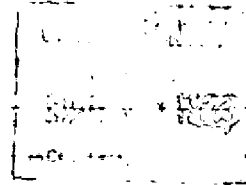


4004



4004

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
State: <u>Alaska</u>	
11-5613	
DESCRIPTIVE REPORT.	
Topo	Sheet No. <u>C 4004</u>
LOCALITY:	
<u>Icy Bay</u>	
<u>North shore</u>	
1922	
CHIEF OF PARTY:	
<u>H. B. Campbell</u>	

D E S C R I P T I V E R E P O R T
T O P O G R A P H I C S H E E T " C "
1 9 2 2

I C Y B A Y - A L A S K A

Launch "WILDCAT"

M. Leff, Aid, Topographer.

By H. B. Campbell, H. and G. E., in charge.

REPORT ON TOPOGRAPHIC SHEET "C".

Bear - Latitude $59^{\circ} 59' 44''.56$ Longitude $141^{\circ} 27' 10''.86$
Magnetic variation, mean of 3 values this sheet - $30^{\circ} 40' E$

This sheet covers the Northern part of Icy Bay, including the entire face of the glacier discharging into the Bay, and the beach on each side to the South to connect onto the shore line shown on topographic sheets "A" and "B" at Δ Black and Δ Goat respectively. The scale is 1:10000. At the time this sheet was done the position had been determined and the azimuth as determined from the three point position from Mt. St. Elias was used to compute the position. As this azimuth was found in error when observations on Polaris were made, and since a smooth computation of the three point position differed from the original computation, the pencil projection on this sheet will have to be changed.

The Northeast arm of Icy Bay, the shore line of which is shown on this sheet is of comparatively no importance at the present time. There are oil seepages reported just East of it but even if a development were to be made of these, the Northeast arm is nearly always filled with icebergs which are found in such size and profusion as to render navigation here unsafe. If this part of the glacier eventually ceases to discharge ice, a possibility which present conditions indicate, a very close survey would be required before this part of the Bay could be used by vessels. The bars, shoal water and nature of the moraine indicate that this would be necessary.

From Δ Black to the glacier the trend of the shore line is to the East and Northeast. The beach, of sand and gravel, is the most irregular found in this locality and the moraine lying behind it is higher and more irregular and rugged than any other seen. The high water line lies on a usually narrow beach which extends from the base of the usually steep mounds of moraine to the water. The slope of this beach is variable but landings can be made on it anywhere that the ice permits and it is such as to make the distance between high and low water lines usually not less than twenty and probably never less than ten meters. Behind this beach the slopes of the moraine mounds vary greatly. Along the Southwest part of this shore the slopes are more gentle than nearer the glacier where they are undoubtedly as great as the maximum angle of repose of this coarse gravel intermingled in many places with boulders. There is no vegetation on this part of the moraine. The elevations of the mounds lying behind this beach are generally a little over one hundred feet. The appearance of the mounds is so confused that as landmarks they are valueless and it is suggested that the area be described by a note on the chart as "Rugged barren mounds of gravel moraine, general elevation 100 to 140 feet."

A few small streams empty into the Northeast arm from ponds which lie among the heaps of moraine. The water in these streams is satisfactory for drinking purposes but the locality is rather inaccessible to even a large launch and the water must be dipped up from the streams.

The line of demarkation between the moraine and the ice is fairly clear at the beach. The moraine stops and the ice begins in a sloping wall of very dirty ice, up which one can climb at at least one place. At the foot of the extreme Eastern edge of ice fronting on the Bay is a boulder beach. The exact direction of the face of the glacier to the Eastward is uncertain. It is very probable that it extends under the moraine for some distance. Farther to the East are trees which probably grow in moraine on the ice. It is well recognized that vegetated moraine is not uncommon on the Malaspina as well as on some other glaciers. The top of the glacier facing on the Northeast arm, that is the part East of Δ Bar, is covered in many places with moraine. This varies from sand to boulders and pieces of rock.

A triangulation signal was built on the Eastern end of the glacier but the first attempt to locate it failed and it was not considered worth the time it would have taken to determine its position at various times during the season. The party which built the signal brought back with them pieces of rock in which were imbedded large crystals of pyrites. One of the men reported seeing a piece of coal on the beach in this Northeast arm. The face of the glacier was determined by tangents and by cuts with alidade and sextant.

The height of its almost always sheer face varies from 100 to 200 feet. It is highest near its Western edge. From its face the ice rises quite sharply for some distance. Changes in the position of the face of the glacier of as much as several hundred meters may be expected ^{at various places} in a few months time. A close approach to the face of the ice is dangerous in most places because of the swells caused by the falling ice. For further information on ice conditions see my hydrographic report.

The bar in front of the glacier, located due North of Δ Black and on which Δ Bar is located, is of sand and gravel. Its elevation is but a very few feet, approximately three feet above high water. The top is flat and barren. The low water line is as shown on the sheet and the slope of the sides of the bar uniform between the high and low water lines. Behind the bar in a Northeast direction the face of the glacier for over a half mile is covered by piles of moraine. Directly behind this the top of the ice is black with moraine. This black deposit and discolored ice extends as far back as can be seen on the glacier. Several of the prints attached to my report show this condition. The appearance of the glacier face at this point inclines one to think that it is melting at about the same rate or a little bit faster than it is advancing and that the moraine is brought down from the mountains to be deposited at this point where the position of the face is ^{apparently} nearly constant. Large ice-bergs commonly strand near this bar. The bar is not as a rule easily picked up from the water at any distance. Its low elevation and a background of the same color as well as the way it is often partly obscured by ice-bergs, often prevent its being identified at a distance of a mile.

To the West of the bar the ice continues for a short distance to appear dirty but in a very little way it becomes clear white, and con-

tinues practically so to the Western shore. About one and three quarters miles from the West shore is formed a very prominent line of medial moraine. The dark part of the ice is about 100 meters wide and from the dark it changes quite rapidly to the clear ice on either side. It is believed that this medial moraine is the edge of the Malaspina Glacier at which it is joined by its Western lobe, which is known as the Guyot Glacier. The moraine forms a very prominent landmark. It can be seen from ten to fifteen miles at sea, in fact as far as this part of the glacier is visible. Its direction is such that small changes in the position of the face of the glacier will not materially affect the value of bearings on it from offshore. Its direction is shown on the topographic sheet for as far back as it could be readily seen. On account of the slope of the ice this is not very far. From offshore it was noted, as well as from the top of one of the Robinson Mountains, that a little farther back from the face of the glacier this moraine line curves to the North and it apparently comes from one of the ridges North of those that might be considered to be indicated as its source by its direction at the glacier face.

West of this medial moraine the ice is apparently more active than elsewhere. Even its appearance indicates this. It is clearer, its colors are more brilliant and it appears to fall more frequently here than elsewhere. This is also true of the section just East of the medial moraine, but it is believed not to the same extent as to the West. Near the Western shore the form of the glacier face and the distance it projects into the Bay varies a noticeable amount; probably several hundred meters during the Summer.

At the Western edge of the glacier Independence Creek enters the Bay. This is a fair sized stream of glacial water, which there apparently would be no trouble in fording if it were in the open. Its source lies among the Robinson Mountains. Just above its mouth it emerges from beneath the glacier. The stream passes under the ice for a considerable distance running South and West of the point of ridge in the glacier which is computed as Δ Tongue and running North and East of the ridge of the Robinson Mountains which lies directly behind Δ Bear. A close examination of print No. 17 shows this valley between the two ridges. Farther back than this the creek flows from a glacier and through a valley which was visited by some of our men and which was described by them as being unusually beautiful.

Various men at Yakutat agree that a few years ago this creek was not covered at all by the ice as it is at present. As only a small change would be required in the glacier face to bring this condition about I believe it to be true.

The Western shore of Icy Bay between the edge of the glacier and Δ Goat is practically all of the same character. At the mouth of Independence Creek is an outcrop of rock. West of this the beach is entirely of sand or gravel. Between the high water line and the foot of the Robinson Mountains lies a narrow flat, in width varying from 50 to

200 meters. The soil is of sand and gravel with some boulders. It is partly a moraine. West of Δ Bear this flat is generally dotted and in some places nearly covered with alders. Between Δ Bear and the glacier the beach is bare.

From about 100 meters East of Δ Bear to nearly 1000 meters South of the station the beach is very narrow and directly behind it lies a low bluff of sand usually from ten to twenty feet high. This bluff is quite steep and it is cut in many places by streams which are too small to be of much use as sources of fresh water supply. Behind the bluff to the foot of the mountains the ground is in general sloping, and there are many mounds of gravel and clumps of alders which make passage along the beach advisable. From the Western edge of this bluff West to Δ Goat the flat varies but little. The alders are in some places very thick. The streams are small and do not amount to much but a certain amount of fresh water could be obtained from them.

Behind the flat, to the North is shown a line of hachuring, which indicates the location of the base of this ridge of the Robinson Mountains. The end of this ridge is West of Tongue on the West side of Independence Creek. From its end the peaks or hills increase in height to the Westward. The ascent from the beach is everywhere very arduous and difficult. A place must be carefully selected for the climb and great care used because of the nature of the surface. This is usually shale, which is loose and not reliable. There are some outcrops of sandstone and on the beach at Independence Creek is found an outcrop of conglomerate. There are many sheer bluffs on the faces of these hills. About 500 feet up is found a scattered line of alders with here and there a fir or spruce. The first ridge is rather low and behind it is another and so on. Those at Yakutat who have gone back behind this beach ridge for goat, report an unusually rugged country. Scattered timber grows on these hills but there is not enough of it in the immediate locality to be of value. The trees and bushes on these hills decrease to the Eastward, and from a point about North of the mouth of Independence Creek the ridge appears bare from the Bay.

Gold may be found at many places along the beach in the Northwestern part of Icy Bay. In the Independence Creek valley in the Robinson Mountains two claims were staked a few years ago by two prospectors but they were lost in making the return trip to Yakutat. Along the beach both black and ruby sand are to be found in places and there is a fine gold dust. Some of our men reported that a claim was staked between Δ Goat and Δ Bear. I enquired at Yakutat but could not find that any one had ever worked this locality for gold except to prospect it. Gold is found on the beach between Yakataga and Umbrella Bar but the country is so broken up that no one has yet found anything of value in the mountains.

The glacier is impassable near its face and for many miles back. I have reliable information that the Guyot lobe has been crossed twice behind the Robinson Mts. These crossings were made so far back that the ice had not become deeply crevassed. It may be considered as impossible to cross from one side of Icy Bay to the other by climbing over the glacier.

○ Arm on this sheet was observed on from two triangulation stations and computed as an intersection station. No check was obtainable. This location was found in the field to be incorrect. The signal at ○ Arm was then located with the plane table by cuts from △ Bar and △ Black. Arm is a topographic station.

Feb. 26, 1923.

Respectfully submitted,

H. B. Campbell

H. B. Campbell,

H. and C. Engineer.

STATISTICS FOR SHEET "C"

Shore line ----- 19 stat. mi.

Shore line of ponds, sloughs, etc. --- 0

Area ----- 24 sq. mi.

S.E. Alaska Datum

TRIANGULATION STATIONS on Topographic Sheet "C"

	Lat.	Long.
Bar	59-57-01.58 (48.9)	141-21-25.21 (391.4)
Bear	59-59-44.56 (1379.0)	141-27-10.86 (168.4)
Black	59-55-46.85 (1449.9)	141-21-02.53 (39.3)
Goat	59-59-13.59 (420.6)	141-30-54.43 (844.0)
Isle	59-57-37.21 (1153.4)	141-22-56.85 (882.3)

PLANE TABLE LOCATION on Topographic Sheet "C"

	Lat.	Long.
Arm	59-56-(764m)	141-16-(750m)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

C

The finished Topographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. C 4004

~~XXXX~~ . . Territory of Alaska.

General locality . Icy Bay

Locality . North shore

Chief of party . . H. B. Campbell, H. and G. Engineer.

Surveyed by . . . M. Leff, Aid

Date of survey . . Sept. 5th to 14th, 1922.

Scale . 1:10000

Heights in feet above . . high water

Contour interval . 20 . feet.

Inked by D. E. Whelan, Jr.. Lettered by D. E. Whelan, Jr.

Records accompanying sheet (check those forwarded): Photographs, XX

XX Descriptive report, Horizontal XX angle books, Field XX computations;

Data from other sources affecting sheet Photographic report.

1:40000 topographic sheet.

Remarks: