

83
STA
1912



Acc. No

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Top Sheet No. **3303**
3304

LOCALITY:

Turnagain Arm

1912

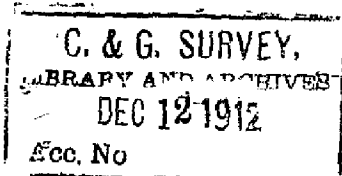
CHIEF OF PARTY:

F. H. Hardy

11-4846

3304

3303



TOPOGRAPHIC SHEET **3304**

Projection made by I.M. Dailey, Asst. July 1912

Projection checked by M. L. Button, Aid. July 1912

Cook Inlet Alaska

Turuagain Arm East end

Work done by I.M. Dailey, Asst.

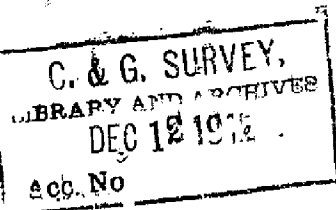
August & September

~~1912~~

F. H. Hardy Assistant

Chief of Party

#####



TOPOGRAPHIC SHEET **3303**

Projection made by I.M. Dailey, Asst. June 1912

Projection checked by M. L. Button, Aid. June 1912

Cook Inlet Alaska

^W
Turnagain Arm West end

Work done by I.M. Dailey, Asst.

July & August

1912

F. H. Hardy Assistant

Chief of Party

#####

POST-OFFICE A

TELEGRAPH AD

EXPRESS OFFIC



Department of Commerce and Labor

COAST AND GEODETIC SURVEY

DEC 17 1912

Co. No



REPORT

TO ACCOMPANY TOPOGRAPHICAL SHEETS

OF

TURNAGAIN ARM.

Limits:-

These sheets include the shore line of Turnagain Arm from near Lat. $60^{\circ} 55' N.$, Long. $150^{\circ} 07' W.$ east of Chickaloon River, around the head of the Arm to Δ Salt.

General character of the country:-

Except for the alluvial flats south of Burnt Island and near Δ Salt & the glacial flats at the head of the Arm the country is very broken. The bare topped slaty mountains with their patches of snow present a forbidding appearance. This appearance is not deceptive. The strong tides and winds, impassable cliffs, dangerous quicksands of Chickaloon Flats and near the head of the Arm, coupled with what all agree was unusually bad weather made this *the* most difficult P. T. Survey I ever attempted.

The tree line seldom reaches 1200 ft., alders grow much higher. The lower slopes except where too steep are timbered. Spruce, hemlock and birch are the principal trees. As a rule the trees are small. Some cotton wood is found on the low lands and the vicinity of Δ Dark. Near the old mining camps much of the country has been burnt over. Willows thrive in the marches, wild rye and peas grow on the flats. Wild red currants are plentiful but saw no salmon berries.

General character of coast:-

The shore line of Chickaloon Flats is very indefinite, the grass gradually giving place to the sand, attempted to show the grass line but the H. H. tides extend far beyond the line shown. There are large patches where the grass and the upper soil has been removed by outgoing ice. Tide runs containing several feet of water at H. T. and deep mud at low water are numerous. Waded Chickaloon River in hip boots at low tide, but prospectors ascend to the falls or rapids in dories with the tide in about two hours. By common saying this falls are twelve miles up the river. Also waded Big Indian Creek at the shore line but half a mile up found several feet of water at low tide.

The shore line of the flats near Δ Salt are more definite and do not show signs of recent ice. The prevailing winds are out of the Arm but there is twice as much drift wood as on the Chickaloon Flats, much of it sawed timber, planks, slaps and railroad ties.

Nearly all the rest of the shore line is rocky cliffs sometimes 100 ft. high. As a general rule the cliffs decrease in height above the beach as one ascends the Arm. This is due in part at least to the greater elevation of the alluvial deposits near the head of the Arm. This difference is shown by the tides, only the summits of the spring tidal waves reach Δ Alder.

Near Hope and the vicinity of Bird and Indian Creek are gravel banks from a few feet to fifty feet high.

Near the head of the Arm the shore line has been pushed far out from the bluffs and the filling in is still in progress. It looks as though in a very short time, as geological time is considered, the whole upper part of the Arm will be a flat valley with one or more rivers winding through it.

Harbors:-

There are no harbors and Burnt Island is the best anchorage of any size. It is quiter for launches behind Gull Rock and by moving in with

high water and out with low, a launch can keep out of the currents which are strong at Burnt Island. Six-mile Creek can be entered at half tide and the wharf approached with high water.

Dangers:-

There are rocks scattered off the cliffs but none far from shore. Those off Bird and Snipers Points are to be guarded against when trying to dodge tide rips as they are at the edge of the channel.

A large share of Turnagain Arm is sand or mud bars and the rapidity with which the tide falls make it easy to get caught. Over the area shown by the western sheet these banks are little more than indicated. From the low shore it is often impossible to see the outer edge of the banks. There are no distinct points to be located by cuts and the bore makes them unsafe at low tide. When the "Cannon" breeze as it is locally known meets the spring tides the bore reaches 6 feet ⁱⁿ high and can be heard 20 to 30 minutes before it is abreast. Estimated speed to be about 6 miles per hour. The water runs out till the bore comes. The bore is highest over shoaling ground, subsiding over deep channels even when comparatively narrow. It is only the first few ^{feet} of rise that is dangerously sudden. The lower parts of the Arm are not safe for small boats when the wind is from the east. In a few minutes a gentle breeze may freshen to a gale and with a flooding tide a choppy sea rises almost at once. ^{west} ~~East~~erly weather is usually quiet and sunny.

The configuration of the sand banks causes some interesting tidal phenomena. Near Δ Dark the water is deeper near shore. When the tide is half way out and the middle ground bars bare by several feet the current changes with a rippling sound, and until low water flows rapidly towards the east. Near the Sunrise tidal station and between Windy Point and the small island west of it, there are whirlpools at certain stages of the flood tide. The one near

Windy Point is about 100 meters in diameter and the center is notably depressed. Driftwood sucked under by the Sunrise whirl comes to the surface about a 100 meters below.

Between the island on which ~~the~~ Δ Gravel is located and the main land there is a narrow channel bare at low water. I was there when the bore came in, the water came leaping over the stones from the west toward the east. A few minutes later the current changed and run like a mill race from the east toward the west. An hour and twenty minutes after the bore it was again strongly towards the east.

Streams:-

There are no navigable streams. Twentymilo and Glacier rivers are the largest, they break up into many shallow streams flowing between the bars of the upper Arm. Resurrection Creek has 2 mouths. This season the western one discharged more water than the eastern but the people in Hope say it was the other way last year. Do not know how far up the stream divides, sketched it in from what I could find out in Hope. There are hundreds of small streams tumbling down the steep slopes. Some are fed by snow but most of them depend on the nearly constant rain.

Roads and trails:-

There is a wagon trail from Sunrise to Milo-34 on the railroad from Seward. The trail between Hope and Sunrise is crooked but fair for horses and man afoot. It is called a wagon road and when the soft places are frozen could be used for light wagons, the railroad is in use as far as Korn Creek, a gasoline bus runs during the summer and the roadbed is used for winter dog sleding. The trail to Knik is near the beach between Korn Creek and Indian Creek, ascending the latter to the divide.

Methods and adjustments:-

Except on Chickaloon Flats the triangulation control was close. The

signal near Chickaloon River was determined by cut from \triangle Burnt and the traverse. When at the signal drew a line to \triangle Grand View, not on the sheet. When this line and the cut were laid off on a larger projection the signal was moved about 50 meters.

The saw-tooth rods with figures, sent with the alidades are not satisfactory except for near readings. Painted rods with dots and black wedges and red wedges which can be read twice as far. The projections were on sheets that had been at least a year on the Yukon, and hold their own much better than sheets new to the climate. The channels shown on the upper sheet are much more accurately sketched than the bars of the wider areas of the lower sheet. Owing to the rain and the lateness of the season the head of the Arm was done by sextant and plotted by protractors (see pencil marks showing limits of sextant work). For the same reasons used a 500 foot contour interval on the upper sheet. I failed to locate some of the mountains near Glacier Creek on account of the clouds. Looking up glacier Creek the first high summits are off the sheet. Near the head of the Arm are flats shown as marsh which except near the streams are fair walking. It is sand flooded at H. H. water and thinly covered with tall grass, from a distance this yellow grass resembles wheat fields. Farther inland is true marsh with thick grass which gives place to willows and alders.

J. M. Daily

Respectfully submitted

Assistant, C. & G. Survey.

F. H. Hardy

Assistant, C. & G. Survey,

Chief of Party.



Topographic Sheet East End

Thomson Arm

Done by Sunday east

1884

C. of P. C. 1884.



Topographic Sheet
Imagined from West End
One by Sunday and
J. H. Standby
C. P. C. C. S.

~~///~~

POST-OFFICE ADDRESS: 200 Burke Bldg. Seattle, Wash.

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

ack
JAN 2 - 1913

Insp'r of Hyd'y & Top'y. &

Superintendent

~~REPORT 1913~~

Department of Commerce and Labor

COAST AND GEODETIC SURVEY



Seattle, Wash.

Dec. 28, 1912

To the Superintendent,

Coast & Geodetic Survey,

Washington, D. C.

Sir:-

& Statistics of Field Work

I have the honor to inclose herewith Seasons Report, also

Class
Plain Table positions for topographic sheets of Turnigan Arm .

which have been received by you,

Very Respectfully

J. S. Sandy
Ass't. C. & G. Survey

& Report & statistics filed in office of Dept. W. B. G.

Plane table positions.

Object, and dis- cription.	Latitude	D. M. meters.	Longi- tude.	D. P. meters.	Remarks.
Chick.....	60 - 54	108	150 - 01	819	Net marked
Flat	60 - 55	1183	149 - 56	216	" "
Need	60 - 57	477	149 - 52	683	Natural white marking on rocks, also white washed
White.....	60 - 57	864	149 - 52	599	White wash on rocks.
Wash.....	60 - 57	1661	149 - 51	441	" " " "
Her.....	60 - 57	535	149 - 42	837	" " " Islet.
Sun.....	60 - 56	143	149 - 36	872	" " " N. Pt. of Islet.
.....	60 - 55	921	149 - 32	208	" " " Rock.
Waterfall....	60 - 58	1680	149 - 34	752	
Rough.....	60 - 59	1481	149 - 38	380	White wash on Rock.
Dailey.....	61 - 00	318	149 - 41	680	" " " Islet.
Hugh.....	61 - 00	1576	149 - 44	162	Waterfall of Mo Hugh Cr.
Bluff.....	61 - 01	1802	149 - 46	882	See direction of Δ Stations.

#####

Plane table positions.

Object, and dis- cription.	Latitude.	D. M.	Longi- tude.	D. P.	Remarks.
		meters.		meters.	
Walk.....	80 - 58	1492	149 - 22	600	
Dead Tree....	80 - 51	1086	149 - 01	510	
Tree on Point..	80 - 50	1476	149 - 08	605	

#####