back to the foot of the mountains, which are very high and precipitous. Just west from the extreme north end of the bay, there is a headland about 50 feet high, with a log house near the edge of the bluff. This house was one of the points determined. There are few trees on this headland, and the house shows plainly from the entrance to the bay. Around to the S.W. for a distance of 1 mile, the shoreline is low and broken. Then the rounding headland as shown on the sheet on the west side of the bay, is high and precipitous. The whole shoreline on the west side, which trends approximately north and south, is bluff. The S.W. point at the entrance is nearly of the same character and appearance as the S.E. point, except that the ledges are not so abrupt. The land back from the point for $1/4$ of a mile has a gradual slope to the foot of the mountain. Trending on to the westward, the coastline is cut up with small bays and projecting headland points. The base of the mountains, extend on a line along the heads of these bays. The

11 Top. Rpt.

— points are fairly abrupt, with sloping ground and rolling hills back of them.

The S.E. point at the south end of the channel running north into Drier Bay is rocky. The hill back of it is approximately 500 feet high. The shoreline is very irregular, and several small islands lie close to its west side. Continuing around into the bay just south of station "Snag", the shoreline is precipitous and rocky. At the head of the bay, the divide separating it from Copper Bay, is approximately 700 meters wide, and 200 feet high. The mountains all around the shoreline rise abruptly from the water's edge. Above the N.E. corner of Drier Bay, at an elevation of about 800 feet, there is a small lake of fresh water. It is locally known as Crater Lake, but the basin in which it rests has no indication of volcanic origin. The mountains rise abruptly from its east side.

The headland on which the station "Snag" is located is a little over 1200 feet in height. There is a peak similar to the one on which "Snag" is located, about 1 mile north of it. The sides of the headland are very steep. The ascent was made from the N.W. point, where an easier slope reaches to the summit. The shoreline throughout is rocky and precipitous. A few detached boulders lie off the S.W. point. The island which lies off the S.W. side of Knight Island locally known as Long Island, is 3-1/2 miles long and approximately 1 mile in width, extending in a north and south direction. The centre of the island has an elevation of about 1000 feet, with a general rolling surface, and timbered. The east side is more precipitous, and at the north and south ends the hills are lower with a gradual slope to the water's edge. From Latouche Passage and Moh-

— tague Straits, the south end of this island has the appearance of a low and heavily wooded point extending from the south end of Knight Island. The south end is of the same character as the south end of Knight Island. The shore has rocky ledges, and a gradual slope back for 1/2 mile to the hills. 440 meters off the south point there is a ledge awash at extreme low water. The plane table was set up on this ledge while running in the shoreline. The east side of the Id. is indented with small bays and rocky headlands. Two small islands lie 500 meters off the west side, and from these extending out into Knight Island Passage, is a large area strewn with ledges and sunken rocks, terminating in a point 700 meters from the general trend of the coastline of the two small islands. The outermost ledge was used as a plane table station. It is flat on top, and is barely awash at high tide. The two small islands are about 50 feet high, and wooded. The north end of Long Island is indented with shallow bights, and has a broken shoreline. The bushes and small trees grow close to the water's edge. This part of the shoreline is sketched on the plane table sheet of Drier Bay.

The large bay with the narrow opening lying N.E. of the headland on which station "Snag" is located, has steep rocky shores. The highest mountain on the south end of Knight Island, 3186 feet, rises directly from the east side. The point extending out from the north side of the bay terminates in a rocky islet, covered with trees and bushes. The land on the east side has scattering trees and bushes scattered to an elevation of 1000 feet. The shoreline of the narrow entrance is rocky and shelving. Two small islands lie off the entrance. They are low and heavily wooded. The shores of these islands

— have a number of ledges extending off their sides, which practically close the entrance to this bay. This bay is not generally known, but was referred to by some prospectors having a claim near its head, as Copper Bay.

● The shores of the basin north of the entrance to this bay are shelving and rocky, bushes and trees extending to the waterline. (For description of shoreline from this point to Johnson's Bay, see Report of Drier Bay, Top. Sheet.)

The appearance of the shoreline in Johnson's Bay is similar to that in Drier and Mummy Bays. The shores are precipitous and covered with grass and trees to the water's edge. The N.E. corner is very bluff, and the point extending from the east side is high and heavily wooded. The S.E. side is lower, sloping to the hills which separate it from Drier Bay. The small island at the entrance is low and covered with trees, with a number of rocky ledges extending out from all sides.

The small islands which lie directly off the main shoreline, between the entrance to Johnson's Bay and Lower Herring Bay, and to the eastward of station "Reef", are about 50 feet high and heavily wooded. As these islands are inside the foul area extending along the west coast of Knight Island, they have ledges and sunken rocks surrounding them in all directions.

● The shores and points at the entrance to Lower Herring Bay are rocky and shelving, with outlying ledges. The land slopes back gradually for 1/4 of a mile from the points, then the mountainsides rise abruptly. The small island in the entrance is low and rocky.
— The coastline from the entrance of Lower Herring Bay to Herring Pt.

— is more or less uniform , having a north and south trend, with rocky shores and small rounding headlands. The point midway of this stretch and 1000 meters west of station "Shoulder", has a ledge awash at low water about 200 meters out. This point is very prominent from the channel, and is often mistaken for Herring Pt. when viewed from the southward. It has a rocky face which slopes gradually back to an elevation of about 200 feet, and is heavily wooded. Owing to its prominence, I would suggest that this point be given some name.

In general the land back from the shoreline between Drier Bay and Herring Pt. has a rolling appearance, covered with scattering trees, with large patches of moss and grass. 1-1/2 miles south of the point described in the above paragraph, the rocky, precipitous face of a high, barren, mountain, reaches nearly to the shoreline. It is the only mountain along the west coast of Knight Island that stands out noticeably, close to the shoreline. (For description of Herring Pt. and Herring Bay shoreline, see Report of Herring Bay Top. Sheet.)

Passage Pt. has the same bluff shoreline with high ground sloping back from the edge of the cliffs. It is a double point, and the cliffs have an elevation of about 40 feet. Rounding it into Lower Pass, the shoreline is rocky and broken, the bights containing stretches of barren beaches, and bluff rocky points. From the sides the hills rise abruptly, and are covered with trees and bushes. The island in the Lower Passage is about 1 mile in diameter. Its north half has high precipitous mountains, and the south half is rolling. The shores of the small bay in this island are broken and rocky. At the head of the narrow bay which indents the shoreline on the south

side at the turn of Lower Passage, there is a mining camp with several buildings near the beach. The north side of the pass has the broken coastline, the ground gently sloping to the centre of the big island which separates the Upper from the Lower Passage. This island is about 3-1/2 miles long, and 1 mile wide, extending in a N.W. and S.E. direction. It is sparsely wooded, and its shores are rocky, with easy slopes back from the water's edge, except near its N.W. extremity, where the bluffs are precipitous, and in places reach an elevation of 100 feet.

The small island lying off the N.W. point of this island is 800 meters long and 300 meters wide. The north end has a round-topped hill 150 feet high. The south end is low and sandy. It is covered with spruce trees.

The end of Knight Island north of the Upper Pass, is high and sparsely wooded. The shores are rugged and bluff. The shoreline of the small bay at the N.W. point is of the same character.

The west coast of Knight Island from Herring Pt. to the south end, appears to have had a strip of its land 1-1/2 miles wide, detached and slid off into the passage at some pre-historic date, as the present shoreline is one series of islands and small bays, the points all having the same trend to the westward. The island itself is very rugged, consisting of countless mountain peaks, ranging in elevation from 1000 to 3000 feet, and over. It is doubtful if, on the whole island, 1/2 mile square of level ground could be found. Knight Island, as is the general country contiguous to the shoreline shown on this sheet, is covered with spruce, cedar, and pine trees, with an intermingling of alder and deciduous growths, extending from

the shoreline up the mountainsides to an elevation of about 1000 feet where the trees become scattering, and grass and moss extend on up to the summits. The entire island is at present prospected for copper ore. There has been much money expended in development work. Lumber and machinery have been imported, but up to the close of the season, there had been no shipments of ore, other than small sample lots.

Although the shoreline shown on this sheet is not in great detail, the prominent points and islands which are important aids to navigation, were definitely located, and I am confident that it will meet the needs of all persons using it for navigating purposes, for some time to come.

Respectfully submitted,

R. B. Benson

Asst. C. & G. Survey.

Comdg. U.S.C. & G.S. Str. TAKU.