

## REPORT OF THE BOARD OF ROAD COMMISSIONERS FOR ALASKA.

### REPORT OF THE PRESIDENT.

The last report submitted covered the work of the board up to October 18, 1907, except disbursements, which were brought up to October 1, 1907.

The report is composed of three parts, as heretofore: Report of the president, giving a summary of what has been accomplished, with such information as seems proper in regard to population, benefits, and general progress of the work; report of the engineer officer, embracing a detailed statement of the work in the different sections, with cost of same; tabulated statement of expenditures by the secretary and disbursing officer to October 1, 1908.

An important change was made in the personnel of the board during the middle of the working season by the relief of Capt. George B. Pillsbury, Corps of Engineers, engineer officer of the board, who was detailed for duty at West Point, and the assignment to the board in his stead of Capt. F. A. Pope, same corps. The engineer officer, under the law and under the distribution of responsibilities by the board to its respective members; has direct charge of the work in the field. This work, widely distributed, is of necessity carried on largely by hired labor where assistants have to be selected in advance and assigned for the season, and is of such varied character as to require some preliminary study of conditions in the different localities in order to obtain the best results. Therefore, so far as the work of the board is concerned, it is unfortunate to have such a change take place in the middle instead of at the close of the working season.

Captain Pillsbury had been with the board since its organization and had become thoroughly familiar with all the conditions in the Territory. To this knowledge and to capabilities of a high order he added an intense interest in every detail of the work and an indefatigable energy in the field during all seasons and under many difficulties and hardships.

At the close of last season's operations the usual winter work was laid out, including the staking of exposed trails in the Seward Peninsula and in other parts of the Territory, the purchase and shipment of supplies over the Valdez-Fairbanks route for use of working parties during the season of 1908, with some maintenance work for the benefit of the winter mail service.

A further reduction of time in the transportation of the mails was shown during the winter, due to improvement of this main overland route. The quickest trip from Valdez to Fairbanks was six

days and eight hours, made in the month of April. The average time from Valdez to Fairbanks for the winter was eight days sixteen hours and twenty-five minutes, against ten days twelve hours and ten minutes for the previous winter. The average time south (Fairbanks to Valdez) was nine days and forty-two minutes, against ten days twelve hours and thirteen minutes for the previous winter. The first mail arrived over the winter trail to Nome on December 10, six days later than in the previous year, but in a quicker journey by seven days—forty-two days from Seattle, as against forty-nine days the previous year. The best time of the winter was thirty-eight days, the mail arriving March 25, as against thirty-nine days the previous year. The average time for the winter was one day less than the previous year. One man, John Heston (with his own dog team), made the journey from Seattle to Nome in thirty days—by steamer to Valdez, and twenty-three days from there, at an average of little more than 49 miles per day. This, so far as known, was record time for this long journey.

The commission sent a special reconnoissance party during the winter from Seward, the coast terminus of the Alaska Central Railway, via the head of Cook's Inlet, the Yentna, Upper Kuskokwim, and Innoko rivers to Kaltag on the Yukon, connecting at that point with the main overland trail to Nome, for the purpose of examining into the reported developments in the intervening districts and to determine the feasibility of a winter trail by that route, thus shortening the distance to Seward Peninsula. The transportation of the party was in charge of Mr. George E. Pulham, Mr. W. L. Goodwin, superintendent for the commission of the Nome district, accompanying the party as engineer.

The trip, which was through a country but little known after leaving Cook's Inlet, was made without mishap or serious delay, the party leaving Knik, at the head of the inlet, on February 14 and arriving at Kaltag March 19.

The following from Mr. Goodwin's report will, it is thought, be of interest:

The route traversed, briefly described, was as follows:

The Alaska Central Railway was followed to its end at Mile 54, thence via Turnagain Arm, Glacier Creek, Crow Creek Pass, Eagle River across country to Old Knik, across Knik Arm to New Knik, across country to Shusitna Station, up the Shusitna 3 miles, up the Yentna, Skwentna, and Happy rivers, Pass Creek to Rainy Pass, down the Dalzell, Rohn, and Kuskokwim rivers to near the Touzouza, across country to the mouth of the Tacotna at "McGraths," up the Tacotna and across country to the Tacotna Slough, over rolling hills to Gane Creek, down Gane and across country to Ophir Creek (the Innoko district), across country to Dishakaket, and thence across country to the Kaiyuk Slough to the Yukon, and then up the Yukon to Kaltag, and by the Overland Mail trail via Unalaklik to Nome.

Latitude observations were taken, as will be seen on map, and the magnetic variation determined, but these could not always be gotten at or near the 50-mile station owing to stormy or hazy weather. By closely watching the United States Geological Survey reconnoissance map of Mount McKinley region, 1904; Spurr and Post's exploration of 1898, and Lieutenant Herron's exploration in 1899, I was able to estimate and check their distances, topography, and delineation clear through to Farewell Mountain on the Kuskokwim, but will say from there to Kaltag the maps are entirely in error, and it would be impossible to map the country except by more extended surveys than it was possible for me to make on such an expedition.

I will say that Rainy Pass is so easy of ascent and descent and is so near on a direct line of the route that I did not stop to examine any of the other

passes—i. e., Simpson Pass, some some 20 miles southwest, as either not to be considered unless some reaching the Kuskokwim.

The Innoko district is so isolated account of the crookedness of the river is difficult to get supplies in during surely if the new diggings prove a demand for a road or trail from Seward to the Yukon or head of navigation.

*Snow conditions.*—From Seward deep, and soft, depending largely on to 2 feet; from New Knik to Shusitna mouth of Happy 4 to 6 feet; from 8 feet, caused by the snow being blown hard; from Rainy Pass to mouth of 2 feet and usually hard; from 10 feet and soft; from Seward to well are very bad for travel, the snow is very imity to tide water.

*Timber.*—From Old Knik to New Knik size, and medium spruce with some Station it is tamarack, spruce, and birch. River is scattering birch, medium spruce, or willows, solid; from mouth of Happy lock with willows and cottonwood. Dalzell River to Rohn River is solid spruce. Rohn River to Nicholis is solid spruce. The river banks and islands; from Mouth of birch and spruce, and with willow to McGraths is 70 miles unknown, spruce, rack; from McGraths to Kaltag willows.

The board believes this to be a better location through the country, but will not come until after the Alaska Central is extended as far as Knik at the further developments take place in the districts. Both these conditions, I believe, within another year.

This route is the natural one for travel westward, and the distance from Seward shorter than the present route to Kaltag via the Yukon River.

Up to the date of the last year's construction and improved by the Alaska Central, 383.65 miles; of total cost of \$2,200 per mile for wagon road and as low as \$100 per mile for sled road. Attention was made in that report of different kinds of roads and trails, but such explanation here, nor statistics of labor, and other details relative to the cost.

Congress again made a special appropriation for "construction and maintenance of trails in Alaska," supplied the year amounted to \$117,750, and the disbursing officer of the year these funds.

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passes—i. e., Simpson Pass, some 10 miles northeast, and Ptarmigan Valley, some 20 miles southwest, as either of the other routes would be much longer and not to be considered unless some serious obstructions should be found before reaching the Kuskokwim.

The Innoko district is so isolated from direct or quick transportation, on account of the crookedness of the river and sloughs and their great length, that it is difficult to get supplies in during the navigation under present conditions, and surely if the new diggings prove all that is expected of them, there will be a demand for a road or trail from some convenient point, either on the Kuskokwim or the Yukon or head of navigation on the Innoko.

*Snow conditions.*—From Seward to Old Knik, the snow was from 3 to 7 feet deep, and soft, depending largely on altitude; from Old Knik to New Knik, 1½ to 2 feet; from New Knik to Shusitna Station, 2 to 4 feet; from Shusitna to mouth of Happy 4 to 6 feet; from Happy (mouth) to Summit Rainy Pass, 6 to 8 feet, caused by the snow being blown down into the valleys, and it was usually hard; from Rainy Pass to mouth Dalzell River, 8 feet, gradually diminishing to 2 feet and usually hard; from mouth Rohn River to Kaltag, about 2 or 3 feet and soft; from Seward to well up the Skwentna River, the snow conditions are very bad for travel, the snow being wet, heavy, and deep, caused by proximity to tide water.

*Timber.*—From Old Knik to New Knik, the timber is largely birch of large size, and medium spruce with some cottonwood; from New Knik to Shusitna Station it is tamarack, spruce, and hemlock; from Shusitna Station to Happy River is scattering birch, medium-sized spruce and hemlock, and cottonwoods or willows, solid; from mouth of Happy River to timber line is spruce and hemlock with willows and cottonwoods on the river bars; from timber line down Dalzell River to Rohn River is solid spruce of medium size; from the mouth of Rohn River to Nicholis is solid spruce, but with cottonwoods and willows along the river banks and islands; from Nicholis to McGraths is tamarack and patches of birch and spruce, and with willows along the river; from Farewell Mountain to McGraths is 70 miles unknown, but is undoubtedly solid spruce and tamarack; from McGraths to Kaltag is small spruce, scattering tamarack and willows.

The board believes this to be an important line of winter communication through the country, but the best results from its construction will not come until after the Alaska Central Railroad shall have been extended as far as Knik at the head of Cook's Inlet and until some further developments take place in the Kuskokwim and Innoko districts. Both these conditions, however, will, it is thought, be fulfilled within another year.

This route is the natural outlet to the coast for all regions to the westward, and the distance from Knik to Nome is about 400 miles shorter than the present route from Valdez via Fairbanks and the Yukon River.

Up to the date of the last report the total mileage of wagon road constructed and improved by the board was 165.95 miles; of winter sled road, 383.65 miles; of trail, 241.50 miles; with an average cost of \$2,200 per mile for wagon road, \$250 per mile for winter sled road, and as low as \$100 per mile for dog-sled and pack trails. Explanation was made in that report of the character and uses of the different kinds of roads and trails. It is not thought necessary to repeat such explanation here, nor statement of the varying conditions, prices of labor, and other details relating to such work in Alaska.

Congress again made a special appropriation of \$250,000 for the "construction and maintenance of military and post roads, bridges, and trails in Alaska," supplementing the "Alaska fund," which for the year amounted to \$117,750. Attention is invited to the statement of the disbursing officer of the board showing the distribution of these funds.

Upon the opening of the summer season of operations work was taken up in all parts of Alaska, and with favorable weather conditions and an abundant supply of labor in the Territory very satisfactory results have been obtained.

Increased mileage for the year is:	Miles.
Wagon road (new)-----	188.28
Sled road (new)-----	110.00
Trail (new)-----	13.57
Wagon road (converted from sled road)-----	102.75
Making totals of--	
Wagon road-----	451.98
Winter sled road-----	396.90
Trail-----	255.07

The cost of the new wagon road constructed was, in round numbers, \$1,400 per mile; winter sled road, \$297 per mile; trail, \$614 per mile; converted road (sled to wagon), \$98 per mile.

The reduced cost of wagon-road construction, as shown in the report this year, is due partly to natural conditions surrounding the work and partly to the fact that most of the stock, implements, and tools used during the present season were on hand and had already been included in the cost of work previously reported.

The high cost of the trail construction, as shown above, was due to unusually heavy timber and rock work in this construction.

The 102 miles mentioned as converted winter sled road into wagon road, at an expense of only \$98 per mile, covers sections of the main overland winter mail trail which have been made suitable, at this small additional cost, for light wheeled traffic during the ordinary conditions of summer.

The roads of the kind being constructed in Alaska require considerable money for their maintenance, especially in the years immediately following construction; also the total amount for this purpose naturally increases from year to year with increase in mileage.

The cost of maintenance during the past year was, for wagon road previously constructed, \$239 per mile, and for winter sled road \$18 per mile.

The above figures on construction and maintenance embrace surveys, office expense, and all other expenditures by the board.

The report of the engineer officer gives in detail the extensions and improvements on different routes, with unit costs and benefits to the different localities.

Mr. J. L. McPherson, civil engineer, was employed during the summer as a special inspector for sections of work which could not be visited by members of the board, and to study and report upon possible connections with the various lines of railroad under construction or proposed in the Territory, with a view to a more complete system of communication in connection with the said roads. This phase of the subject, embodying the results of his observations and my recommendations in respect to the railroad situation, will be made the subject of a special report.

The fall of snow last winter was less than usual, and, with a dry summer in most parts of the Territory, caused a shortage of water for washing the gravels and a consequent diminution in the output from what was expected. The district suffering most in this respect was the Seward Peninsula. There is no occasion, however, for discouragement.

ment so far as the values in the ground are concerned, nor as to the extent of the areas of pay.

I estimate the output of gold for the season, from the data furnished me, at very nearly \$19,000,000, of which the Fairbanks district furnished about one-half. The total is slightly in excess of the output for last year.

The population of the Territory, which may be classed as permanent, has increased slightly according to my observation during the past year. A more encouraging feature, however, than the mere increase in numbers is the greater number of families, with an improvement of homes, the cultivation of gardens and fields, and other evidences of a fixed habitation.

There should no longer be a doubt in the mind of anyone that the agricultural possibilities in Alaska are considerable, and that many sections of the Territory will never again be without a permanent white population. Prof. C. C. Georgeson, of the Department of Agriculture, and in charge of the experiment stations in the Territory, informs me that he has not failed a single season for several years to ripen oats and barley in the interior (Yukon Valley), and that he is satisfied that, with sufficient fall of snow for protection during the winter, which may ordinarily be expected, a hardy winter wheat will always mature. All matured grain is found to be fully as heavy as the best grain of the States. Grasses grow abundantly, as do all the hardier vegetables.

The experiment station at Kodiak has a number of Galloway cattle, a long haired, hardy breed, which stand the climate well and which will be developed and introduced in other parts of Alaska.

#### VALDEZ-FAIRBANKS ROUTE.

This is the most important line of overland travel and communication in the Territory, connecting the town of Valdez, the most northerly open port in southern Alaska, with Fairbanks, the head of navigation on the Tanana River, except for small light-draft steamboats. It follows the line of the military telegraph, and over it are transported in winter all the mails for the interior, except for Eagle and the Fortymile, as well as for western Alaska and the Seward Peninsula. From Fairbanks the winter route continues via Fort Gibbon and the lower Yukon to St. Michael, Fort Davis, and Nome.

From Valdez to Fairbanks the route, although continuous in the form of wagon road, sled road, or trail, embraces, in the distribution of funds for its construction and for the purposes of supervision of the work, several different sections. The president and engineer officer of the board examined together the entire route between August 23 and September 10, proceeding from Fairbanks to the coast at Valdez. The total distance via the mouth of the Big Delta is 385 miles. This distance is reduced for winter travel, by cut-offs which can not be traversed in summer, to 354 miles.

Fairbanks is situated on the south bank of what is commonly known as the Chena or Fairbanks Slough. This "slough" receives, however, the waters of the Chena River and some smaller streams, and has a current of 4 to 5 miles per hour.

Leaving Fairbanks the route runs south to the Tanana River, a distance of 4 miles, then turns eastward up the "right," or north, bank

of that river and follows its general line more or less closely for 90 miles to the confluence of the Big Delta and Tanana rivers. Here the route crosses the Tanana (by private ferry) above the mouth of the Delta and continues up the "right," or east, bank of that stream in a southerly direction to the summit of the Alaska Range.

Fifty-nine miles from Fairbanks a winter cut-off leaves the summer route, and, crossing the Tanana at Washburn (mouth of the Little Delta), runs in a southeasterly direction across a low, swampy country, impracticable for traffic except when frozen, to a point on the Big Delta about 35 miles from its mouth, where it crosses and rejoins the main summer route. The saving in distance by this cut-off for the winter mail is about 13 miles. Its principal advantages are due to its level character and to the fact that it passes through a section protected from the winter storms.

The other winter cut-offs along the route aggregate about 18 miles, but do not deserve special mention. It has been the effort of the board to have the winter and summer routes coincide as far as possible.

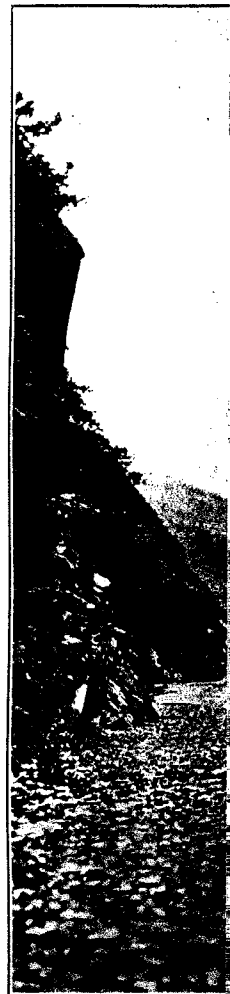
Continuing from Isabelle Pass, summit of the Alaska Range, the route descends to the headwaters of the Gulkana River and runs along the valley and side hills to the eastward of that stream in a general southerly direction to the confluence of the Gulkana and Copper rivers. Here it crosses the Gulkana (by ferry, the horses swimming) near its mouth, and follows the right or west bank of the Copper, gradually diverging from it, crossing the Tazlina, Klutina and Tonsina rivers, and continuing into the valley of the Tiehkell, turns westerly through a broken and rugged country, and gradually ascends to the summit of the Coast Range at Thompson Pass. From here it descends to the valley of the Lowe River and through Keystone Canyon to Valdez. From Gulkana to Valdez much of the old Abercrombie trail is followed.

One hundred and fifty miles of the distance from Fairbanks were covered by buckboard and the remainder on horseback. Work was in progress, and since completed, on the Upper Delta, which would, if it had been finished at the time of our coming through, have permitted the use of the buckboard some 25 or 30 miles farther.

There are also some stretches down the Copper and approaching Valdez, over which a buckboard can be used. The season of the year and the dry weather favored the route in this respect, although there is a considerable mileage in disconnected sections along the route suitable for buckboard or light-wheeled traffic under any ordinary summer conditions. All streams are provided with suitable means of crossing, either by bridge or ferry, except the Tanana and Gulkana rivers and one glacier stream near the head of the Delta.

The board intends to install a ferry on the Tanana early next season and to construct bridges across the glacier stream and Gulkana River.

Road houses are located along the entire route at intervals of 12 to 20 miles which furnish convenient and comfortable stopping places for travelers. The owners of these road houses have, in most instances, made homestead entries and are beginning to cultivate gardens and fields. An abundance of fresh vegetables of excellent quality was found at nearly every stopping place. These places will be-



KEYSTONE

come small centers of settlement and supply from which people will explore and prospect adjacent country.

As stated before, this route is of the highest importance in the development of the Territory, and the time is believed to have arrived when the entire distance should be improved so as to permit ordinary wheeled traffic during the summer season. By this it is not meant a road over which heavy tonnage could be hauled, which would cost a great deal of money and still not be as good as the frozen road of winter, but one over which buckboards and wagons with small outfits could readily pass and over which the mails could be transported to advantage. Many persons traveled the route during the past season both on foot and horseback, and three droves of cattle were taken from Valdez to Fairbanks, arriving in excellent condition. The cost of the improvement of this route, as indicated, will be included in the estimate of funds for the next season, and a favorable consideration of the same is earnestly recommended.

The time is approaching, it is thought, when the local roads in the different sections may be turned over for maintenance and extension to local authorities, leaving only the main trunk lines in the hands of the road commission; but before this could be done some modifications of the law would be necessary. It is thought that perhaps an elective board of road supervisors for each district might be authorized, which could be charged with the enforcement of the local tax law outside of incorporated towns, and disburse, in connection with it, the proportionate share of the general Alaska fund belonging to that locality. There is an increasing difficulty each year presented to the board in the conflicting demands of the various localities in regard to the distribution of this fund, resulting in one or two instances in a concentrated attack by a certain element upon the superintendent in charge of the district. This is to be expected perhaps in the handling of such a work, and the above remark is made merely as a statement of fact and not in the way of complaint, nor as expressing any desire to shift work or responsibility to other shoulders. This will also be made the subject of a separate communication with recommendation as to form of a bill which would, in my opinion, meet the requirements.

Respectfully submitted.

W. P. RICHARDSON,  
*Major, Thirteenth Infantry,*  
*President of the Board.*

OCTOBER 20, 1908.

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REPORT OF THE ENGINEER OFFICER.

Owing to the continued dry weather throughout the interior of Alaska the season of 1908 has been very favorable for road construction. The soil being drier was much easier to work, and transportation, always a very expensive factor in this district, has been cheapened by the better condition of the roads.

The lack of water interfered greatly with the washing out of gold at the mines, and thus threw a large number of men out of employment. While the wages paid last year were generally maintained, it

was much easier on this account to obtain at all times a plentiful supply of labor.

On July 26, 1908, the undersigned relieved Capt. G. B. Pillsbury, Corps of Engineers, as engineer officer of the board. This change, taking place in the middle of the short working season, was very unfortunate, as, on account of the vast extent of territory and conditions so very different from anything known within the interior of the United States, considerable time is necessary for an officer to become thoroughly acquainted with road work in Alaska. However, the work had been thoroughly organized for the year, so that the minimum amount of injury was done by the change. A very satisfactory amount of road construction was done during the year at a very reasonable cost. The method of work and general conditions have been described in previous reports.

The roads constructed by the board are, as a rule, good earth roads except where the soil is too soft, when corduroy or plank is used. These roads are apt to become soft and badly cut up during long-continued wet weather if the traffic is heavy. But with the present amount of traffic and the number of localities without any roads at all, the board has not felt justified in more expensive construction. In some localities gravel has been found cheaper and better than corduroy. These roads are, of course, in good condition at all times with a small amount of maintenance. Every effort has been made to keep the cost down to the minimum on account of the great demand and necessity for new roads throughout the Territory.

The cost of surveys, as heretofore, has been very expensive on account of the difficult nature of the country. They were, however, necessary and of great benefit in the prosecution of the work.

Where the soil was favorable, horses and road machines have been used and considerable economy effected thereby.

Road work is still going on in many parts of the Territory and for this reason it is impossible to give a complete report of the season's work.

A description of the road work undertaken by the board this year, so far as completed, is as follows:

#### SOUTHEASTERN ALASKA.

*Portage road, Prince of Wales Island (No. 1).*—This road extends from the head of Chomly Sound, on the east side of Prince of Wales Island, to the head of Hetta Inlet, on the west side of the island, a distance of 3.96 miles. It affords a safe and easy line of communication between the town of Ketchikan and the west coast of Prince of Wales Island, thus avoiding the dangerous sea trip around Cape Chacon at the southern end of the island. There is a weekly mail service over this road.

Construction was begun during the season of 1906 and completed June 12, 1907. On account of the very wet soil, a large part of the road was planked, plank being found cheaper than corduroy. The work this year has been under the charge of Mr. Anton Lervold, foreman. It consisted in certain improvements to the completed road, and in the construction of a pack trail from the west end to the town of Sulzer, and from the east end along Chomly Sound to reach a point free from the ice which forms at the head of the sound during severe



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used entirely by foot passengers. It affords communication to the mining properties on the east side of the Indian River, and is also of benefit to the large number of tourists who visit the town of Sitka during the summer.

Its length is 108 feet. The piers are of cement, as are also the anchorages. It is a suspension bridge, and is swung on 1½-inch steel cables at a height of about 12 feet above the average stage of the river. The total cost of construction was \$2,167.46.

VALDEZ DISTRICT.

Mr. J. H. Ingram is superintendent in charge of this district.

*Valdez-Gulkana route (No. 4).*—This is part of the main overland route to the interior of Alaska. Its length is 128 miles. Winter mails, freight, and passengers for the interior and northwestern parts of Alaska are carried over this route; also all supplies for the Copper River Basin and the northeastern part of the Susitna Basin. During the past year 83,731 pounds of mail were carried over this route. The amount of freight and number of passengers can not be accurately determined. It is known that 1,510 passengers, 90 head of cattle, and 2,473 tons of freight used this road. The actual number is probably greatly in excess of the above.

The radical improvement of the road from Valdez through the Coast Range has been delayed until the present season in hopes that one of the several railroad companies building out of Valdez would complete this portion of their line, thus saving the commission the great expense of this work. However, as little progress seems to have been made and railroad construction is practically at a standstill, road work on this section has been pushed during the past season. The result is that four-horse sleds can now go the entire distance from Valdez to Fairbanks, except for a short distance to the north of Thompson Pass, where one-horse sleds must still be used. It is hoped to complete this portion of the route next year so that four-horse sleds may make the entire journey, and, if sufficient funds are available, to make the entire route practicable for wheel transportation in summer as well. The work through Keystone Canyon and on to the summit has been very expensive, but this part of the road, once the most difficult on the road to Fairbanks, is now a good road for either wagons or sleds. During the past season 15.35 miles of road and 8,300 feet of trail were completed. In addition, a small amount of maintenance work was done and 7 miles of trail were staked.

The work was divided into three sections this year—Keystone Canyon, the road from Valdez to the summit of Thompson Pass, except Keystone Canyon, and the road from the summit to Gulkana. Mr. R. M. Hardy was in charge of the work in Keystone Canyon, which was almost entirely in rock for a distance of 1.6 miles. The work was done by contract by Mr. G. W. Nelson.

The unit prices under the contract were as follows:

Excavation .....	per cubic yard..	\$1. 15
Retaining walls .....	do.....	3. 50
Paving .....	per square yard..	1. 00
Culverts .....	each..	12. 50



The work has been completed, but settlement with the contractor has not been made. The entire cost, including superintendence, was approximately \$21,000.

The work from Valdez to the summit, excluding the canyon, was done by day labor under the charge of Mr. J. M. McDonald and Mr. O. E. Olson, foremen. The length of new road construction completed was 6.25 miles. The cost, including contingencies and maintenance, was as follows:

Work.	Quantity.	Cost per unit.	Total.
Grubbing and clearing .....	5 miles..	\$397.48	\$1,987.40
Grading .....	18,265 feet..	.23	4,200.95
Corduroy .....	505 do...	.33	166.65
Small bridges and culverts .....	517 do...	1.78	920.26
Bridge 106 feet long .....	1 do.....		544.20
Removing slides and grading, scattered.....			449.66
Rockwork .....	3,865 feet..	1.58	6,316.70
Pack trail .....	1,700 do...	.09	153.00
Ditching .....	650 do...	.21	136.50
Staking trail .....	7 miles..	8.45	59.15
Total .....			18,984.47

The work from the summit to Gulkana was done by hired labor under the charge of Mr. O. E. Olson, foreman. The greater part of the supplies for this work were shipped in by sled during the winter. The length of new road construction was 7.50 miles. The cost, including contingencies, was as follows:

Work.	Quantity.	Cost per unit.	Total.
<b>New construction:</b>			
Grubbing and clearing .....	7½ miles..	\$197.54	\$1,481.55
Grading .....	4,938 feet..	.24	1,185.12
Trail, 6 feet wide, clearing.....	14 miles..	88.88	110.10
Small bridges and culverts.....	179 feet..	1.74	311.46
Bridges, with approaches.....	2 do.....		666.68
Total .....			3,754.86
<b>Maintenance:</b>			
Labor on Tonsina bridge piers .....			89.50

This year's work should materially decrease freight rates to the interior.

*Gulkana-McCallum route (No. 6).*—This is an extension of route No. 4 toward the interior. It is 72 miles long.

Forty-eight thousand one hundred and thirty-one pounds of mail were carried over this route last year. One hundred and thirty-six tons of freight and 90 head of cattle are known to have passed over the road, but undoubtedly a much greater amount was shipped and not reported. The greater part of the supplies needed for this work was shipped in by sled during the winter.

Construction was begun June 18 under the charge of Mr. Lars Holland, foreman, and was continued until stopped by the lateness of

the season. New construction was completed 15.50 miles. The cost, including contingencies, was as follows:

Work.	Quantity.	Cost per unit.	Total.
Grubbing and clearing .....	15½ miles	\$194.74	\$3,018.47
Grading .....	39,900 feet	.084	3,391.50
Corduroy .....	300 do.	.47	141.00
Small bridges and culverts .....	924 do.	1.76	1,626.24
Rock work .....	342 do.	1.12	383.04
Retaining crib .....	178 do.	.27	48.06
Total .....			8,608.31

Conditions of travel have been greatly improved by this season's work, though some improvements are still needed along the upper Gulkana River.

#### FAIRBANKS DISTRICT.

Mr. John Zug is superintendent in charge of this district.

*McCarty-McCallum road (No. 6A).*—This is that part of the overland route from Fairbanks to Valdez between McCarty and McCallum, extending from the mouth to the head of the Delta River. Its length is 74 miles. The section below Donnellys, 35 miles, is used only in summer and in late spring and early fall when the cut-off between Washburn and Donnellys can not be used. The section above Donnellys is part of the regular overland trail used for both winter and summer travel.

No work has been done by the board on the lower section previous to this year. Previous work on the upper section has consisted principally in rockwork in the neighborhood of Caseys cache.

Construction the past season was begun July 8, 1908, at McCarty by Mr. J. H. Joslin with a crew of 30 men. Work was continued until stopped by the approach of winter. The section between McCarty and Donnellys was finished July 14, at an average cost of \$40 per mile. The work above Donnellys cost approximately \$400 per mile, except the rockwork near the rapids (1,400 feet), which cost \$2 per running foot, and that at the lakes (1,600 feet), which cost \$1.50 per foot. The road is now complete as far as Caseys cache. Sixty miles of road were completed this year. The cost of the work, including maintenance and contingencies, was \$16,307.06.

Detailed reports of this work have not yet been received. It is estimated that 15,000 pounds of freight were hauled over the road the past season. Forty-eight thousand one hundred pounds of mail were hauled over the section from McCallum to Donnellys.

*Washburn-McCarty road (No. 5A).*—This road connects Washburn with McCarty, a distance of 33 miles. It is that part of the overland trail between the mouth of the Delta River and Washburn. Work was commenced on this section in 1906. In 1907 the road was extended from Washburn to Tenderfoot Creek.

Construction this year consisted in an extension of the road from Tenderfoot Creek to McCarty and of improvements in the road already made. Work was commenced May 24, 1908, and finished July 7, 1908, by a working party under the immediate charge of

Mr. J. H. Joslin. Nineteen miles of new road were constructed at a total cost, including contingencies, of \$6,881.56, an average of \$362.19 per mile. This includes, approximately, \$200 for maintenance.

This road is mainly intended to provide for the overland mail service in the early fall and late spring, and to serve such traffic as may require the road in summer when the Delta Cut-off across the flats south of the Tanana River is not available. It also serves a considerable local traffic between Fairbanks and Richardson and on up the Tanana River.

*Delta Cut-off sled road (No. 5B).*—This road extends across the flats south of the Tanana River between Washburn and Donnellys, a distance of 55 miles. It is designed to serve the overland traffic between Fairbanks and Valdez, except in the late spring and early fall and summer, when travel follows the roads along the Tanana and Delta rivers (routes 5A and 6A). Its construction was completed during the season of 1907.

Work this year consisted entirely in maintenance. Three small bridges were replaced and a short piece of trail was cut, at a total cost of \$186.

*Fairbanks-Washburn road (No. 5).*—This is the last section of the overland trail from Valdez to Fairbanks. It connects Fairbanks with Routes 5A and 5B at Washburn. Its length is 62 miles. Construction on this route was begun in 1905 and continued in 1906 and 1907.

New work this year consisted in the construction of three small bridges about 22 miles from Fairbanks under contract with Mr. J. T. Lawler at a cost to date of \$2,417.55. Settlement has not yet been made with the contractor and the final cost can not be given as yet.

The work of maintenance of previously constructed road was begun March 10, 1908, under charge of Mr. J. H. Joslin. It comprised a number of repairs to corduroy and bridges, clearing away of fallen timber and widening the trail where it had been cut away by the river. The total cost of maintenance was \$445.75.

*Sled road from Cleary to Birch Creek (No. 16).*—This is part of the winter sled route between Circle and Fairbanks and is used for winter travel from Fairbanks to Circle, Eagle, and Dawson. It extends from Chattanika to the Birch Creek district, where it connects with route No. 15, a distance of 54 miles. About 200 tons of freight were hauled over this road during the past season, and there is a weekly mail service from October 1 to June 1.

Considerable work was done on this road last year and a fairly good sled road completed.

Work this year consisted in repairs to the road already completed and in the construction of 39 miles of new road. The working party was under the charge of Mr. J. C. Wood. The total cost of new construction was \$5,118.13, and of maintenance, \$984.92. The above items include contingencies.

*Fairbanks-Hot Springs sled road (No. 17).*—This route was surveyed last spring at a total cost of \$1,320.81.

An allotment of \$3,000 was made by the board this year for the construction of bridges across several streams along the road.

Final report on this work has not yet been received. The work is nearly completed at the present time.

*Hot Springs Eureka road (No. 36).*—This road connects Hot Springs with Eureka and Pioneer creeks, Glen Gulch, and neighboring creeks. Its length is 22 miles. It affords communication for the mines in the above-named districts with Hot Springs. Approximately 300 tons of freight were hauled over the road during the past season. Construction this year was under the immediate charge of Mr. J. J. Price. This road was originally built by private parties owning mines in the district served. The new road utilizes such portions of the old one as are available, but eliminates numerous heavy grades. Most of the old road is practically reconstructed. The road was completed this year, with the exception of a bridge over Baker Creek. The cost was approximately \$7,000. Detailed reports have not yet been received.

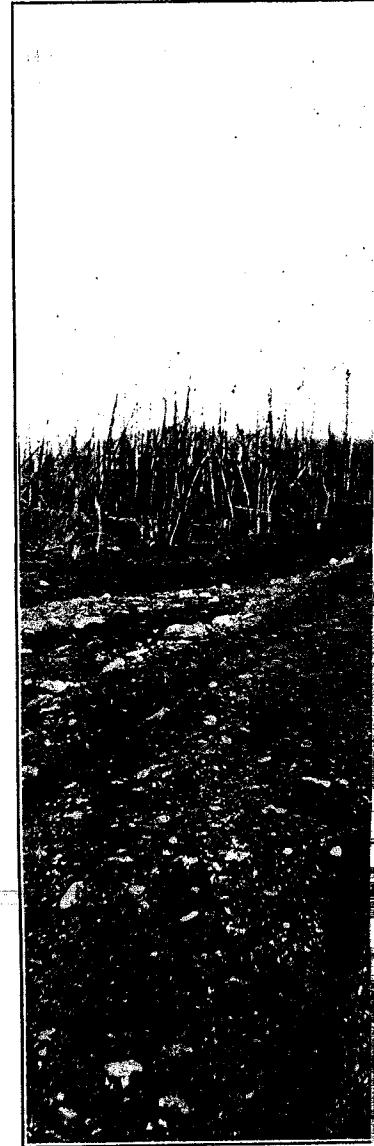
*Salcha-Caribou sled road (No. 37).*—This road serves to connect the mines along the Salcha River with the Tanana River. It extends from the mouth of the Salcha River to Caribou Creek, a distance of 45 miles. Construction was started about September 1, under the charge of Mr. J. C. Wood. This work is not yet completed. Up to the present time 17 miles have been finished and considerable work done on the remaining 28 miles. The total cost to date is approximately \$5,000. It is expected that the road will be completed this year at a further cost of approximately \$1,200.

#### FAIRBANKS LOCAL ROADS.

These roads connect the different towns and settlements in the neighborhood of Fairbanks with the city of Fairbanks and with the Tanana Valley Railroad. The board's superintendent, Mr. John Zug, was appointed road overseer of the Fairbanks road district with the consent of the board, and has administered the local road-tax fund during the last two years.

*Gilmore Summit road (No. 7).*—This road connects Gilmore Station with the summit of the divide between Pedro and Cleary creeks. Its length is 7 miles. It provides communication from the head of Pedro Creek to the Tanana Valley Railroad, connecting at the summit with the roads to Cleary and Fairbanks creeks. About 1,000 tons of freight were hauled over the road during the past season. Construction this year was under the immediate charge of Mr. H. M. Henning. This consisted of an extension of the road from its initial point back 1 mile to Gilmore Station, on the Tanana Valley Railroad. This was made necessary by the change in location of the new railroad station. The total cost, including maintenance, was \$2,709.30, of which the board supplied \$1,952.30 and the local road tax \$757. The cost of maintenance was \$560, included in the above total.

*Summit-Cleary road (No. 7A).*—This road connects the summit of the divide between Pedro and Cleary creeks with Cleary city and creek. Its length is 11 miles. It connects route No. 7 with Cleary and also affords communication with the railroad station at the lower end of Cleary Creek. Approximately 1,600 tons of freight were hauled over the road during the last season. The work was in charge of Mr. J. F. Carlile. The length of new construction completed this year was 1 mile, divided among three small branch roads. The total



GOLDSTREAM

cost was \$1,059.50, all of which was paid from local road taxes. The total cost of maintenance of the road previously constructed was \$1,140.67, of which the board supplied \$309.50 and the local road tax \$831.17.

*Fox-Dome road (No. 7B).*—This road connects Fox Station with Dome city and creek, a distance of 11 miles. It serves to supply traffic between Fox and Ridgetop Station, on the Tanana Valley railroad, and Dome city and creek.

About 1,000 tons of freight were hauled over this road during the past year. Work this season was done by hired labor under the charge of Mr. J. E. Hendrickson. The length of new construction completed was 4 miles. It consists of an extension of the road from Dome City to the mouth of Dome Creek. The total cost was \$7,792.95, of which the board supplied \$4,922.57 and the local road tax \$2,870.38. About two-thirds of the road was corduroy. The remainder was graded and ditched only. The total cost of maintenance was \$461, included in the above total.

*Summit-Fairbanks Creek road (No. 7C).*—This road connects the summit of the divide between Pedro and Cleary creeks with Fairbanks Creek, a distance of 10 miles. It is designed for a line of communication for the mines situated along Fairbanks Creek. It is estimated that 800 tons of freight were hauled over this road during the past season.

Construction was under the charge of Mr. H. M. Henning. Three-fourths mile of new road was completed this year, being an extension of the road already constructed. This road is of corduroy covered with soil over the top and is well supplied with culverts. The ditches are revetted with moss and brush, and small dams are provided to prevent scouring and undermining of the road. The total cost was \$3,199.13, of which the board supplied \$881.75 and the local road tax \$2,317.38. The cost of maintenance of that part of the road already constructed was approximately \$1,650, included in the above figures.

*Fairbanks-Ester Creek road (No. 7D).*—This road connects Fairbanks with Ester Creek and includes a branch road from Chena to Ester Creek. Its length is 13 miles. It affords communication for Ester Creek with the towns of Fairbanks and Chena and with the railroad station at Ester Siding. It also forms a connection with the winter trail to Hot Springs and Fort Gibbon. About 2,000 tons of freight were hauled over the road during the past season. Work was under the immediate charge of Mr. H. M. Henning. Seven miles of new construction were completed this year. The total cost was \$3,015.65, of which the board paid \$4,209.13 and the local road tax, \$3,806.52. The total cost of maintenance was \$1,079.39, of which the board paid \$357.25 and the local road tax \$722.14, included in the above total.

*Vault Creek road (No. 7E).*—This road connects Ridgetop Station on the Tanana Valley Railroad with Vault City and Creek a distance of 2 miles. Approximately 550 tons of freight were hauled over the road during the past season. The work was done by hired labor under the charge of Mr. Abe McKinnon. The length of new construction completed this year was 1 mile. The greater part of the road was corduroyed and covered with dirt or gravel. The total cost

was \$3,474.01, of which amount the board paid \$2,266.40 and the local road tax \$1,207.61. The work of maintenance of the 1 mile previously completed cost \$44, which is included in the above total.

*Treasure Creek road (No. 7F).*—This road connects Vault City with Treasure Creek, a distance of one-half mile. It affords communication between Treasure Creek and Ridgetop Station through route 7E, and through routes 7B and 7G with Fairbanks. It was entirely constructed this year by hired labor under the immediate charge of Mr. Abe McKinnon. The total cost was \$1,896.48, of which the board supplied \$1,359.50 and the local road tax \$536.98.

*Fairbanks-Fox road (No. 7G).*—This road connects Fairbanks with Fox Station (Tanana Valley Railroad), a distance of 10 miles. It affords a means of communication between Fairbanks and the mines on Goldstream and Engineer Creek and connects with route 7B at Fox, thus providing a through wagon road from Fairbanks to Dome, Vault, and Treasure creeks. It is estimated that 2,000 tons of freight were hauled over the road during the past season.

Construction was begun June 20, 1908, and finished August 28, 1908, by hired labor under the charge of Mr. F. C. Irons. The work was partly done by private subscription under the direction of the Fairbanks Chamber of Commerce. The remainder of the road was completed under Mr. Zug's direction. In addition to this, a branch road 2 miles in length was built to connect with the mines on Goldstream. The total cost of the 6 miles constructed by Mr. Zug was \$8,266.80, an average of \$1,377.80 per mile, of which the board paid \$4,908.98 and the local road tax \$3,357.82.

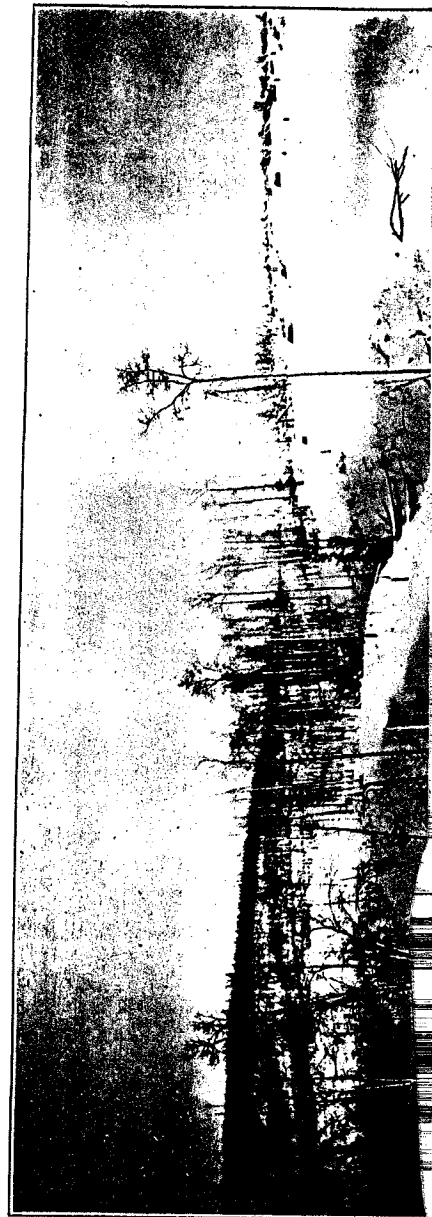
The only maintenance work on this road consisted of repairs to bridges in the vicinity of Fairbanks, at a cost of approximately \$600, included in the above total. It is expected to extend this road through to Gilmore this year to connect with route No. 7.

#### YUKON DISTRICT.

Mr. H. D. Reeve was disbursing agent for the board for this district. Mr. George Pulham was in charge of construction at Eagle and Circle, and Mr. C. R. Corbusier in charge of construction in the neighborhood of Hot Springs and Fort Gibbon.

*Eagle-Fortymile road (No. 11.)*—This road is intended to connect the Fortymile mining district with the town of Eagle, on the Yukon. Its length is 47 miles. It has not yet been completed; so, but little, if any, freight has been hauled over it up to the present time. There is a mail service over the road twice a week during the winter. The road was originally surveyed by Mr. F. E. G. Berry, in 1907.

At the end of the season of 1907, 9.50 miles of wagon road and 7.25 miles of sled road were completed. Work this year consisted in extending the wagon road to 17 miles from Eagle and in a sled-road extension toward the Fortymile River. Construction was begun July 28 and stopped September 30 on account of a very heavy fall of snow. The work was done by hired labor under the immediate charge of Mr. W. R. Cameron and Mr. Ludwig Swanson. Twenty-six miles of new sled road were completed, at a cost of \$12,426.68. The total cost of maintenance of previously constructed road and of the extension



was \$2,319.41. The proportional part of all incidental expenses as superintendence, transportation, etc., is included in the above amounts.

*Road from Circle to Central House (No. 15).*—This road connects the town of Circle with Central House, affording a means of communication for the mining camps of Deadwood, Mastodon, and Eagle creeks and overland communication between Circle and Fairbanks. It is estimated that 200 tons of freight were hauled over the road during the past year. There is a winter mail service four times a month between Fairbanks and Circle over this road.

Construction during the past season was begun April 18 and ended August 20. The work was done by teams and hired labor under the immediate charge of Mr. W. R. Cameron and Mr. Ludwig Swanson as foremen. This road is now completed for 20 miles from Circle. Ten and one-half miles of new road were constructed this year at a total cost of \$22,847.43. The cost of maintenance of previously constructed road was \$307.50. The above amounts include contingencies.

*Rampart-Big Minook road (No. 9).*—This road connects Rampart with Eureka Creek, a distance of 28 miles, of which 6.50 miles are now completed. It is intended to supply the numerous mines tributary to Rampart along the Big Minook Valley. Approximately 300 tons of freight were hauled over the road during the past season. Construction this year commenced July 6 and ended August 25. The work was done by Mr. S. E. Heeter, under an agreement with the board regarding cost of labor, subsistence, and teams. One-quarter mile of new road was constructed and repairs were made on the road already completed. A certain amount of clearing was done for several miles farther in order to make a passable winter trail. The cost of construction, including maintenance, was \$3,240.75. This includes the construction of three small bridges, at a total cost of \$1,765. A passable sled road connects this road with route No. 36 at Glen.

*Roads around Hot Springs and Fort Gibbon.*—This work was under the charge of Mr. C. R. Corbusier as acting superintendent.

These roads are designed to connect Hot Springs and Fort Gibbon with the various mines in their vicinity and to improve that part of the winter mail route between Fairbanks and the Seward Peninsula in the neighborhood of these towns. An allotment of \$8,300 was made by the board this year to do the work. Construction was started quite late in the season and is only about half completed.

At the Tozi River, 10 miles below Tanana, approaches were graded to the crossing of the river and a log jam was removed, at a total cost of \$120. Two miles of winter road were constructed between the town of Tanana and St. James Mission, at a cost of \$775.25.

A road 9 miles in length was started between the mouth of Hot Springs Slough and Sullivan Creek. A part of the expense of this road was borne by private subscription. This road is nearly completed. Report as to cost has not yet been received.

Work was started on a sled road around Hot Springs Hill to improve the route between Hot Springs and Fort Gibbon. This road was located last spring at a cost of \$241. It is about one-half completed at the present time. No report has been received as to cost to date.



Improvements of the main sled road between Fairbanks and Fort Gibbon in the neighborhood of Hot Springs were begun. This work is at present about one-half completed. No report as to cost has been received to date. A survey of this route was made last spring at a cost of \$591.14.

*Yukon-Chandler road (reconnaissance).*—During the last two or three years considerable activity in prospecting and mining has taken place along the Chandlar River, and the necessity for better means of communication has been greatly felt. During the past summer Mr. Fred Date was sent out with a party to make a preliminary survey for a wagon road extending from the Yukon to the Chandlar mining districts. Owing to lack of funds this survey was not quite completed. The total cost of that part of the survey completed was approximately \$1,145. Detailed reports have not yet been received.

#### NOME DISTRICT.

Mr. W. L. Goodwin was superintendent in charge of work in this district.

*Nome-Dexter road (No. 13).*—This is the main highway leading from Nome to the adjacent mining camps. It connects the city of Nome with Dexter Creek, Nome River, Buster Creek, and all tributaries of Nome River above Dexter. Its length is 8.58 miles. It supplies the numerous mining camps to the north of Nome City, extending to Nome River and beyond. Approximately 4,300 tons of freight were hauled over the road during the past season. The winter mails to the Kougarok follow this route. It was completed last year. The work this year consisted entirely of maintenance at a cost of \$3,779.35. The high cost of maintenance is due to the heavy traffic when the road is wet, particularly in the early spring during the break-up.

*Dexter-Buster road (No. 13E).*—This is an extension of the Nome-Dexter road. It connects the Nome-Dexter road with the Buster Creek and Osborn Creek mines. Its length is 2.37 miles. It was constructed during the present season by a working party under the immediate charge of Mr. R. J. Kenny at a total cost of \$882.15. It is estimated that 100 tons of freight have been hauled over this road since its completion, July 28, 1908.

*Bessie Banner Creek road (No. 13F).*—This is a branch of the Nome-Dexter road, route 13. It leaves the Nome-Dexter road at the Bessie Mine and skirts the base of Anvil Mountain to the northwest and connects with the Anvil Glacier road at Anvil Creek, following the mines along this route. Its length is 3.46 miles. It was constructed during the early part of the season by a working party under the immediate charge of Mr. M. E. Heavey and Mr. R. J. Kenny at a cost of \$1,822.29. Approximately 650 tons of freight were hauled over the road since its completion, June 24.

*Nome-Osborn Creek route (No. 13H).*—This is a branch of the main trunk road, route 13. It leaves the main road at a point  $1\frac{1}{4}$  miles from Nome and extends to the northeast toward Osborn Creek, a distance of 4.79 miles, supplying the numerous mines to the east of Bessie Mine on the main road. It was constructed during the past season by a working party under the direction of Mr. R. J. Kenny. The work was completed July 22, at a total cost of \$2,367.88. About



ON GLACIER



GRADE OVER SKOO

800 tons of freight have been hauled over the road since its completion.

*Nome Wireless Station road (No. 131).*—This is a short road 800 feet long connecting Steadman avenue, Nome, with the new wireless station recently established by the Signal Corps. It is graveled throughout at a total cost of \$780.81.

*Fox River-Council (No. 8).*—This is part of the road between Nome and Council, and serves to supply the Ophir Creek mining district. Its length is 5.25 miles. The mail over the road is by stage twice a week during the open season and weekly in winter by dog team. Approximately 100 tons of freight were hauled over the road during the past season. This road was completed in 1906. It is corduroyed throughout its length. This year the entire road was covered with gravel at a cost of \$2,458.18. In addition, \$1,561.75 was spent on repairs. Maintenance has been very expensive on account of the corduroy catching fire from the tundra fires that start from time to time during the dry season, and which are very difficult to extinguish. The ground over which the road passes is frozen to an unknown depth, and in places thaws out from time to time, thus causing breaks, the repair of which materially increases the cost of maintenance.

An aerial tram was built across the Bear River to furnish passengers a means of crossing during the spring break-up. It was completed last May by Mr. Ward Estey, at a total cost of \$265.80. This tram consists of a cable suspended from tripods 10 feet high on each bank. On the cable is a carriage block about 3 feet long, from which a cage is suspended by wire. Passengers sit in this cage and pull themselves across by an endless rope.

*Nome-Fort Davis road (No. 10).*—This road was originally constructed by Mr. A. E. Boyd as a toll road, and was purchased by the board in 1906 for \$1,450. It serves as a line of supply for the military post at Fort Davis and for all points to the eastward along the coast. It is 2.9 miles long. There is a weekly mail service over this road by dog team in winter. Work during the past season consisted in maintenance at a cost of \$772.79.

Up to the present year, this road crossed the Nome River by a toll bridge which was bought by the board from the owner, Mr. C. G. Horsfal, June 11, 1908, at a cost of \$4,000. As the bridge had gotten into bad condition, numerous repairs had to be made. These aggregated \$1,688.96, making the total cost \$5,688.96.

*Cunningham-Cape Nome (No. 10A).*—This road connects Nome and Fort Davis with Port Safety, Solomon Bluff, and Council. Its length is 5 miles. A weekly mail goes over this route during the fall and spring. Construction was begun July 15 and finished July 25 by hired labor under the immediate charge of Mr. R. S. Giddings. The total cost was \$997.35.

*Otter Creek Bridge.*—This is a small bridge put in at a cost of \$75.12 near the mouth of Otter Creek to accommodate travel up Nome River and its tributaries from Nome River Bridge to Osborn Creek.

*Flagging winter roads Seward Peninsula.*—The reasons for this work and the method adopted were given in the report for 1907 and will not be repeated here. During the last winter, 486 miles of trail were flagged at a total cost of \$1,685.24.

In addition to the above, considerable work was done in repairs and maintenance on routes where no new construction was done this year. The cost was as follows:

Road from Candle up Candle Creek (No. 26)-----	\$150.47
Penny River wagon road (No. 33)-----	141.50
Bessie Little Creek road (No. 13 G)-----	247.60
Anvil Glacier road (No. 31)-----	275.87
Port Safety ferry-----	77.75
Hastings Creek bridge-----	418.06
Bonanza River ferry-----	65.20
Tishou River ferry-----	33.00
Nome-Kaltag trail (No. 30)-----	34.92
Total -----	1,444.37

## SOUTHWESTERN ALASKA.

Work in this district was in charge of Mr. Anton Eide as acting superintendent.

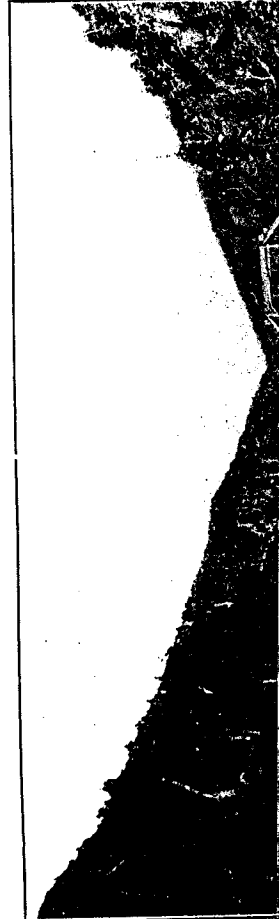
*Road to Sunrise from Hope (No. 12).*—This road connects Mile 35, Alaska Central Railroad, with Sunrise and Hope, two small mining towns on the shore of Cook Inlet. During the season of 1907, 37 miles of road were completed. Work during the present season has consisted principally in making repairs to parts of the road and bridges washed out or injured by floods and in making cut-offs in the road already built. The season's work not having been completed, full reports have not been received. Up to September 1, \$3,840 have been spent on this road on both new construction and maintenance. Travel over this road is steadily increasing, and it is expected that 1,000 people will have passed over it this season. There is a mail service over the road twice a month during the winter.

*Girdwood Indian Creek trail (No. 38).*—This trail connects Girdwood, on the Alaska Central Railroad, with Indian Creek. Work on this trail is still going on and full reports have not been received. Up to September 1, 6 miles had been completed, at a cost of \$1,800, an average of \$300 per mile.

*Seward-Nome reconnoissance.*—This was a reconnoissance made with a view to locating a sled road from the town of Seward, on Resurrection Bay, overland to Nome, to furnish a route for the winter mail to Nome, which would be shorter than the present one through Fairbanks, and which would supply the mining districts along the Kuskokwim and Innoko rivers.

This reconnoissance was in charge of Mr. G. E. Pulham and Mr. W. L. Goodwin, Mr. Goodwin having charge of the engineering feature of the work. The route followed was Seward to Suisitna, on the Alaska Central Railroad, Rainy Pass, McGraths, at the mouth of Tacotna River, Gane Creek, Kaltag, and Nome. The party started out from Seward on January 31, 1908, and arrived at Kaltag March 19, 1908, and at Nome April 5, 1908. The route from Kaltag westward is along the line followed at present by the winter mail from Fort Gibbon to Nome, through Kaltag and Unalaklik.

This route would form a very good line of communication for the mining camps of the Innoko and Kuskokwim rivers, as well as furnish a much quicker winter mail service than at present for Nome.



A very good winter trail was located, but it would not be available unless the Alaska Central Railroad were completed beyond the head of Knik Arm. However, in the present condition of the mining region that would be served there would not be enough travel to keep the winter trail open.

The total cost of the reconnoissance was \$5,813.74.

*Reconnoissance from Tonsina to the Copper and Chitina rivers.*—In the country on the southern slope of the Wrangel Mountains and lying north of the Chitina River, much prospecting and mining work is being done. About 250 men are engaged in development work in this locality. This region is now reached by the Valdez-Fairbanks trail through Tonsina.

In 1907 a bridge was constructed across the Kotsina River at a cost of \$4,323.46. This country is in great need of a passable and properly located trail, the present trails being in very poor shape and badly located. Mr. J. L. McPherson, special inspector for the board, made a reconnoissance of this region, leaving Tonsina August 1 and returning August 23. The general location of a new trail was determined upon and it is hoped that some work may be done by the board in this region next year, if sufficient funds are available.

Respectfully submitted.

F. A. POPE,

*Captain, Corps of Engineers, Engineer Officer of the Board.*

OCTOBER 20, 1908.

REPORT OF THE DISBURSING OFFICER.

The present report covers vouchers received up to October 1, 1908.

Carried on hand date of last report, October 1, 1907:

Appropriation "Military and post roads, bridges and trails,"	
act March 2, 1907.....	\$43, 897. 00
Alaska fund.....	3, 408. 74
Received from Treasurer United States:	
Appropriation "Military and post roads, bridges and trails"—	
Act March 2, 1907.....	\$75, 000. 00
Act May 11, 1908.....	175, 000. 00
	250, 000. 00
Correction vouchers "Military and post roads, bridges and	
trails," act March 2, 1907.....	122. 10
Alaska fund.....	117, 750. 00
Correction vouchers, Alaska fund.....	123. 19
Sales public properties, Alaska fund.....	349. 25
Total.....	415, 650. 28
Disbursed as per tabulated statement below.....	361, 972. 32
Balance.....	53, 677. 96

The item "offices" embraces salaries of superintendents of districts, permanent employees of the commission, expenses of members of commission and of engineers in some instances, inspection, exchange and miscellaneous office expenses, Skagway, and suboffices of Valdez, Fairbanks, Nome, and a small office expense at Seattle. (See distribution following tabulated statement.)

	Military and post-roads, bridges, and trails, acts approved Mar. 2, 1907, and May 11, 1908.	Alaska fund.	Total.
Offices.....	\$15,519.92	\$12,244.22	\$27,764.14
Repairing tools.....	95.36	122.30	217.66
Sledding party, Valdez office.....	6.48	55.40	61.88
Route 1.....	1,819.51	2,843.19	4,662.70
Route 3.....	1,127.96	146.00	1,273.96
Route 3A.....	36,204.23	17,318.41	53,522.64
Route 3B.....	6,992.07	7,702.09	14,694.16
Route 4.....	21,763.09	11,278.18	33,041.27
Route 4 (8 mile point).....		899.32	899.32
Route 4A.....	60.00	345.52	405.52
Route 4B.....	551.44	38.15	589.59
Route 5.....	8,039.96	471.25	8,511.21
Route 5A.....	1,329.20	5,635.36	6,964.56
Route 5B.....	5,379.95		5,379.95
Route 5, bridges.....	85.00	2,256.05	2,341.05
Route 6.....	8,511.70	4,889.67	13,401.37
Route 6A.....	11,830.03	5,974.72	17,804.75
Route 7.....	165.51	1,904.30	2,069.81
Route 7A.....	290.51	256.50	547.01
Route 7B.....	6,403.28	664.30	7,067.58
Route 7C.....	1,108.76	204.50	1,313.26
Route 7D.....	3,509.20	615.85	4,125.05
Route 7E.....	449.96	128.00	577.96
Route 7F.....	1,261.00	89.00	1,350.00
Route 7G.....	3,796.50	1,036.11	4,832.61
Route 8.....	256.79	2,598.56	2,855.35
Route 9.....	3,721.64	545.33	4,266.97
Route 10.....	139.44	735.55	874.99
Route 10A.....	996.35	1.00	997.35
Route 11.....	8,350.63	18.77	8,369.40
Route 12.....	12,099.35	210.40	12,309.75
Route 12A.....	1,197.84		1,197.84
Route 13.....	1,069.27	2,601.49	3,670.76
Route 13A.....	356.92	400.10	757.02
Route 13B.....		88.35	88.35
Route 13C.....	63.25	112.00	175.25
Route 13D.....	70.25	58.00	128.25
Route 13E.....	882.15		882.15
Route 13F.....	62.55	1,675.05	1,737.60
Route 13G.....	25.00	72.00	97.00
Route 13H.....	2,205.36	139.41	2,344.77
Route 13I.....	755.06		755.06
Route 14.....	3.75	599.75	603.50
Route 15.....	10,466.21	10,790.69	21,256.90
Route 15A.....	9,112.72	1,684.00	10,796.72
Route 16.....	4,828.47	1,515.75	6,344.22
Route 17.....	10,219.05	4.00	10,223.05
Route 18.....	6,758.16	719.33	7,477.49
Route 19.....	4,388.01	120.00	4,508.01
Route 20.....	9.50	4.75	14.25
Route 23.....	969.00	156.00	1,125.00
Route 24.....	786.00		786.00
Route 26.....	408.15	67.00	475.15
Route 27.....	58.00		58.00
Route 28.....	4,944.97		4,944.97
Route 29.....	1,881.64		1,881.64
Route 30.....	808.92		808.92
Route 31.....	98.28	877.04	975.32
Route 32.....	3.25		3.25
Route 33.....	64.25	62.50	126.75
Route 34.....	776.91		776.91
Route 35.....	272.25	300.00	572.25
Route 36.....	64.44	292.67	357.11
Route 37.....		1,320.81	1,320.81
Survey, Fairbanks-Hot Springs.....		591.14	591.14
Survey, Hot Springs-Fort Gibbon.....			65.20
Bonanza Ferry.....	65.20		60.00
Otter Creek Ferry.....	60.00		33.00
Tishou Ferry.....	33.00		448.96
Hastings Creek Bridge.....		4,000.24	5,105.54
Nome River Bridge.....	1,045.30	2,167.46	2,167.46
Sitka Bridge.....		265.80	265.80
Bear River tram.....		5,813.74	5,813.74
Innoko reconnaissance.....		1,095.89	1,683.74
Flagging trails.....	587.85		10,804.68
Wintering stock.....	10,804.68		5,881.87
Expense, supervision and field inspection.....	5,881.87		
<b>Total.....</b>	<b>243,892.30</b>	<b>118,080.02</b>	<b>361,972.32</b>

Salaries.....  
 Instruments.....  
 Stationery and fixtures.....  
 Fuel and lights.....  
 Rents.....  
 Exchange.....  
 Telegraph and telephone.....  
 Freight, dray, and express.....  
 Miscellaneous.....

Total.....

Wintering stock.....  
 Survey.....  
 Labor.....  
 Subsistence.....  
 Transportation.....  
 Purchase of animals.....  
 Hire of animals.....  
 Forage, veterinary supplies and c.....  
 Tools, wagon, and pack equipmen.....  
 Construction material.....  
 Camp equipment.....  
 Repairs, equipment, horseshoeing.....  
 Construction, contracts, and agr.....  
 Expense, supervision and field in.....

Total.....

Respectfully submitted.

MISSIONERS FOR ALASKA.

Military and post-roads, bridges, and trails, acts approved Mar. 2, 1907, and May 11, 1908.	Alaska fund.	Total.
\$15,519.92	\$12,244.22	\$27,764.14
95.36	122.30	217.66
6.48	55.40	61.88
1,819.51	2,843.19	4,662.70
1,127.96	146.00	1,273.96
36,204.23	17,318.41	53,522.64
6,992.07	7,702.09	14,694.16
21,768.09	11,278.18	33,041.27
.....	899.32	899.32
60.00	845.52	405.52
551.44	38.15	589.59
8,039.96	471.25	8,511.21
1,329.20	5,535.86	6,864.56
5,379.95	.....	5,379.95
35.00	2,250.05	2,291.05
8,511.70	4,859.67	13,401.37
11,880.03	5,974.72	17,804.75
165.51	1,904.30	2,069.81
290.51	256.50	547.01
6,403.28	664.30	7,067.58
1,108.76	204.50	1,313.26
3,509.20	615.85	4,125.05
449.96	128.00	577.96
1,261.00	89.00	1,350.00
8,796.50	1,036.11	4,832.61
256.79	2,598.56	2,855.35
3,721.64	545.33	4,266.97
139.44	785.55	874.99
996.35	1.00	997.35
8,350.63	18.77	8,369.40
12,099.35	210.40	12,309.75
1,197.84	.....	1,197.84
1,069.27	2,601.49	3,670.76
356.92	400.10	757.02
.....	83.35	83.35
33.25	112.00	175.25
70.25	58.00	128.25
382.15	.....	382.15
62.55	1,675.06	1,737.60
25.00	72.00	97.00
2,205.36	139.41	2,344.77
755.06	.....	755.06
8.75	599.75	603.50
10,466.21	10,790.69	21,256.90
9,112.72	1,034.00	10,146.72
4,828.47	1,515.75	6,344.22
10,219.05	4.00	10,223.05
6,758.16	719.43	7,477.59
4,383.01	120.00	4,503.01
9.50	4.75	14.25
969.00	156.00	1,125.00
786.00	.....	786.00
408.16	67.00	475.15
68.00	.....	68.00
4,944.97	.....	4,944.97
1,881.64	.....	1,881.64
808.92	.....	808.92
98.28	377.04	475.32
3.25	.....	3.25
64.25	62.50	126.75
776.91	.....	776.91
272.25	300.00	572.25
64.44	292.67	357.11
.....	1,320.81	1,320.81
.....	591.14	591.14
65.20	.....	65.20
60.00	.....	60.00
33.00	.....	33.00
.....	448.96	448.96
1,048.30	4,060.24	5,105.54
.....	2,167.46	2,167.46
.....	265.80	265.80
587.85	5,813.74	5,813.74
10,804.68	1,095.89	1,683.74
5,881.87	.....	10,804.68
.....	.....	5,881.87
48,892.80	118,080.02	361,972.32

REPORT OF BOARD OF ROAD COMMISSIONERS FOR ALASKA. 27

Distribution of expenditures.

OFFICES.	
Salaries	\$20,687.83
Instruments	289.47
Stationery and fixtures	1,532.20
Fuel and lights	623.20
Rents	1,847.56
Exchange	537.72
Telegraph and telephone	486.63
Freight, dray, and express	423.22
Miscellaneous	1,336.76
Total	27,764.14
FIELD WORK.	
Wintering stock	\$10,804.68
Survey	12,853.89
Labor	135,474.97
Subsistence	84,041.77
Transportation	8,301.83
Purchase of animals	5,189.00
Hire of animals	12,883.48
Forage, veterinary supplies and care of stock	11,479.57
Tools, wagon, and pack equipment	4,787.83
Construction material	15,345.97
Camp equipment	1,367.99
Repairs, equipment, horseshoeing	1,008.85
Construction, contracts, and agreements	74,606.33
Expense, supervision and field inspection	5,881.87
Total	334,203.15

Respectfully submitted.

SAM. C. ORCHARD,  
First Lieutenant, Third Infantry,  
Disbursing Officer of the Board.

ARC ANNUAL REPORT

1909

61st Congress, } HOUSE OF REPRESENTATIVES (Document  
2d Session. }

RECEIVED  
MAY 1 1910

REPORT OF ALASKA ROAD COMMISSION.

JOHN S. WELLS

Answered.....

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A COMMUNICATION FROM THE SECRETARY OF WAR INCLOSING  
A REPORT OF THE ALASKA ROAD COMMISSION OF MILITARY  
OFFICERS OF WORK DONE BY THEM DURING THE YEAR  
UNDER ACT OF JANUARY 27, 1905, AND INVITING ATTENTION  
TO THEIR RECOMMENDATIONS.

APRIL 18, 1910.—Read; referred to the Committee on the Territories and ordered to  
be printed.

*To the Senate and House of Representatives:*

I herewith transmit a communication from the Secretary of War inclosing a report of the Alaska Road Commission of military officers of the work done by them during the past year under the act of January 27, 1905, and invite attention to their recommendations.

In my annual message of December 7, 1909, I have already made a recommendation as to the legislation needed for the proper development of the Territory and I do not deem it necessary to add anything now.

WM. H. TAFT.

THE WHITE HOUSE, April 18, 1910.

WAR DEPARTMENT,  
Washington, April 18, 1910.

MY DEAR MR. PRESIDENT: I inclose herewith the report of the Board of Road Commissioners for Alaska.

I beg to suggest that this report be transmitted to Congress.

Yours, sincerely,

J. M. DICKINSON.

The PRESIDENT.

ILING INSTRUCTIONS

## ANNUAL REPORT OF THE BOARD OF ROAD COMMISSIONERS FOR ALASKA, 1909.

BOARD OF ROAD COMMISSIONERS FOR ALASKA,  
*Valdez, Alaska, October 27, 1909.*

SIR: I have the honor to submit report of the Board of Road Commissioners for Alaska for the season of 1909.

The report is made up as heretofore of three parts: Report of the president of the board, report of the engineer officer, and tabulated statement by the disbursing officer of expenditures up to October 1.

Very respectfully,

W. P. RICHARDSON,

*Major, Thirteenth Infantry, President of the Board.*

The ADJUTANT-GENERAL,  
*War Department, Washington, D. C.*

## REPORT OF THE PRESIDENT.

The last report submitted covered the operations of the board up to October 20, 1908, except disbursements, which were brought up to October 1.

Upon the close of the last season's work the board, basing upon its experience of the previous three years' work and upon a careful personal inspection of the overland route from Valdez to Fairbanks, made up a special estimate of funds for the improvement of this route for general summer travel by wagon or buckboard, together with additional amounts needed to complete the Chilkat road and certain other roads and trails having military and postal uses. This estimate amounted to \$350,000 and was approved by the Secretary of War and appropriated by Congress, with, however, the understanding, and assurance of the president of the board to the Military Committee of the House, that the amount would be sufficient to carry through the improvements proposed and obviate the necessity for a further appropriation at the next session of Congress, 1909-10, in order to make the work continuous through the two seasons.

Anticipating favorable action upon the estimate, preparation was made in the early winter looking to the most economical method of expenditure and best results obtainable, under the conditions, from the appropriation, which preparation embraced the purchase of additional animals and equipment, and the shipment by sled over the winter road from Valdez of tools, forage, rations, and other supplies, for distribution along the route for use during the open working season of 1909.

To properly supervise this winter work the office of the commission was transferred by orders from the War Department from Skagway, where it had been since the organization of the board, to Valdez, the coast terminus of the overland road. The transfer was made in February, and the shipment and distribution of supplies was carried out successfully under the supervision of Lieutenant Orchard, disbursing officer of the commission, and the immediate direction of Mr. J. H. Ingram, superintendent of the Valdez district. The engineer officer was occupied more particularly during the winter in exam-

ining the winter conditions and needs from Valdez as far as Fort Gibbon and

The season for work in the field opening in readiness for an active summer route 19 separate working crews were led by foreman, cook, 2 teamsters, and from wagon and 4 to 6 horses for moving camp supplies. Plows and scrapers were used although the greater part of the work, both in country or through brush and timber was done by hand with pick, mattock, and shovel.

Unfortunately for the plans of the board for the summer an almost unprecedented rainfall occurred prior, which, added to the already high water and glaciers of the mountains, resulted in melting away and delaying work all along the route, one of the most important and experienced by the commission in 1906 at an original cost of \$100,000. This bridge spanned the Tazlina River, and it was not possible to replace the bridge until the summer. This period of rain was followed by an early winter, and some of the work in the field on account of deep snow about which would usually happen.

Discouraging as were these unusual conditions the working season is extremely short and made here only as a matter of justice to the board of the work. It was impossible to accomplish what was hoped for, and the loss to the board by the increased expense of new work, with the loss of the old, will probably amount to at least \$75,000, on the estimated cost.

However, a great deal of important work on the entire route was gone over, with the exception of disconnected sections, most of which, which had to be left unimproved on account of winter. These unimproved portions are between Tonsina and Copper Center—very soft—soft between Copper Center and Gulkana, and between Gulkana and the "Dome" on the lower Delta.

A brief description of this overland route is given in the report. Travel on foot and horseback was made during the past summer, and two drove teams and 1,300 sheep were taken over. The "going" of the heavy rains and new work in progress was completed near the close of the season.

It became generally known before the close of the work that an appropriation of \$350,000 had been made for the "construction of military and postal routes" and that the plans of the road commission for the principal part of this amount in improving the route for travel by wheeled vehicles and to push the work forward. This information, being freely disseminated, became converted presently into the appa-



## ALASKA ROAD COMMISSION.

BOARD OF ROAD COMMISSIONERS FOR  
ALASKA, 1909.

BOARD COMMISSIONERS FOR ALASKA,  
*Valdez, Alaska, October 27, 1909.*

submit report of the Board of Road Com-  
missioners for the season of 1909.

is heretofore of three parts: Report of the  
report of the engineer officer, and tabulated  
report of expenditures up to October 1.

W. P. RICHARDSON,  
*Seventeenth Infantry, President of the Board.*

Washington, D. C.

## REPORT OF THE PRESIDENT.

covered the operations of the board up  
except disbursements, which were brought up

last season's work the board, basing upon  
previous three years' work and upon a careful  
of the overland route from Valdez to Fairbanks,  
of funds for the improvement of this route  
by wagon or buckboard, together with  
to complete the Chilkat road and certain  
for military and postal uses. This estimate  
and was approved by the Secretary of War  
Congress, with, however, the understanding,  
President of the board to the Military Com-  
at the amount would be sufficient to carry  
its proposed and obviate the necessity for a  
the next session of Congress, 1909-10, in  
continuous through the two seasons.

action upon the estimate, preparation was  
looking to the most economical method of  
results obtainable, under the conditions, from  
preparation embraced the purchase of addi-  
tional equipment, and the shipment by sled over the  
of tools, forage, rations, and other supplies,  
route for use during the open working season

this winter work the office of the commission  
from the War Department from Skagway,  
the organization of the board, to Valdez, the  
overland road. The transfer was made in  
and distribution of supplies was carried  
under the supervision of Lieutenant Orchard, dis-  
mission, and the immediate direction of  
the superintendent of the Valdez district. The engi-  
more particularly during the winter in exam-

ining the winter conditions and needs for improvement on the road  
from Valdez as far as Fort Gibbon and later in the Kenai Peninsula.

The season for work in the field opened rather late, but with every-  
thing in readiness for an active summer. On the Valdez-Fairbanks  
route 19 separate working crews were located, each crew consisting  
of foreman, cook, 2 teamsters, and from 20 to 25 laborers, with a  
wagon and 4 to 6 horses for moving camp and hauling timbers and  
camp supplies. Plows and scrapers were used wherever practicable,  
although the greater part of the work, being in a broken and rocky  
country or through brush and timber swamp, had to be done by  
hand with pick, mattock, and shovel.

Unfortunately for the plans of the board, about the middle of  
summer an almost unprecedented rainfall set in throughout the inter-  
ior, which, added to the already high water from the melting snows  
and glaciers of the mountains, resulted in flooding the streams, wash-  
ing away and delaying work all along the line, and partially destroy-  
ing one of the most important and expensive of the bridges erected  
by the commission in 1906 at an original cost of about \$20,000.  
This bridge spanned the Tazlina River, a dangerous glacier stream,  
and it was not possible to replace the portion carried away during  
the summer. This period of rain was followed after a brief interval  
by an early winter, and some of the working parties were driven from  
the field on account of deep snow about three weeks earlier than  
would usually happen.

Discouraging as were these unusual conditions, in a country where  
the working season is extremely short at best, mention of them is  
made here only as a matter of justice to the board in relation to cost  
of the work. It was impossible to accomplish as much as had been  
hoped for, and the loss to the board by destructive floods and the  
increased expense of new work, with the delays incident thereto,  
will probably amount to at least \$75,000, or more than 20 per cent  
on the estimated cost.

However, a great deal of important work was completed. The  
entire route was gone over, with the exception of about 17 miles,  
in disconnected sections, most of which, however, are passable, but  
which had to be left unimproved on account of the approaching  
winter. These unimproved portions embrace a section between  
Tonsina and Copper Center—very soft—some short stretches of swamp  
between Copper Center and Gulkana, and 7 miles over what is known  
as the "Dome" on the lower Delta.

A brief description of this overland route was given in last year's  
report. Travel on foot and horseback was continuous over the route  
during the past summer, and two droves of cattle and a drove of  
1,300 sheep were taken over. The "going" was bad, on account of  
the heavy rains and new work in progress, as might be expected, till  
near the close of the season.

It became generally known before the beginning of the season's  
work that an appropriation of \$350,000 had been made by Congress  
for the "construction of military and post-roads" in the Territory,  
and that the plans of the road commission were to expend the prin-  
cipal part of this amount in improving this overland route for summer  
travel by wheeled vehicles and to push the work as rapidly as possi-  
ble. This information, being freely discussed and reflected upon,  
became converted presently into the apparent belief, in many persons'

minds, that the road was already completed with the opening of summer and should be in good condition for travel. This curious fact might be interpreted into an indirect compliment, in the first instance, to the capacity of the board for accomplishing things, but it resulted later in much needless abuse of the road and criticism of the commission's methods; notably, though unexpectedly so, in the case of some members of the Signal Corps engaged on the work of improving the military telegraph line along the route. The people who have spent some time in Alaska thoroughly understand the conditions in respect to this work, but to prevent a wrong impression in the minds of others it seems necessary to again repeat here that the roads and trails in the Territory so far constructed are, with few exceptions, of a pioneer character, and their value should be measured against the conditions of a few years ago, and which still exist over the greater part of the Territory, rather than in comparison with what are now known as "good" roads in the States.

The Valdez-Fairbanks road has not been constructed with a view to heavy traffic in summer, nor for the comfortable use of automobiles. This will be appreciated when it is explained that the whole amount spent upon the road, including location and maintenance, since its beginning as a dog-team trail, for both summer and winter travel, is approximately \$650,000, excluding cut-offs for winter travel only, or about \$1,700 per mile. In sections of rock and gravel side-hill cuts the construction of a passable route for wheels meant necessarily the building of a substantial road, but in many long stretches the surface material is only the natural soil of the locality, with pole or brush corduroy underneath to give support in swampy places. Such sections naturally become cut up and muddy with much traffic in rainy weather, which condition is made worse on account of the narrowness of the road, which was necessary for reasons of economy.

The present state of the road is a development in response to the needs of the country, as far as possible with the funds at the disposal of the commission. The needs have been, first, a trail over which mail could be safely transported by dog-team or single-horse sled in winter and for foot passengers and pack animals in summer, with the bridging of dangerous streams and impassable swamps; second, a double or four-horse sled road for mail, passenger, and express traffic in winter; and third, the present condition of the route for general light-wheeled traffic in summer. The next step in its development will be, if funds become available, to widen it throughout, improve the grades, increase and perfect the drainage by further ditching, with additional culverts where necessary, to carry off the water. Good drainage, a most important factor in all road construction, is nowhere more necessary than on such a road as the one here described. All this work can now be done rapidly and at reasonable cost, and a really excellent country road completed in a few years, which will require only a small annual expenditure thereafter for repair and maintenance.

This route (about 385 miles in length, omitting a few cut-offs for winter travel only) extends from the open port of Valdez on the coast to the very heart of Alaska, at Fairbanks, connecting there in summer with the navigable waters of the Tanana and Yukon basins and during the closed season of navigation with the winter mail trails to the north and westward. It connects directly or through branch routes all

the military posts in Alaska except the line follows it closely nearly the whole of the distance, including the route to Michael, more than 1,000 miles, including Fairbanks. The rebuilding of this line from Valdez as far as Fairbanks was in a better shape, and the expense and difficulty will be simple matters in future compared with previous years.

The Tanana Valley, now the most important, will be the home of a permanent passenger summer mail service will be established in the near future, and the travel and traffic of all kinds are improved and will continue for many years.

Important branch roads, connecting the main line, are beginning to be demanded. Principal roads are between the mouth of the Chitina and the Copper River. The Railroad turns easterly up the valley on the wagon road near Copper River and will construct next season. Other important roads are to the Valdez Creek district from Fairbanks, not yet determined and from Paxson to Fairbanks.

While this main route has received the bulk of expenditure during the season, other roads in the Territory have not been neglected. Roads constructed by the board have been improved and made wherever necessary and funds were available.

The largest part of the season's work has been of improvement and conversion of "winter sled" into the class of wagon road. The improvement of "trail" into sled road has been of wagon road mileage has been of wagon road mileage of trail as heretofore reported. A different heads is given below, with comparison of last season.

Wagon road.....	.....
Winter sled road.....	.....
Trail.....	.....
Trail staked, permanent (iron stakes).....	.....
Trail staked, temporary, winter 1908-9.....	.....

The details of construction and distribution of the report of the engineer officer.

A number of roads, notably the Halibut Circle-Birch Creek and Rampart-Minor roads, far as the conditions of traffic at this time, the Peninsula (Nome district) is fairly well in necessary roads, with one or two exceptions in good state of repair. The same may be said in the immediate vicinity of Fairbanks. Some of the winter extension of the mail route has been where it had been found necessary to place

already completed with the opening of good condition for travel. This curious into an indirect compliment, in the first the board for accomplishing things, but needless abuse of the road and criticisms; notably, though unexpectedly so, in of the Signal Corps engaged on the work telegraph line along the route. The people in Alaska thoroughly understand the con- work, but to prevent a wrong impression seems necessary to again repeat here that e Territory so far constructed are, with per character, and their value should be tions of a few years ago, and which still of the Territory, rather than in comparison as "good" roads in the States.

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the military posts in Alaska except one, and the military telegraph line follows it closely nearly the whole distance from Valdez to St. Michael, more than 1,000 miles, including the winter extension from Fairbanks. The rebuilding of this line with a double line of wire from Valdez as far as Fairbanks was completed this season in excel- lent shape, and the expense and difficulty of line maintenance will be simple matters in future compared to what they have been in previous years.

The Tanana Valley, now the most active mining section of Alaska, will be the home of a permanent population. It is expected that a summer mail service will be established over the route at an early date, and the travel and traffic of all kinds will increase as facilities are improved and will continue for all time to come.

Important branch roads, connecting with the main route, are beginning to be demanded. Principal of these is a connecting road between the mouth of the Chitina River, where the Copper River Railroad turns easterly up the valley of the Chitina, and a point on the wagon road near Copper Center. This road it is proposed to construct next season. Other important and much-needed branches are to the Valdez Creek district from some point on the main road not yet determined and from Paxsons to Slate Creek.

While this main route has received the principal attention and the bulk of expenditure during the season just closed other parts of the Territory have not been neglected. All roads and trails previously constructed by the board have been kept in repair, and extensions made wherever necessary and funds were available.

The largest part of the season's work has been in the general nature of improvement and conversion of road heretofore classified as "winter sled" into the class of wagon road above described and the improvement of "trail" into sled road. Accordingly, the principal increase in mileage has been of wagon road, with a small reduction in mileage of trail as heretofore reported. The total mileage under different heads is given below, with comparison of the totals at the close of last season.

	1909.	1908.
	Miles.	Miles.
Wagon road.....	720.39	451.92
Winter sled road.....	421.00	396.90
Trail.....	203.56	255.07
Trail staked, permanent (iron stakes).....	257.00	.....
Trail staked, temporary, winter 1908-9.....	670.00	.....

The details of construction and distribution of mileage are given in the report of the engineer officer.

A number of roads, notably the Haines-Chilkat, Eagle-Forty Mile, Circle-Birch Creek and Rampart-Minook roads were completed in so far as the conditions of traffic at this time justify. The Seward Peninsula (Nome district) is fairly well provided with the most necessary roads, with one or two exceptions, and the system is in a good state of repair. The same may be said of the local roads in the immediate vicinity of Fairbanks. Some improvement was made on the winter extension of the mail route from Fairbanks westward, and where it had been found necessary to place guide stakes for protection

to winter travelers through the treeless and exposed sections along the coast of Bering Sea and on the Seward Peninsula, this staking was made permanent by the setting of iron stakes with small metal flags.

It was not deemed advisable to attempt any work on the winter trail from Knik, at the head of Cook Inlet, across the Alaskan Range to the Kuskokwim and Innoko, of which a reconnaissance was made in the late winter of 1907-8. Reference to this was made in last year's report, and it was then stated that—

the best results from its construction will not come until after the Alaska Central Railroad shall have been extended as far as Knik, at the head of the inlet, and until some further developments take place in the Kuskokwim and Innoko districts.

These conditions have, partially, at least, been fulfilled during the past year. The Alaska Central has been reorganized, through a receivership, and has extended its track about 20 miles during the last season, with plans, I understand, for further extension in the near future; and on the other hand the Innoko mining district, near the other, or Yukon, end of the proposed route, has become, during the late summer and fall, the objective point of one of the largest "stampedes" since the one to Fairbanks five years ago. The particular find which produced the excitement was made on a tributary of a small river flowing into the Innoko, hitherto almost unknown, even to old residents of the Territory, and given on one map as the Hydelotna, but commonly called the Iditarod.

Reports coming out at this time indicate that the movement is still in progress and that the "strike" is rich and of considerable extent. The natural outlet to the coast for this region is via the upper Kuskokwim Valley and over Rainy Pass to the head of Cook Inlet, and it is hoped that funds may be available for some work on the proposed trail next season.

There is a growing need for a continuation by land of the winter mail road below Fort Gibbon, that section of it as far down as Kaltag being now, for the most part, on the river ice. Such continuation would naturally be on the south side of the Yukon and could be carried via the Innoko, joining the Cook Inlet route from there to Kaltag. From the last-named place there exists a great need of a good wagon and sled road for both summer and winter travel to the coast of Bering Sea at Unalaklik or St. Michael. With the development of the Kuskokwim Valley there will come, also, the need of a road between that river and the Yukon. All these last-mentioned routes are important, as general lines of travel and communication are needed for the development of the Territory.

To provide for the necessary funds for carrying on the work in a systematic way in future, some further means will, it is thought, have to be devised, and some modifications made in the laws relating to road construction in Alaska. As heretofore explained, the special appropriation of last winter was for the purpose of completing the Valdez-Fairbanks route through for wheeled traffic in summer, and for the improvement and extension of certain other routes having value for military and postal uses, as well as for general travel, the work to extend over two seasons if necessary. The sum was sufficient for the purposes named, only for the extraordinary conditions of weather and consequent increased cost and loss by flood, as noted in the earlier part of this report. No further appropriation can

therefore be asked at the coming session unless the committee should, under circumstances, to approve a small emergency appropriation for the damage sustained through flood.

It is thought proper for me to state here that the road commission were in no way responsible for the movement inaugurated on the Pacific coast, in the interest of increased appropriations from the Treasury, of \$1,000,000 at the last session. This movement, as mentioned, was somewhat illadvised at that time, and resulted in some confusion in the minds of the members of the House of Representatives who were struck by the appropriation which had been asked for by the Secretary of War. To add to the confusion, the charge of the movement took the name "stampede," which to many persons meant that the further activity is expected along the same route, and, while the board can not fail to give its approval of its work, which evidently it is hoped that for the best interests of the Territory will be confined to such approval and to such recommendations instead of exhausted in the way of increased appropriations.

The liquor-license, trade, and occupation tax, amounting about \$110,000 a year to the wagon road fund, "Alaska fund." I recommend that this fund be used to include dredges, telegraph and telephone lines of business which were apparently there seems to exist no special reason for recommending that a flat tax be placed on the wagon road in addition to the present tax of 4 cents per mile. The tax is now obtained through the distribution of a certain sum to the road and trail fund, also, that a tax of \$5 per annum be placed on the claims not patented, and a small tax upon the copper mined in the Territory. It is believed that these taxes may be placed without becoming burdensome, and the resources of the Territory be thus made to contribute to the development.

In addition to the above, it is suggested that the mining law in Alaska be offered provisionally, may, if he so elect, pay into the "Alaska fund" a certain sum to the road and trail fund, and the work has frequently been discussed in the past, and brought before Congress in the form of a bill, but it has not found favor, for the reason that the provision is optional instead of optional. To the proposition I can see no possible objection. The more the owner of the claim, and if he shall be more benefited by contributing to the improvement of the road, to it he will avail himself of the provision, and the employment of labor will merely be the

the treeless and exposed sections along the Seward Peninsula, this staking setting of iron stakes with small metal

able to attempt any work on the winter of Cook Inlet, across the Alaskan Range Inlet, of which a reconnaissance was made in 1900. Reference to this was made in last year's report and stated that—

Work will not come until after the Alaska Central Road has far as Knik, at the head of the inlet, and until the line in the Kuskokwim and Innoko districts.

Work has, at least, been fulfilled during the winter. The Alaska Central has been reorganized, through a new route, and its track about 20 miles during the winter. The road, for further extension in the near future, and the Innoko mining district, near the proposed route, has become, during the winter, the objective point of one of the largest "stamping" parties five years ago. The particular excitement was made on a tributary of a stream in the Innoko, hitherto almost unknown, even on the maps, and given on one map as the Hyde River, and the Iditarod.

At this time indicate that the movement is the "strike" is rich and of considerable extent. The route to the coast for this region is via the road and over Rainy Pass to the head of Cook Inlet. Funds may be available for some work on the coast.

For a continuation by land of the winter route, that section of it as far down as Kaltag, on the river ice. Such continuation on the south side of the Yukon and could be made along the Cook Inlet route from there to the coast. In this place there exists a great need of a road for both summer and winter travel to the coast at St. Michael. With the development of the valley there will come, also, the need of a road to the Yukon. All these last-mentioned general lines of travel and communication are of the Territory.

It is necessary funds for carrying on the work in a winter. Some further means will, it is thought, be necessary. The modifications made in the laws relating to the Alaska. As heretofore explained, the special law was for the purpose of completing the road through for wheeled traffic in summer, and the extension of certain other routes having special uses, as well as for general travel, the winter seasons if necessary. The sum was sufficient, only for the extraordinary conditions of increased cost and loss by flood, as noted in the report. No further appropriation can

therefore be asked at the coming session of Congress through this channel unless the committee should consider it proper, under the circumstances, to approve a small emergency estimate to compensate for the damage sustained through floods.

It is thought proper for me to state here that the members of the Alaska road commission were in no way responsible for nor connected with the movement inaugurated on the Pacific coast last winter in the interest of increased appropriations from Congress and asking for \$1,000,000 at the last session. This movement, while well intentioned, was somewhat illadvised at that time, in my opinion, and resulted in some confusion in the minds of Members of the Senate and House of Representatives who were striving to put through the appropriation which had been asked for by the board and approved by the Secretary of War. To add to the confusion the committee in charge of the movement took the name of the "Alaska road committee," which to many persons meant the same as our board. Some further activity is expected along the same line the coming winter, and, while the board can not fail to appreciate the sentiment of approval of its work, which evidently lies behind the movement, it is hoped that for the best interests of that work the movement will be confined to such approval and to a support of the board's recommendations instead of exhausted in the effort to get separate or increased appropriations.

The liquor-license, trade, and occupation tax in Alaska has yielded about \$110,000 a year to the wagon road and trail portion of the "Alaska fund." I recommend that this tax law be amended to include dredges, telegraph and telephone lines, and some smaller lines of business which were apparently overlooked, but for which there seems to exist no special reason for exemption. It is further recommended that a flat tax be placed upon salmon canneries, in addition to the present tax of 4 cents per case, exemption from which tax is now obtained through the distribution of fry from hatcheries; also, that a tax of \$5 per annum be placed upon all quartz and placer claims not patented, and a small tax upon each ton of coal and copper mined in the Territory. It is believed that these additional taxes may be placed without becoming burdensome and the natural resources of the Territory be thus made to aid in its general development.

In addition to the above, it is suggested that an amendment to the mining law in Alaska be offered providing that any claim owner may, if he so elect, pay into the "Alaska fund," for the benefit of road and trail construction, the sum of \$100, which sum shall be in lieu of all assessment work, recorder's fees, and tax, as above provided, upon any claim for the current year. The proposition of paying a certain sum to the road and trail fund in lieu of assessment work has frequently been discussed in recent years, and has been brought before Congress in the form of a bill, but has not heretofore found favor, for the reason that the provision was made mandatory instead of optional. To the proposition in the form now suggested I can see no possible objection. The matter will rest entirely with the owner of the claim, and if he shall think his property will be more benefited by contributing to the improvement of roads leading to it he will avail himself of the provision, while the effect upon the employment of labor will merely be the transfer of a certain amount

of work from mines to roads and trails. It is believed that this provision will meet with general favor and will be productive of good results.

In the closing paragraph of my report of last year I stated that—

the time is approaching, it is thought, when the local roads in the different sections may be turned over for maintenance and extension to local authorities, leaving only the main trunk lines in the hands of the road commission—

and suggesting a local board of road supervisors to have charge in connection with the application of the per capita local-road law. Experience of the past season does not argue any nearer approach of the suggested change to the advantage of the Territory; rather the contrary. Good results from the operation of this local-road law have been obtained only where the board of road commissioners has voluntarily given assistance in the matter, furnishing overseers in some instances and supervising the work. The alternative to the suggestion of last year is for the board of road commissioners to designate the overseers in all cases and to supervise the expenditure of money and labor under this law, in connection with its other work, and I recommend the law be amended to this effect. There is little doubt that the best results and, I believe, the most satisfactory in nearly all cases, will be obtained by having the entire work under one direction. This should continue until such time as Congress shall decide to grant some form of local self-government to the Territory, including a general legislative body, which would naturally be expected to take charge of, and be responsible for, such local improvements.

Without expressing an opinion here as to when this might be done with advantage to the Territory it seems proper to state that until that time the development of the Territory along this particular line can be more systematically advanced, and the greatest good done to the whole people by having the work combined as above indicated.

Of equal importance with wagon-road construction in giving permanence and stability to the development of the Territory is the construction of one or more lines of railway. Reference to this subject has been made by me in former reports of the road commission, and several special reports and memoranda have been submitted to the Secretary of War concerning the progress made by various roads attempting or proposing to build in different sections of the Territory. The following quotations are made from one of these memoranda:

Wagon roads in certain places and pack and sled trails across the country are a necessity in the development of Alaska (and are considered elsewhere), whether railroads are constructed or not and will always be an aid through sections where the traffic is not sufficient to justify railroad construction, but it can no longer be doubted by those familiar with the District that the one great need is a rail connection between the interior of the District and an open port the year around.

The subject was resolved into two principal propositions:

1. Is there evidence at hand in the developments which have taken place in the interior of Alaska during recent years and in the present outlook to justify the belief that its mineral deposits are of an extent and value to give employment for an indefinite time and yield adequate returns, and are the conditions with respect to climate and soil such as to insure a permanent white population?
2. Are the difficulties and expense of transportation attendant upon the development of the resources of this interior country sufficiently great to justify the Government in giving support to railroad construction? \* \* \*

Evidence in support of the first proposition has been accumulating since the memorandum was submitted to such an extent that I think

the affirmative view will no longer be qu second proposition the statement then m stance; that the freight rates across the hibitive except for short distances, even roads as have been constructed; but even cost is the need for communication with travel and speedy transmission of the ma closed navigation, in order to make a b development of such a region and give enterprise.

Generally when this subject has been the past one or more representatives of s appeared before the committees in opp asserted that the said enterprise was prep Alaska without assistance from the Go have the impression that their (propose needed for the Territory's development. the progress of these various enterprises and into the situation as it exists to-day w little advance has been made toward the l so far as the needs of the country at large do not always lie along the lines, as heret enterprise, naturally seeking early and s to make investment; and such inquiry millions of dollars, drawn from investors in have been needlessly wasted through vari proper information in advance, conflicti of terminals and town sites, and through t promoters. This is not intended as a r now actively engaged in the work of co Territory, but it can scarcely be doubted in the event of any particular road being where it will be on a paying basis, will the gations of the road for which the traffic an must pay.

It would, therefore, in my opinion, be f would take the matter in hand and utiliz sary, to guarantee the interest on bonds o lines that will aid in the general develop interfering with, but giving aid rather; restrictions, to any bona fide private entc

The subject of railroad construction, wit is taken up to this extent here because with that of wagon-road construction. T and dealt with together, and if it should extend aid and give direction in railroad co then continued and increased aid should wagon roads, to the end that the public alternative against the high rates which r a continuation of the past methods of ra

The population of Alaska has not in predicted by many persons in the years gold excitement of the Yukon (Dawson) will the increase be rapid in the future.

s and trails. It is believed that this proposal favor and will be productive of good

of my report of last year I stated that—

ought, when the local roads in the different sections receive and extension to local authorities, leaving only of the road commission—

and of road supervisors to have charge in operation of the per capita local-road law. The Commission does not argue any nearer approach of the advantage of the Territory; rather the operation of this local-road law have the board of road commissioners has volunteered the matter, furnishing overseers in some of the work. The alternative to the suggestion of a board of road commissioners to designate and to supervise the expenditure of money in connection with its other work, and I concluded to this effect. There is little doubt I believe, the most satisfactory in nearly any way by having the entire work under one direction until such time as Congress shall decide upon self-government to the Territory, including which would naturally be expected to take care for, such local improvements.

In my opinion here as to when this might be done in the Territory it seems proper to state that until the development of the Territory along this particular line is advanced, and the greatest good done to the Territory by the work combined as above indicated.

The wagon-road construction in giving per capita aid to the development of the Territory is the best method of lines of railway. Reference to this subject in former reports of the road commission, and memoranda have been submitted to the Commission showing the progress made by various roads in different sections of the Territory. The following are made from one of these memoranda:

and pack and sled trails across the country are a great aid to Alaska (and are considered elsewhere), whether railroads will always be an aid through sections where the traffic is heavy, but it can no longer be doubted by the Commission that the one great need is a rail connection between the Territory to support the year around.

into two principal propositions:

the developments which have taken place in the Territory and in the present outlook to justify the belief in the extent and value to give employment for an indefinite period, and are the conditions with respect to climate and the present white population? The expense of transportation attendant upon the development of the Territory sufficiently great to justify the Government in the construction? \* \* \*

The first proposition has been accumulating and has been submitted to such an extent that I think

the affirmative view will no longer be questioned. In respect of the second proposition the statement then made is here repeated in substance; that the freight rates across the country are practically prohibitive except for short distances, even with the aid of such wagon roads as have been constructed; but even above the question of freight cost is the need for communication with the outside world, means of travel and speedy transmission of the mails during the long period of closed navigation, in order to make a beginning in the substantial development of such a region and give encouragement to private enterprise.

Generally when this subject has been brought before Congress in the past one or more representatives of some private enterprise have appeared before the committees in opposition, and have stoutly asserted that the said enterprise was prepared to build a railroad into Alaska without assistance from the Government, and seeming to have the impression that their (proposed) road was the only one needed for the Territory's development. An unbiased inquiry into the progress of these various enterprises during the last few years and into the situation as it exists to-day will show that comparatively little advance has been made toward the fulfillment of such assertions so far as the needs of the country at large are concerned, which needs do not always lie along the lines, as heretofore stated, where private enterprise, naturally seeking early and safe returns, is most likely to make investment; and such inquiry will also show that several millions of dollars, drawn from investors in different parts of the world, have been needlessly wasted through various causes, such as a lack of proper information in advance, conflicting local interests in respect of terminals and town sites, and through the selfish ends of ambitious promoters. This is not intended as a reflection upon any person now actively engaged in the work of constructing any road in the Territory, but it can scarcely be doubted that this former wastage, in the event of any particular road being put through to the point where it will be on a paying basis, will then become a part of the obligations of the road for which the traffic and resources of the Territory must pay.

It would, therefore, in my opinion, be far better if the Government would take the matter in hand and utilize these resources, if necessary, to guarantee the interest on bonds of actual construction along lines that will aid in the general development of the Territory; not interfering with, but giving aid rather, if desired, under proper restrictions, to any bona fide private enterprise.

The subject of railroad construction, with aid from the Government, is taken up to this extent here because of its intimate connection with that of wagon-road construction. The two should be considered and dealt with together, and if it should be definitely decided not to extend aid and give direction in railroad construction in the Territory, then continued and increased aid should be given to the building of wagon roads, to the end that the public may have some reasonable alternative against the high rates which must inevitably result from a continuation of the past methods of railroad promotion.

The population of Alaska has not increased as rapidly as was predicted by many persons in the years immediately following the gold excitement of the Yukon (Dawson) and Nome discoveries, nor will the increase be rapid in the future. The short season of summer

and the rigorous climate of winter, with the difficulties of land transportation, will make it slow of development. But that development will not be stayed altogether, except for brief periods and awaiting improved conditions.

The Territory has been widely advertised this year through the Alaska-Yukon Pacific Exposition and its resources and industrial progress well set forth in a number of small pamphlets prepared by the editor of the Alaska Yukon Magazine, along conservative lines and on the principle, apparently, that "the truth is good enough." That truth, epitomized, is that Alaska, as a factor in the natural resources and commercial development of our country, has come to stay.

Very respectfully,

W. P. RICHARDSON,  
Major Thirteenth Infantry,  
President of the Board.

OCTOBER 25, 1909.

#### REPORT OF THE ENGINEER OFFICER.

The season of 1909, except in the southwestern Alaska and Nome districts, has been exceptionally unfavorable for road construction. In the other sections of the Territory, where most of this season's work was done, conditions have been very unfavorable. The late spring, unusually heavy rains during the working season, and an early winter, together with the extremely high prices for supplies in the interior during the early part of the season, have retarded the work greatly and added considerably to the cost. In addition to this, high water in the Tanana River, made unusually difficult and expensive the shipment of supplies from Fairbanks to the upper Tanana and Delta valleys, where most of the work of the Fairbanks district was done.

As most of the supplies for the Valdez district were sent in over the snow the winter before, the only difficulty in transportation experienced in that district was in the shipment of such supplies as had to be sent in during the summer over the unusually muddy roads. These various causes have added considerably to the expenditure for the year, while decreasing greatly the amount of work accomplished compared with what should have been done in an ordinary season.

Labor conditions have been favorable as labor has been quite plentiful, except in the Valdez district, where the great demand for labor on account of the work done by the board, as well as by the Copper River and Alaska Central railroads, quickly exhausted the small supply of labor available. This difficulty was overcome, however, by the large number of men who came up from Seattle to find work during the summer. The same wages were paid this year as heretofore.

Methods of work and the kinds of roads and trails constructed have been described in previous reports and will not be repeated here. The only exception to the kind of roads heretofore constructed has been in the main trunk line from Valdez to Fairbanks, where, on account of limited funds and the difficulty of constructing a good wagon road over new ground in one season, light traffic and small loads only have been provided for, although a large part of the road is

now suitable for heavy traffic. On account of difficult conditions it was not possible to complete the road as contemplated. However, it is now available for traffic except for a distance of about 17 miles, which is, however, passable, and the crossing at the two glacier streams north of the Miller Hill is now made by use of bobsleds in winter all the way from Yonkers in connection with the sled roads down the Gibbon and Rampart.

Floods in the Tazlina River in August washed away 100 feet of the south bank of the Tazlina River and a part of the Tazlina bridge. This bridge will be repaired in winter, and it is expected to put bridges across the river also. It had been intended to put a bridge across the river at Gulkana, but lack of funds has compelled the board to postpone this project at present, and it has been decided at this point next spring to accommodate the crossing of the bridge can be constructed. The ferry service across the river has been found very difficult to manage and will be discontinued this winter. All the other streams not mentioned in this report going from Valdez to Fairbanks, have been navigable except the Tanana and Salchaket rivers where substantial ferries have been installed to the general satisfaction.

As the season's work has not yet been completed, it is not possible to give a complete report for the year. In the preparation of this report as much as possible details of the roads and trails given in previous reports are being omitted.

A description of the work done by the board during the year completed, is as follows:

#### SOUTHEASTERN ALASKA

This district includes that part of Alaska south of St. Elias. Mr. J. C. Hayes was acting superintendent of the district.

The construction of roads and trails in this district, as a whole, the most expensive in the entire Territory, on account of the mountainous character of the country, the great amount of rockwork to be removed, the bridges to be put in, and the underbrush to be cleared.

#### PORTAGE ROAD—PRINCE OF WALES ISLAND

This road with trail extensions is described in previous reports. Work during the present year consisted in the completion of the road and trail already completed and in the extension of the road to a point on Chomley Bay in the east end of the road to a point on Chomley Bay in the winter. About 1 mile of trail was constructed during the winter. The cost, including maintenance, was \$1,343.21.

#### JUNEAU-EAGLE CREEK TRAIL

For some time there has been great need for a trail between Juneau and Eagle Creek with a center of supply for this region.



of winter, with the difficulties of land transportation and development. But that development has been, except for brief periods and awaiting the spring, widely advertised this year through the extensive disposition and its resources and industrial capacity. A number of small pamphlets prepared by the Yukon Magazine, along conservative lines apparently, that "the truth is good enough." It is that Alaska, as a factor in the natural development of our country, has come to

W. P. RICHARDSON,  
Major Thirteenth Infantry,  
President of the Board.

#### THE ENGINEER OFFICER.

cept in the southwestern Alaska and Nome districts, generally unfavorable for road construction. In the Territory, where most of this season's work has been very unfavorable. The late season rains during the working season, and with the extremely high prices for supplies in the early part of the season, have retarded the progress considerably to the cost. In addition to the Tanana River, made unusually difficult and the lack of supplies from Fairbanks to the upper Tanana where most of the work of the Fairbanks

for the Valdez district were sent in over the winter, the only difficulty in transportation was in the shipment of such supplies as were needed in the summer over the unusually muddy roads. These have added considerably to the expense, while decreasing greatly the amount of work which with what should have been done in an

been favorable as labor has been quite scarce in the Valdez district, where the great demand for work done by the board, as well as by the Central railroads, quickly exhausted the available labor. This difficulty was overcome, however, by the men who came up from Seattle to find work. The same wages were paid this year as

of kinds of roads and trails constructed have been reported and will not be repeated here. The kind of roads heretofore constructed has been from Valdez to Fairbanks, where, on account of the difficulty of constructing a good road in one season, light traffic and small loads were carried, although a large part of the road is

now suitable for heavy traffic. On account of the exceptionally difficult conditions it was not possible to complete this road this year as contemplated. However, it is now available for light wagon traffic except for a distance of about 17 miles, most of which is, however, passable, and the crossing at the Gulkana River and the two glacier streams north of the Miller House, and is available for use of bobsleds in winter all the way from Valdez to Fairbanks, and, in connection with the sled roads down the Tanana River, to Fort Gibbon and Rampart.

Floods in the Tazlina River in August washed away about 180 feet of the south bank of the Tazlina River, carrying with it a small part of the Tazlina bridge. This bridge will be repaired the coming winter, and it is expected to put bridges across the glacier streams also. It had been intended to put a bridge across the Gulkana River at Gulkana, but lack of funds has compelled the abandonment of this project at present, and it has been decided to place a ferry at this point next spring to accommodate the traffic until such time as the bridge can be constructed. The ferry across Shaw Creek has been found very difficult to manage and will be replaced by a bridge this winter. All the other streams not readily fordable, crossed in going from Valdez to Fairbanks, have been provided with bridges except the Tanana and Salchaket rivers and Pile Driver Slough, where substantial ferries have been installed and appear to give general satisfaction.

As the season's work has not yet been completed, it is impossible to give a complete report for the year. In order to reduce the size of this report as much as possible details concerning the different roads and trails given in previous reports are, so far as practicable, omitted.

A description of the work done by the board this year, so far as completed, is as follows:

#### SOUTHEASTERN ALASKA.

This district includes that part of Alaska south and east of Mount St. Elias. Mr. J. C. Hayes was acting superintendent in charge of the district.

The construction of roads and trails in southeastern Alaska is, on the whole, the most expensive in the entire Territory on account of the mountainous character of the country, the extremely heavy rains, the great amount of rockwork to be done, the number of bridges to be put in, and the underbrush and fallen timber.

#### PORTAGE ROAD—PRINCE OF WALES ISLAND (NO. 1).

This road with trail extensions is described in the report for 1908. Work during the present year consisted in a few repairs to the road and trail already completed and in the extension of the trail at the east end of the road to a point on Chomly Sound free from ice in winter. About 1 mile of trail was constructed this year. The cost, including maintenance, was \$1,343.21.

#### JUNEAU-EAGLE CREEK TRAIL (NO. 2).

For some time there has been great need of a trail to connect the mines between Juneau and Eagle Creek with the city of Juneau, which is the center of supply for this region.

In the fall of 1908, after the annual report for that year had been submitted, \$200 was spent in repairing the bridge across Glacier River. This spring a trail was located leading from Juneau to Eagle Creek; a distance of 30 miles, by Mr. J. H. Watson, at a cost of \$684.80. The first 14 miles out from Juneau is passable for wagons, leaving 16 miles of trail construction.

Work done this year has consisted in the construction of a trail suitable for pack horses or single horse sleds. The trail was cut 6 feet wide, but all bridges were made 10 feet wide in clear to provide for future widening for the use of two-horse teams. Construction has been slow and costly on account of the extremely wet weather, so that it has not been possible to complete the work this year; 7.06 miles of trail were constructed at a cost of \$11,502.96. Lemon, Salmon, and Montana creeks were crossed by bridges 180 feet, 60 feet, and 95 feet long, respectively, and 17 small bridges were built of an average length of 40 feet. Two thousand six hundred and eighty-six feet of corduroy were laid and 1,100 feet of rockwork done.

HAINES-PLEASANT CAMP ROAD (NO. 3).

This road was described in the report for 1908. Work during the present year has consisted in maintenance and in improving the grades at Rocky Point and Sunshine, and in graveling muddy parts of the road.

In the fall of 1908, after the annual report had been submitted, a bridge was built across the Chilkat River at Wells, at a cost of \$8,620.08. This bridge consists of two 108-foot trusses with approaches 100 feet and 300 feet long. During the past summer this bridge was painted and some work done in filling piers and putting in braces. The total cost of work done on route No. 3 has not yet been reported to this office.

SITKA ROAD (NO. 41).

This road extends from Indian River eastward to the head of Jamestown Bay, a distance of 2.78 miles. It was constructed during the early part of the past season. The cost of construction was \$1,042.71. The road is 8 feet wide. Nine bridges were built with an average length of 30 feet.

VALDEZ DISTRICT.

Mr. J. H. Ingram is superintendent in charge of this district.

Road construction in this district is quite varied in character, comprising, as it does, some of the cheapest and some of the most expensive work in the Territory. The two mountain sections, through the Coast Range from Camp Comfort to Tonsina, and through the Alaskan Range from Paxsons to Casey's Cache, require a great deal of heavy rockwork and grading.

From Copper Center to Gulkana the road follows the benches of the Copper River Valley and is quite light. The conditions in other sections of road in this district are very similar to those in the Fairbanks district, described further on in this report. Supplies are hauled in over the snow in winter, as the cost of transportation in summer would be prohibitive, and under present conditions the

heavier articles could not be transported are needed from time to time and whose foreseen are carried in in summer.

VALDEZ-GULKANA ROAD (

This is the first section, 128 miles long road, and is the most important route in outlet all the year round for that part of Coast and Alaskan ranges east of the one meridian, and during the winter for that Range and west of Eagle, and to a great live stock for the interior in summer. This route all the year round.

During the last year 136,002 pounds of 2,480 pounds of freight and express were hundred and fifty head of cattle and 1,350 over it. About 2,500 people used this route out from the interior. The above figures, mates from data on hand and are probably the actual amounts.

Work during the present year has consisted the winter sled road into a wagon road, entirely new road were constructed. It is wagon road throughout its length, except Gulkana and Copper Center and about 6 miles and Tonsina. It can be used by bobsleds work done this year was \$120,782.22, including

The cost of the section from Valdez to T of 27 1/2 miles, was \$16,753.55. From Val about 11 miles, the grades of the Alaska H Yukon Railway were used, with the cost of the work done on this section consisted pile bridges over the glacier streams and work was done by contract. Two thousand thirteen and one-sixth linear feet of bridge contract price of \$3 per linear foot, making

The remainder of the work done in this section ing slides in Keystone Canyon and along Flats, general improvements from Dutch beyond Wortmans, and maintenance and grade leading from there to the summit.

From Thompson Pass to Saina, a distance done was mostly heavy side-hill grading at \$23,901.61 or \$2,390.16 per mile.

The cost of work from Saina to Beaver miles, was \$16,005.58, distributed as follows:

Location.....	
Clearing, 16 feet wide, 15,616 linear feet.....	
Grading, 19,015 linear feet.....	
Culverts, 212 linear feet.....	
Bridges, 641 linear feet.....	
Rock work, 2,300 linear feet.....	

Total.....

the annual report for that year had been  
ent in repairing the bridge across Glacier  
was located leading from Juneau to Eagle  
s, by Mr. J. H. Watson, at a cost of \$684.80.  
Juneau is passable for wagons, leaving 16

as consisted in the construction of a trail  
or single horse sleds. The trail was cut 6  
were made 10 feet wide in clear to provide  
the use of two-horse teams. Construction  
on account of the extremely wet weather,  
ossible to complete the work this year; 7.06  
ructed at a cost of \$11,502.96. Lemon,  
ecks were crossed by bridges 180 feet, 60  
spectively, and 17 small bridges were built  
40 feet. Two thousand six hundred and  
y were laid and 1,100 feet of rockwork done.

PLEASANT CAMP ROAD (NO. 3).

nd in the report for 1908. Work during the  
ed in maintenance and in improving the  
nd Sunshine, and in graveling muddy parts

er the annual report had been submitted,  
s the Chilkat River at Wells, at a cost of  
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VALDEZ DISTRICT.

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istrict are very similar to those in the  
ibed further on in this report. Supplies  
ow in winter, as the cost of transportation  
hibitive, and under present conditions the

heavier articles could not be transported. Only such supplies as  
are needed from time to time and whose need could not have been  
foreseen are carried in in summer.

VALDEZ-GULKANA ROAD (NO. 4).

This is the first section, 128 miles long, of the Valdez-Fairbanks  
road; and is the most important route in the Territory, as it is the  
outlet all the year round for that part of the Territory between the  
Coast and Alaskan ranges east of the one hundred and forty-seventh  
meridian, and during the winter for that part north of the Alaskan  
Range and west of Eagle, and to a great extent for persons and  
live stock for the interior in summer. There is a mail service over  
this route all the year round.

During the last year 136,002 pounds of mail and approximately  
2,480 pounds of freight and express were hauled over this route. Two  
hundred and fifty head of cattle and 1,350 head of sheep were driven  
over it. About 2,500 people used this route going into and coming  
out from the interior. The above figures, except for mail, are esti-  
mates from data on hand and are probably considerably less than  
the actual amounts.

Work during the present year has consisted largely in converting  
the winter sled road into a wagon road, although many miles of  
entirely new road were constructed. It is now available for use as a  
wagon road throughout its length, except about 1 mile between  
Gulkana and Copper Center and about 6 miles between Copper Center  
and Tonsina. It can be used by bobsleds throughout. The cost of  
work done this year was \$120,782.22, including location.

The cost of the section from Valdez to Thompson Pass, a distance  
of 27½ miles, was \$16,753.55. From Valdez to Keystone Canyon,  
about 11 miles, the grades of the Alaska Home Railway and Valdez-  
Yukon Railway were used, with the consent of the owners. Most  
of the work done on this section consisted in the construction of  
pile bridges over the glacier streams and the lake stream. This  
work was done by contract. Two thousand three hundred and  
thirteen and one-sixth linear feet of bridges were constructed at a  
contract price of \$3 per linear foot, making a total of \$6,939.50.

The remainder of the work done in this section consisted in remov-  
ing slides in Keystone Canyon and along the side hill at Dutch  
Flats, general improvements from Dutch Flats to about 2 miles  
beyond Wortmans, and maintenance and betterment of the side-hill  
grade leading from there to the summit.

From Thompson Pass to Saina, a distance of 10 miles, the work  
done was mostly heavy side-hill grading and rock work, at a cost of  
\$23,901.61 or \$2,390.16 per mile.

The cost of work from Saina to Beaver Dam, a distance of 8½  
miles, was \$16,005.58, distributed as follows:

Location.....	\$225.97
Clearing, 16 feet wide, 15,616 linear feet.....	1,273.85
Grading, 19,015 linear feet.....	6,715.36
Culverts, 212 linear feet.....	353.44
Bridges, 641 linear feet.....	4,719.89
Rock work, 2,300 linear feet.....	2,717.07
Total.....	16,005.58

The section from Beaver Dam to Teikhell, a distance of 10 miles cost \$17,030.43. The work done consisted mostly in clearing, side-hill grading, and rock work.

The section from Teikhell to Glacier House, a distance of 21 miles cost \$15,685.07. The work on this section was very similar to that in the preceding section.

The section from Glacier House to Willow Creek, a distance of 20 miles cost \$15,202.81. From Glacier House to Tonsina, the work was largely side-hill grading, along the Tonsina River. Between Tonsina and Willow Creek some side-hill grading was necessary, but the bulk of the work was over comparatively swampy ground with expensive grubbing and clearing. This section was not completed.

The cost of work between Willow Creek and Gulkana, a distance of 39 miles was \$15,288.67. Most of the work done was between Willow Creek and Copper Center an entirely new road being constructed over fairly soft ground for a distance of about 10 miles. The detailed cost was as follows:

Location.....	\$385.58
Clearing, 10 feet wide, 49,444 linear feet.....	4,217.03
Grading, 26,600 linear feet.....	4,029.96
Corduroy, 11,262, linear feet.....	3,355.26
Bridges and culverts, 1,987 linear feet.....	3,300.84
Total.....	15,288.67

Very little work was done between Copper Center and Gulkana. About 1 mile of this section is in very bad condition, but the remainder is quite good for wagon traffic at all times.

In addition to the amount given above, \$914.50 was spent on the Tazlina Bridge for temporary repairs on account of damage sustained by floods in the river, and to provide a means of crossing for foot passengers until the river freezes.

GULKANA-MILLER HOUSE ROAD (NO. 6).

This is the second section of the Valdez-Fairbanks road. Its length is 102 miles. It is the winter outlet for that part of Alaska north of the Alaskan Range and west of Eagle, and throughout the year for a considerable region on each side of the road. In addition it is largely used as an outlet from the interior in summer. It has the same mail service as route No. 4, except that there is no mail from June 1 to September 30.

During the last year approximately 131,000 pounds of mail and 450 tons of freight and express were hauled over this road, and about 215 head of cattle and 1,325 head of sheep were driven over it. About 1,700 persons used it going into or coming out from the interior. Most of the freight, express, live stock, and persons going over this route went on over route No. 5 to Fairbanks.

As in route No. 4, a large part of the work done on this route consisted in converting the winter sled road into a wagon road, although a great deal of entirely new road was constructed. It is now available for light wagon traffic, except for about 3 miles near Meiers Road House, and for bob sleds throughout. The cost of work done this year was \$80,273.71.

The section from Gulkana to Sour Dough, a distance of 22 miles, was mostly over a country covered with moss and scrubby timber,

the ground underneath being frozen. \$15,759.67.

From Sour Dough to 165 Mile Post, a tions were about the same as in the prev cost in this section was as follows:

Clearing, 10 feet wide, 63,935 linear feet.....	
Grading, 34,466 linear feet.....	
Corduroy, 9,104 linear feet.....	
Bridging, 3,187 linear feet.....	
Rockwork, 45 linear feet.....	
Total.....	

From 165 Mile Post to Paxsons, a dis was \$19,584.76. The conditions in this s in the two previous sections.

The entire road from about 10 miles n a distance of 54 miles, is over ground cov moss and scrubby spruce timber, the gro unknown depth. It is impossible to cons ground in a single year, for, as soon as the melts, and the road becomes practically until it is dried out no road can be const

The section between Paxsons and McC contains some ground similar to that in the bulk of the work was sidehill grading and considerable grading and rockwork i of the work was \$18,077.30, including loc

Between McCallum and Miller House, the road follows the Delta River through th the work done was sidehill grading and \$12,473.28. This was formerly the most winter route from Valdez to Fairbanks a of overflows on the river. The worst pa avoided.

The improvements on routes Nos. 4 reduced the cost of freight. The saving on the contract for shipping supplies fr telegraph stations in the interior as far as last year is \$7,896.33 on a shipment of 1

COPPER CENTER—CHITINA

This road is intended to connect the C mouth of the Chitina River with the V vicinity of Copper Center. As it is exp starts from the coast at Cordova, will rea River, its northernmost point on the Cop board desires to construct this road next by the following winter. A location wa main line near Copper Center as far as River, about 12 miles from the mouth of work was stopped by bad weather. Th location will be completed early next ye

er Dam to Teikhell, a distance of 10 miles  
work done consisted mostly in clearing, side-  
rk.

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ling, along the Tonsina River. Between  
k some side-hill grading was necessary, but  
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clearing. This section was not completed.  
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67. Most of the work done was between  
r Center an entirely new road being con-  
ground for a distance of about 10 miles. The  
ws:

.....	\$385.58
linear feet.....	4,217.03
.....	4,029.96
.....	3,355.26
ear feet.....	3,300.84
.....	15,288.67

done between Copper Center and Gulkana.  
section is in very bad condition, but the  
for wagon traffic at all times.  
ount given above, \$914.50 was spent on the  
rary repairs on account of damage sustained  
and to provide a means of crossing for foot  
er freezes.

ANA-MILLER HOUSE ROAD (NO. 6).

ection of the Valdez-Fairbanks road. Its  
is the winter outlet for that part of Alaska  
ange and west of Eagle, and throughout the  
egion on each side of the road. In addition  
outlet from the interior in summer. It has  
oute No. 4, except that there is no mail from

approximately 131,000 pounds of mail and  
xpress were hauled over this road, and about  
25 head of sheep were driven over it. About  
ing into or coming out from the interior.  
ress, live stock, and persons going over this  
No. 5 to Fairbanks.

arge part of the work done on this route con-  
winter sled road into a wagon road, although  
ew road was constructed. It is now availa-  
e, except for about 3 miles near Meiers Road  
s throughout. The cost of work done this

ana to Sour Dough, a distance of 22 miles,  
try covered with moss and scrubby timber,

the ground underneath being frozen. The cost of work done was  
\$15,759.67.

From Sour Dough to 165 Mile Post, a distance of 19 miles, condi-  
tions were about the same as in the previous section. The detailed  
cost in this section was as follows:

Clearing, 10 feet wide, 63,935 linear feet.....	\$4,494.40
Grading, 34,466 linear feet.....	7,165.00
Corduroy, 9,104 linear feet.....	1,335.60
Bridging, 3,187 linear feet.....	1,319.70
Rockwork, 45 linear feet.....	63.60
Total.....	14,378.30

From 165 Mile Post to Paxsons, a distance of 23 miles, the cost  
was \$19,584.76. The conditions in this section were similar to those  
in the two previous sections.

The entire road from about 10 miles north of Gulkana to Paxsons,  
a distance of 54 miles, is over ground covered with a heavy growth of  
moss and scrubby spruce timber, the ground itself being frozen to an  
unknown depth. It is impossible to construct a good road over such  
ground in a single year, for, as soon as the moss is stripped off, the ice  
melts, and the road becomes practically a canal filled with mud, and  
until it is dried out no road can be constructed.

The section between Paxsons and McCallum, a distance of 18 miles,  
contains some ground similar to that in the preceding section, but  
the bulk of the work was sidehill grading along the Gulkana River,  
and considerable grading and rockwork in the mountains. The cost  
of the work was \$18,077.30, including location.

Between McCallum and Miller House, a distance of 12 miles, the  
road follows the Delta River through the Alaskan Range. Most of  
the work done was sidehill grading and rockwork. The cost was  
\$12,473.28. This was formerly the most dangerous part of the whole  
winter route from Valdez to Fairbanks and Fort Gibbon on account  
of overflows on the river. The worst parts of the river can now be  
avoided.

The improvements on routes Nos. 4 and 6 have very materially  
reduced the cost of freight. The saving to the Government this year  
on the contract for shipping supplies from Valdez to the military  
telegraph stations in the interior as far as Paxsons as compared with  
last year is \$7,896.33 on a shipment of 132 tons.

COPPER CENTER—CHITINA SLED ROAD.

This road is intended to connect the Copper River Railroad at the  
mouth of the Chitina River with the Valdez-Fairbanks road in the  
vicinity of Copper Center. As it is expected that the railroad, which  
starts from the coast at Cordova, will reach the mouth of the Chitina  
River, its northermost point on the Copper River, next summer, the  
board desires to construct this road next year so as to be ready for use  
by the following winter. A location was made from a point on the  
main line near Copper Center as far as the mouth of the Tonsina  
River, about 12 miles from the mouth of the Chitina River, where the  
work was stopped by bad weather. The cost was \$1,153.83. The  
location will be completed early next year.



## FAIRBANKS DISTRICT.

Mr. John Zug is superintendent in charge of this district.

Road construction in the Tanana and upper Yukon valleys is the most expensive in Alaska except that in the southeastern district. The highest wages in the Territory are paid here, and the cost of supplies and transportation is greater than anywhere else. While the cost of construction of winter trails is not much in excess of that in other parts of the Territory, wagon-road construction is very expensive, because of the nature of the ground. The soil is generally ordinary loam or sometimes clay and is, as a rule, frozen, being covered with muck and a layer of moss, which prevents thawing. As soon as this moss is removed, the ice melts and the road quickly becomes impassable. Except where the road runs along the bank of a slough or stream which in itself furnishes good under drainage, it is necessary to dig deep and wide ditches to afford proper drainage, and many miles of road have to be corduroyed at great expense.

## FAIRBANKS-MILLER HOUSE ROAD (NO. 5).

This is part of the main overland route from Fairbanks to Valdez. It carries the winter mail for the whole of Alaska north of the Alaskan range and west of Eagle, in addition to a great deal of freight hauled in from the coast to the Tanana Valley principally in winter. It also furnishes a line of communication between Fairbanks and the different mining camps and homesteads along the upper Tanana and Delta valleys. About 1,500 tons of freight were hauled over this route the past year.

The length of the summer road from Fairbanks to Miller House by way of McCarty is 155 miles. A great deal of work has been done on it in past years, and a fairly good winter road constructed, which, for a considerable distance, could be used in summer by wagons. In winter the cut-off from Donnellys to Washburn, 55 miles long, is used, as it is 15 miles shorter than the summer route by way of McCarty.

Work this year has consisted almost entirely in converting this route into a wagon road, which would be available for light traffic in the summer and bobsleds in winter. On the winter cut-off between Donnellys and Washburn \$939 has been spent the present year in repairing a few bridges and in general maintenance.

During the present season, up to October 19, \$87,771.27 was expended in wagon-road construction. The total cost for the year has not yet been reported to this office, but will be about \$95,000. As this money has been expended partly in new construction, partly in improving wagon roads already in use, and partly in the converting of sled roads into wagon roads it is very difficult to give detailed cost of the different parts of the work. The unusually wet weather, extremely high cost of provisions during the early part of the season and the greater cost of transportation have greatly retarded the work on this route and increased its cost. In addition, high water in the Tanana River washed out some portions of the road already constructed.

It was found necessary to relocate the road between Fairbanks and the 15-mile post on the old road in order to get away entirely from the Tanana River. The first 10 miles of the new road was built over low

ground, rather marshy and with very little drainage. As corduroy was difficult to obtain, this road was constructed entirely of earth with high embankments and deep ditches. However, with the use of a specially constructed road machine this road was constructed at a cost considerably less than the usual amount for such roads. The cost per mile for this section was about \$1,650; \$13,941.37 was spent on the remaining 50 miles to Washburn. This work consisted in the corduroying of a few swampy places, in ditching, repairing of bridges, and removing a number of slides which had occurred.

From Washburn to Richardson, a distance of 13 miles, the cost of the work was \$13,397.14. A very large proportion of this section was over exceedingly bad ground requiring a great deal of corduroy, which had to be hauled some distance, adding considerably to the expense. Some of the worst ground on the entire road was found in this section.

In the 21 miles between Richardson and McCarty \$14,846.03 was expended. The work done consisted in the improvement of the route along Tenderfoot Creek and in the construction of practically a new road from Shaw Creek to McCarty. A great deal of corduroy was necessary in this section and numerous bridges were required, however timber was easy to obtain. A bridge will be constructed at Shaw Creek this winter to take the place of the ferry installed last year, but which was found to be unsatisfactory. The road from Tenderfoot to Shaw Creek goes over a hill with very steep grades. However, the road is in excellent shape and can be used for light loads for the present. It had been intended to construct a road around this hill the present year, but lack of funds has prevented.

At the Tanana River a ferry was installed running from the north bank across a subsidiary channel to an island in the river. A road was constructed across this island, a wide slough in the middle being bridged. At the south end of this road a ferry was installed, crossing the main river at McCarty. The towers of the ferry crossing the main river were made sufficiently high so that river steamboats could pass under the cable in extreme high water. The total cost of these ferries, including the road and bridge, was about \$4,000. The exact cost has not yet been reported.

In the section between McCarty and Donnellys, a distance of 36 miles, \$15,074.15 was expended. The first 18 miles out from McCarty consisted of light and inexpensive work. The remaining 18 miles were fairly heavy. The difficulty in obtaining timber for corduroy in the few places that could not be drained, and the bad weather often encountered at the Dome, made work on this portion somewhat slow and expensive.

It was not possible to complete this section of the route, as the heavy snow in the latter part of September compelled the cessation of work, with 7 miles remaining unfinished. However, it is possible for wagons to use this road now, as all provisions and supplies for road commission crews on the upper Delta were hauled over it by wagons the past summer.

The cost of work in the section between Donnellys and Miller House, a distance of 25 miles, was \$15,074.15. Work in this section was light as a good deal of the road was over gravel or over ground which was underlaid by gravel. A considerable portion of the winter

road was converted into a wagon road at a very slight cost. The two glacier streams just north of Miller House still remain to be bridged. These are probably the most dangerous streams to cross on the entire route. It is expected to place bridges over them the coming winter.

## FAIRBANKS LOCAL ROADS (NO. 7).

This system of roads is described in previous reports, and was practically completed last year. The only new work done this year was the construction of a branch road (No. 7H) from the Little Eldorado station, on the Tanana Valley Railroad, to claim No. 5, above Discovery, on Little Eldorado Creek. Its length is  $1\frac{1}{2}$  miles. About one-half of the construction work done on this road was done by the local road overseer. The cost of that portion built by the board was \$3,821.74. About 1,500 tons of freight have been hauled over this branch this year.

This road system was very well constructed, and has been in use for two or three years so that it was well packed down and in very good condition. In the fall of 1908, after the annual report had been submitted, route 7G was extended 1 mile to Gilmore and 2 miles of branch lines were constructed.

The cost of maintenance this year was slight. Part of the work of maintenance was done by the local road overseer. Work done by the board in maintenance amounted to \$1,209.50.

From 300 to 3,000 tons of freight were hauled over the different roads of this section during the past year, besides the mail for the various districts supplied by them and a great number of persons passing back and forth.

## RAMPART-BIG MINOOK ROAD (NO. 9).

Work on this route the present year has consisted in general repairs and the construction of a few bridges, the total cost being \$1,363.67. This road was described in the report for 1908, and the same arrangements were made with Mr. S. E. Heeter regarding labor, subsistence, and teams as was made last year.

## CLEARY-BIRCH CREEK SLED ROAD (NO. 16).

This road is described in the report for 1908. The only work done the past year was in maintenance, at a cost of \$200. Approximately 200 tons of freight were hauled over this road the past season. It is used for a weekly mail service during the winter, mail being hauled over this road from Fairbanks to supply Circle City, and connecting at that point with mail routes to Eagle and Caro.

## FAIRBANKS-HOT SPRINGS SLED ROAD (NO. 17).

This is part of the main overland mail route from Fairbanks to Fort Gibbon and on to Nome. It is 103.50 miles long. There is a weekly mail service over this road in October, November, April, and May, and twice a week from December to March, inclusive. It is estimated that 300 tons of freight were hauled over the road the past season. It was completed last year at a cost of \$14,244.94. This includes cost of location. Work done during the past season has consisted in improvements. Two thousand two hundred and

twenty-four dollars and ten cents has been expended to date, of which \$1,000 was used in the construction of a wagon road over that portion between Hot Springs Landing on the Tanana River and Hot Springs, a distance of 2 miles. In addition, \$1,000 was raised by the citizens of Hot Springs to assist in the construction of the wagon road.

## HOT SPRINGS-FORT GIBBON SLED ROAD (NO. 18).

This is a continuation, 56 miles long, of route No. 17, and has the same mail service as that route. About 800 tons of freight were hauled over this route the past season. Considerable work has been done on this road in former years. Work during the present season has consisted in various improvements at a cost of \$1,576 to date. The total cost of work done in former years was \$12,997.59, including surveys.

## HOT SPRINGS-SULLIVAN CREEK ROADS (NOS. 21 AND 22).

These roads are intended to connect the mines around Sullivan Creek with Hot Springs and the mouth of Hot Springs Slough. Some work was done on the road between the mouth of the slough and Sullivan Creek after the annual report had been submitted last year. Its cost was \$1,667.77. About 100 tons of freight were hauled over this portion of the road last season. This summer this route, together with another route from Hot Springs following in general the line of the winter trail to Fort Gibbon as far as Sullivan Creek, was surveyed by Mr. John Bernard at a cost of \$900, but no new construction or maintenance has been done on this road the present year.

## YUKON RIVER-CHANDLAR TRAIL (NO. 23).

The reconnaissance of this route was described in the report for 1908. The cost of the reconnaissance was \$1,371.85. An allotment has been made for the construction of a winter sled road, but construction work has not yet begun.

## FORT GIBBON-KOYUKUK TRAIL (NO. 35).

This trail was located last year by Mr. Fred Date at a cost of \$921.17. Its length is 169 miles. An allotment has been made the present season for the construction of that part of this trail from Fort Gibbon as far as Arctic City on the Koyukuk River, as the trail from that point on as far as Bettles requires no immediate improvement. The work required consists mostly in trail staking, as a great part of the trail is treeless and exposed to the wind, although some clearing and bridges will be necessary. There is a mail service over this route once a week in winter. Construction has not yet begun, but work will be done this fall or early in the winter.

## HOT SPRINGS-EUREKA ROAD (NO. 36).

This road was constructed in 1908, and a description appears in the report for that year. Its cost was \$7,191.83. Work done the present year has consisted in repairs, placing of corduroy in very wet spots, and general maintenance. The cost was \$249.55. It is estimated that 300 tons of freight were hauled over the road the past season.



## SALCHA-CARIBOU CREEK SLED ROAD (NO. 37).

This road is described in the report for 1908, but was completed to Caribou Creek, a distance of 45 miles, at a cost of \$8,166.98, after the annual report had been submitted. An allotment has been made for the improvement of this road during the present fall and winter, but this work has not yet been started. It is estimated that 400 tons of freight were hauled over the road the past season.

## BONNIFIELD ROAD (NO. 40).

The Bonnifield country, so called, lying to the north of the Alaskan Range, has a great extent of low-grade gold-bearing gravel and quartz, but very little mining has been done in this district so far, owing to the great expense of transportation. There have been numerous requests for the board to construct a road from Fairbanks to this district, or at least to locate a road, so that any work done by individual mine owners should be on a line to be continued later by the board. During the past summer a survey of this route was made by Mr. Arnt Greve, at a cost of \$1,226.78. This road would be 52 miles long, but the cost is prohibitive under present conditions. This district is, however, supplied by a winter sled road constructed by mine owners, which was surveyed and marked during the past summer by Mr. Greve.

## YUKON DISTRICT.

Mr. G. E. Pulham was acting superintendent in charge of this district. General conditions and methods of construction in this district are very similar to those in the Fairbanks district.

## EAGLE-FORTY-MILE ROAD (NO. 11).

This road is described in the annual report for 1908. During the present year the sled road was continued to the Forty-Mile River, 12 miles of new sled road being constructed. The cost of maintenance of the portion previously constructed was \$3,008.13, and of new construction \$4,971. This road is now completed and consists of a wagon road 17 miles long, beginning at Eagle and continuing by sled road for 30 miles to the terminus.

## CIRCLE-CENTRAL HOUSE ROAD (NO. 15).

This road, described in previous reports, was completed this year to within one-half mile of Central House, corduroy being hauled and placed along the road to complete this last half mile. Thirteen and one-half miles of new construction were completed this year, with the 20 miles previously constructed making a total length of 33½ miles. The cost of maintenance of previously constructed road was \$1,500 and of new construction \$24,589.34.

## NOME DISTRICT.

Mr. W. L. Goodwin is superintendent in charge of work in this district. With the consent of the board, Mr. Goodwin was appointed road overseer for the Nome precinct, and gave advice and assistance to the road overseers in the other precincts of his district. This arrangement has been entirely satisfactory, and has resulted in a

great deal of work being done with the local road tax. In the Nome precinct \$5,016 was collected in money, and, in addition to this, three hundred and fifty-two days' work was done by men working out their road tax. This money and labor from the road tax was all expended on local roads in the Nome precinct. Data are not at hand as to the extent of the work done by the local authorities in the other precincts of this district, but considerable money and labor have been expended largely under Mr. Goodwin's direction, thus assisting materially in the general road work of the district.

The greater part of the Seward Peninsula is without timber, except a small amount of brush along the streams. The ground, in general, is fairly good for road construction, being underlaid to a great extent by rock in place of gravel. For these reasons comparatively little work is necessary on winter trails except staking to mark the route, as the high winds very quickly obliterate all signs of travel; and road construction is generally quite cheap, as is also the maintenance, except in those portions which require corduroy. Corduroy is very expensive on account of the difficulty in obtaining timber, and is very difficult to maintain on account of the numerous tundra fires, which often burn up part of the corduroy.

## NOME-COUNCIL ROAD.

This includes routes Nos. 10, 10A, 8, and the Skookum Pass road, the Nome and Hastings Creek bridges, Port Safety and Bonanza River ferries, and the Bear River aerial tram, all described in previous reports. Construction along this route was completed in 1908, and work during the present year has consisted entirely in maintenance. During the present year \$506.50 was expended on route No. 10, \$8.50 on route No. 10A, \$603.72 on route No. 8, \$86.18 on the Nome River Bridge, and \$31 on the Hastings Creek Bridge, besides considerable work done with the local road tax. The high cost of maintenance on route No. 8 was due to the necessity of protecting the corduroy of this road from tundra fires and repairing the damage done by these fires. Some expense was incurred in the maintenance of the Fort Safety and Bonanza River ferries and the Skookum Pass road, but the amount has not yet been reported to this office.

On account of the great need for ferries and the inability of the traffic to pay for the running expenses an arrangement has been made by which the ferryman at Port Safety ferry is paid the difference between \$150 a month and his total collections during the open season, and the ferryman at Bonanza River the difference between \$125 a month and his total collections. The total amount so expended has not yet been reported to this office.

This route connects Nome with Fort Davis and the coast eastward as far as Solomon and from there to Council. Approximately 300 tons of freight were hauled over that portion of the road leading out from Nome last season, and approximately 150 tons over that portion between Solomon and Council. There is a weekly mail service by dog team in winter over route No. 10, and a biweekly mail service by stage in summer over route No. 8. In addition a great number of people used this route for travel all the year round.

The road between Nome and Fort Davis is of particular benefit to the garrison at Fort Davis, as it furnishes an excellent route of travel between that post and the city of Nome.

## NOME-DEXTER ROAD (NO. 13).

This, the main highway of the peninsula, extends from Nome to the adjacent mining camps and on toward the north; and, together with its branches, supplies most of the mining camps in the vicinity of Nome. Up to the end of last year the main line as far as Dexter, a distance of 8.52 miles, and 11.95 miles of branch roads were completed.

During the present year the main line was extended a distance of approximately 5 miles up the Nome River and about 4.85 miles of branch roads were constructed partly with road-commission funds and partly from the local road tax. One mile was constructed from local road-tax funds only.

The cost of maintenance of previously constructed road was \$5,122.74 in addition to a small amount from the local road tax. Of this amount \$2,776.79 was expended in repairing the first 3.29 miles out of Nome. The high cost of maintenance was due to the extremely heavy traffic during the spring and fall, cutting up the road while it was wet and the heavy frosts displacing and weakening the culverts, many of which had to be replaced or strengthened.

The cost of the extension of the main road was \$3,958.49, approximately \$791.70 per mile. The cost of the branch lines constructed was \$1,194.07, paid by the road commission in addition to the work done with the local road tax.

Approximately 4,000 tons of freight were hauled over the main line during the present season and from 100 to 2,000 tons over the various branches. In winter there is a weekly mail service each way over the main line by dog team.

## CANDLE-CANDLE CREEK ROAD (NO. 26).

This road was originally constructed in 1907. Last year \$150.47 was expended in maintenance. During the present year \$1,321.32 of road-commission funds and \$528 and one hundred and twenty-seven and one-half days' labor from the local road tax were expended in improvements and maintenance. It serves to supply the different mines along Candle Creek. Its length is about 9 miles. During the past year approximately 4,000 tons of freight were hauled over this road—3,500 tons in winter and 500 tons in summer. The work was begun June 4 and completed August 8 under the direction of Mr. Ward Estey, acting superintendent for the board and road overseer for the precinct.

## DEERING-IMMACHUK ROAD (NO. 27).

This road connects Deering with the tributaries of the Immachuk River and supplies the various mining camps along that river. It is also used by persons traveling from Deering to Nome. Approximately 600 tons of freight were hauled over the road during the past season. Its length is 22 miles. It was originally constructed in 1907 for a distance of 5 miles. During the present season the part previously constructed was improved and 17 miles of new road constructed. The cost this year was \$1,300 road-commission funds in addition to \$640 and two days' labor from the local road tax.

## ANVIL-GLACIER CREEK ROAD (NO. 31).

This road was constructed as far as Glacier Creek, a distance of 1 mile, in 1907. During the present year this road was extended up the Snake River a distance of about 5 miles. It serves to supply the mines along the Snake River and its tributaries. The cost of maintenance of the portion previously constructed was \$65.50. The cost of construction of the extension was \$3,360.33, or approximately \$672.07 per mile. The low cost of construction was due to the use of a road machine throughout the greater part of the road. Approximately 300 tons of freight were hauled over the road the past season.

## MOUTH OF CENTER CREEK ROAD.

This is a short road, about 1.5 miles long connecting Nome with the mouth of Center Creek. Some work had been done on this road previously by private parties. This year the road commission took charge of the work and the road was completed at a cost of \$295.25 road-commission funds and \$409.75 and thirty-six and one-half days' labor from the local road tax. It is estimated that 400 tons of freight were hauled over the road during the past season.

## SUBMARINE PAY STREAK ROAD.

This road connects Nome with the Submarine Pay Streak. It starts at the Sand Spit south of Snake River and goes to the westward, a distance of about 1 mile. It supplies a means of communication for the mines and other interests lying to the westward of Nome. Approximately 250 tons of freight were hauled over the road during the past season; \$144.49 road commission funds and \$421.50 and sixteen days' labor from the local road tax were expended in the construction. There is a weekly mail service over this road each way by dog team in winter.

Cripple River road (No. 32), Penny River road (No. 33), and the Wireless Station road (No. 34), all described in previous reports, have needed but slight maintenance this year. Two days' labor from the local road tax were worked out on the Cripple Creek road and two days' labor on the Penny River road, and \$31.84 road commission funds were expended in maintenance and repair on the Wireless Station road.

The Otter Creek Bridge, previously described, has required an expenditure of \$38.62 to repair injuries done by a washout.

The Tishou River ferry, constructed in 1907, has been remodeled during the past season at an expense of \$333.97, as it was found that the scow used was too deep for its length and was apt to upset if a heavy load were placed on one end.

## SINROCK RIVER FERRY.

This ferry was installed by the commission this spring at a cost of \$304.07. This ferry gives a means of crossing the Sinrock River for people coming to Nome from the westward. In addition to the above expense it has been found necessary to pay \$100 during the season to the ferryman.

## KALTAG-INNOKO TRAIL (NO. 39).

This trail extends from Kaltag, on the Yukon River, to the town of Ophir, in the Innoko mining district, a distance of about 120 miles. It is part of the proposed overland trail from Knik, on the Alaska Central Railroad, to Kaltag. It was constructed during October and November, 1908, by Mr. R. S. Giddings, foreman. The cost of construction was \$2,451.07. The ground was cleared and leveled off where necessary, a number of bridges were put in, and where timber was lacking the trail was staked.

## KALTAG-UNALAKLIK TRAIL (NO. 20).

This is part of the overland mail route from Fort Gibbon to Nome and of the proposed route from Seward through Knik and Kaltag to Nome. Its length is about 90 miles. It was improved in the fall and winter of 1908 after the annual report for that year had been submitted. The cost was \$1,574.55. The trail was cleared and staked, where necessary, and a number of bridges were put in. It has been improved the present fall by placing permanent iron stakes to mark it in exposed places, but the cost of this year's work has not yet been reported to this office.

## UNALAKLIK-ST. MICHAEL TRAIL.

This is the winter mail trail which supplies the military post of St. Michael and the residents of the town, together with the people along the line of the trail. It was improved the present year by clearing out and brushing, where necessary, and marking exposed parts of the trail with permanent iron stakes. Its length is 65 miles. The cost of this improvement has not yet been reported to this office.

## NOME-UNALAKLIK TRAIL (NO. 30).

This is the last section of the overland mail trail from the south coast of Alaska to Nome and the Seward Peninsula. It was improved in the fall of 1908, after the annual report had been submitted, at a cost of \$2,250.75. During the present year the land portions of this trail were cleared, where necessary, and exposed places flagged with permanent iron stakes. Seventy-five miles of trail were staked, the stakes being placed at an interval of from 90 to 100 feet. In winter this trail crosses Norton and Golofnin bays after the freeze up. It is necessary to put in temporary stakes across these bays every winter. The cost of construction this year has not yet been reported.

## FLAGGING WINTER TRAILS—SEWARD PENINSULA.

The necessity for this work and the methods employed in putting in temporary stakes have been described in previous reports and will not be repeated. Last winter 670 miles of trails were staked, at a cost of \$2,468.67.

On account of the continued expense and annoyance of staking these trails every year, it has been decided to put in permanent stakes so far as possible with the funds available. During Septem-

ber and October, 1907, the winter trail from Dahl Creek to Candle, 110 miles long, was marked for 85 miles with permanent iron stakes. The remaining portion of this trail was already marked by the posts of a telephone line. The stakes used consisted of an iron rod with a small iron flag riveted to it. They were placed from 150 to 500 feet apart.

Experience has shown that where the flags are riveted to the iron rods, the continued action of the wind tends to break them off. For this reason, all permanent iron stakes put in this year, both in the Seward Peninsula and in the other sections west of Kaltag, previously described, are so fixed that the flags revolve freely around the rods, thus avoiding the constant flapping in the wind.

This year the trail from Topkok Road House to Council, a distance of 32 miles, was staked with permanent stakes at intervals of 100 feet, but the cost has not yet been reported. On account of lack of funds, it will be necessary to mark the different local roads in the Nome Peninsula with temporary flags this year, as heretofore.

## SOUTHWESTERN ALASKA.

This district was in charge of Mr. Anton Eide, acting superintendent, who, with the consent of the board, acted as local road overseer for the precinct. The country is generally quite rough with a considerable growth of timber. However, there is not a great deal of underbrush and the soil is fairly good for road construction. For these reasons work in this district, is on the whole, cheaper than any other district in Alaska, except in the Seward Peninsula.

## HOPE-SUNRISE ROAD.

This road connects Mile 34, Alaska Central Railroad, with Sunrise and Hope, two small mining towns on Cook Inlet. Its length is 40 miles. During the year 1907, 37 miles of road were constructed. In the season of 1908, numerous improvements were made on the section between the railroad and Sunrise. The cost of improvements and maintenance was \$4,538. Work was completed after the annual report for that year had been submitted. This year \$788.20 was spent in improvements and repairs on the section between the railroad and Sunrise, and \$935.52 in completing that section between Sunrise and Hope and in maintaining the part already constructed.

This is the route for people traveling to the Sushitna country in winter and to a great extent in the summer, as steamboats in Cook Inlet are very irregular. There is a winter mail service over this route twice a month during the winter, by dog team. About 150 tons of freight were hauled over the road the past season. This is mostly for local use, as the greater part of the freight for this region is hauled in by steamboats in summer.

## GIRDWOOD-INDIAN CREEK TRAIL (NO. 38).

This trail connects Girdwood on the line of the Alaska Central Railroad with Indian Creek summit. It was completed last fall after the annual report had been submitted. Eighteen miles of trail were constructed at a cost of \$3,288.80. During the winter \$1,358.03

was spent in removing slides that had occurred and in extending the trail 24 miles to connect with Crow Creek trail, at a point 4 miles beyond the mouth of Eagle River. There is a mail service over this route once a month in winter.

## MOOSE PASS SLED ROAD (NO. 42).

This road connects Mile 29, Alaska Central Railroad, with Johnstown at the forks of Sixmile Creek. Its length is 14½ miles. It serves to supply the quartz mines in the Moose Pass and Quartz Creek mining districts. These mines have been greatly developed during the past few years and give great promise for the future. Construction was begun July 6 and finished September 7. The road was made 8 feet wide with easy grades and corduroy in a few places that could not be drained. The cost of construction was as follows:

17 acres grubbing and clearing, at \$137.86 per acre.....	\$2,343.52
2,570½ yards sidehill grading, at 40 cents per yard.....	1,028.20
250 feet corduroy, at 80 cents per foot.....	200.00
Total.....	3,571.72

Approximately 50 tons of freight were hauled over the road the past summer.

## RECONNOISSANCE, SUSHITNA RIVER AND TRIBUTARIES, AND COOK INLET COUNTRY.

About 1,000 men are engaged in mining and prospecting in this region. A number of valuable deposits of quartz and placer gold, copper, and coal have been found, and the indications are that the country is highly mineralized, but the high cost of transportation has limited the actual mining up to the present to the richer deposits of placer gold. In addition to its mineral wealth this is the most promising agricultural district in Alaska, but on account of lack of funds the board has been unable to do much work in this district heretofore.

In order to determine the best means of supplying transportation and to determine what roads and trails were needed, Mr. J. H. Watson, acting superintendent, was sent by the board, last summer, to make a thorough inspection of conditions. He left Paxsons on the Valdez-Fairbanks road July 26, arriving at Valdez October 21. Most of the more important camps were visited and general locations were made, and estimates prepared for the construction of roads or trails to supply them.

It is hoped that the board may be able to provide for the more important places in the near future. The cost of the reconnoissance was \$2,535.91.

Respectfully submitted,

F. A. POPE,  
*Captain, Corps of Engineers;*  
*Engineer Officer of the Board.*

VALDEZ, ALASKA, October 25, 1909.

## REPORT OF THE DISBURSING OFFICER.

This report covers vouchers received up to October 1, 1909.

Carried on hand date of last report, October 1, 1908:	
Appropriation "Military and post roads, bridges, and trails," acts March 2, 1907, and May 11, 1908.....	\$49,161.92
Alaska fund.....	858.46
Received from Treasurer United States:	
Appropriation "Military and post roads, bridges, and trails"—	
Act May 11, 1908.....	\$75,000.00
Act March 3, 1909.....	150,000.00
	225,000.00
Alaska fund.....	145,200.00
Correction vouchers:	
"Military and post roads, bridges, and trails," act May 11, 1908....	4.50
Alaska fund.....	8.33
Sales public properties, Alaska fund.....	982.10
Total.....	421,215.31
Disbursed as per tabulated statement below.....	383,617.65
Balance.....	37,597.66

The item "Offices" embraces salaries of superintendents of districts, permanent employees of the commission, expenses of members of commission, exchange and miscellaneous office expenses, Skagway, Valdez, and suboffices of Fairbanks and Nome.

	Construction and maintenance of military and post roads, bridges, and trails in the District of Alaska, acts of Congress approved Mar. 2, 1907, May 11, 1908, and Mar. 3, 1909.	Wagon road, bridges and trails, Alaska fund, act of Congress approved Jan. 27, 1905, as amended by an act approved May 14, 1906.	Total.
Officers.....	\$11,446.51	\$15,643.45	\$27,089.96
Route 1.....	2,333.03	1,359.56	3,692.59
Route 2.....	7,019.19	1,024.50	8,043.69
Route 3.....	1,857.92	980.08	2,838.00
Route 3A.....	16,920.39	518.50	17,438.89
Route 3B.....	6,004.75	656.15	6,660.90
Route 4A (1908).....	13,578.29	2,790.61	16,368.90
Route 4A.....	11,287.42	8,109.62	19,397.04
Route 4A, bridges (contract).....	6,339.50		6,339.50
Route 4B.....	7,353.39	5,853.39	13,206.78
Route 4C.....	1,296.83	5,596.42	6,893.25
Route 4D.....	1,486.59	5,637.03	7,124.22
Route 4E.....	508.37	5,486.40	5,994.77
Route 4F.....	486.88	5,441.19	5,928.07
Route 4G.....	358.35	6,535.41	6,893.76
Route 5.....	2,492.68	1,602.75	4,095.43
Route 5A.....	12,247.74	2,372.92	14,620.66
Route 5B.....	5,805.11	717.95	6,523.06
Route 5C.....		20.00	20.00
Route 5D.....	8,054.03	84.00	8,138.03
Route 5E.....	2,731.48	113.95	2,845.43
Route 5F.....	2,538.48	265.50	2,803.98
Route 6.....	6,799.84	770.90	7,570.74
Route 6A.....	11,310.98	3,197.97	14,508.95
Route 6B.....	352.51	8,770.01	9,122.52
Route 6C.....	352.51	6,841.99	7,194.50
Route 6D.....	352.51	7,195.50	7,548.01
Route 6E.....	550.90	6,266.68	6,817.58
Route 7A.....	42.16		42.16
Route 7B.....	269.00	81.18	350.18
Route 7C.....	44.00	6.18	50.18
Route 7D.....	3,360.05	339.20	3,699.25

	Construction and maintenance of military and post roads, bridges, and trails in the District of Alaska, acts of Congress approved Mar. 2, 1907, May 11, 1908, and Mar. 3, 1909.	Wagon road, bridges and trails, Alaska fund, act of Congress approved Jan. 27, 1905, as amended by an act approved May 14, 1906.	Total.
Route 7E.....	\$1,814.20		\$1,814.20
Route 7F.....	20.00		20.00
Route 7G.....	935.32	\$206.17	1,141.49
Route 7H.....	3,029.07	30.00	3,059.07
Route 8.....	772.59	566.43	1,339.02
Route 9.....	1,322.25		1,322.25
Route 10.....		506.50	506.50
Route 10A.....		8.50	8.50
Route 11.....	7,177.40	161.40	7,338.80
Route 11D.....	1,228.92	991.00	2,219.92
Route 12.....	3,347.34	435.63	3,782.97
Route 13.....	10.65	19.20	29.85
Route 13A.....	387.24	2,357.38	2,744.62
Route 13B.....	5.00	5.00	10.00
Route 13C.....	245.00	328.43	573.43
Route 13D.....	217.34	14.50	231.84
Route 13E.....	67.81	14.50	82.31
Route 13F.....	20.50	392.87	413.37
Route 13G.....	6.25	238.75	245.00
Route 13H.....	191.03	611.63	802.66
Route 13I.....	3,922.29	17.00	3,939.29
Route 15.....	510.10	1,064.18	1,574.28
Route 15A.....	2,289.15	1,350.85	3,640.00
Route 15B.....	13,260.47	1,408.09	14,668.56
Route 16.....	1,800.08		1,800.08
Route 17.....	3,798.35	554.00	4,352.35
Route 18.....	2,247.48	2,216.31	4,463.79
Route 20.....	1,321.15	101.50	1,422.65
Route 22.....	655.27	1,012.50	1,667.77
Route 23.....	246.85		246.85
Route 26.....	875.42	90.90	966.32
Route 27.....	1,300.00		1,300.00
Route 30.....	1,905.35	433.00	2,338.35
Route 31.....	65.50		65.50
Route 31A.....	3,252.43	107.90	3,360.33
Route 33.....	18.00		18.00
Route 34.....	10.75	31.84	42.59
Route 35.....		921.17	921.17
Route 36.....	6,524.28	95.30	6,619.58
Route 37.....	1,365.57	6,444.30	7,809.87
Route 38.....	3,179.14	1,467.69	4,646.83
Route 39.....		2,447.07	2,447.07
Route 41.....	1,050.21	.75	1,050.96
Bessie-Dry Creek.....		70.50	70.50
Drv Creek-Newton.....	20.34	204.29	224.63
Submarine-Pay Streak.....		144.49	144.49
Grass Gulch.....	778.25	8.50	786.75
Center Creek construction.....	103.69		103.65
Mouth Center Creek construction.....	303.75		303.75
Canyon Creek Bridge.....		287.50	287.50
Otter Creek Bridge.....	18.62	20.00	38.62
Bonanza Ferry.....		78.75	78.75
Hastings Creek Bridge.....		31.00	31.00
Nome River Bridge.....	638.68	30.92	669.60
Tishou Ferry.....	112.11	194.86	306.97
Sitka Bridge.....		12.00	12.00
Bear River tram.....	25.00		25.00
Chilkat Bridge.....	8,308.72	384.36	8,693.08
Port Safety Ferry.....	569.00	90.25	659.25
Sinrock Ferry.....	240.00	8.07	248.07
Tazlina Bridge.....	5.00	6.00	11.00
Innoko reconnaissance.....	21.00		21.00
Flagging trails.....		2,100.67	2,100.67
Chitna-Copper Center survey.....	57.40		57.40
Wintering stock.....	7,365.98	9,141.95	16,507.93
Expense, supervision and field inspection.....	1,877.53	3,463.41	5,340.94
Total.....	236,413.30	147,204.35	383,617.65

## Distribution of expenditures.

## Offices:

Salaries.....	\$19,514.78
Instruments.....	172.50
Stationery and fixtures.....	996.01
Fuel and lights.....	676.75
Rents.....	1,444.36
Exchange.....	973.19
Telegraph and telephone.....	552.51
Freight, dray and express.....	553.28
Miscellaneous.....	2,206.58
Total.....	27,089.92

## Field work:

Wintering stock.....	16,507.93
Survey.....	7,739.75
Labor.....	144,233.17
Subsistence.....	47,058.09
Transportation.....	18,030.09
Purchase of animals.....	15,570.00
Hire of animals.....	12,011.08
Forage, veterinary supplies, and care of stock.....	19,232.18
Tools, wagon and pack equipment.....	12,217.11
Construction material.....	19,989.13
Camp equipment.....	3,586.75
Repairs, equipment, horseshoeing.....	1,867.62
Construction, contracts and agreements.....	33,143.89
Expense, supervision and field inspection.....	5,340.94
Total.....	356,527.73

Respectfully submitted.

SAM. C. ORCHARD,  
First Lieutenant, Third Infantry,  
Disbursing Officer of the Board.

REPORT OF THE  
Board of Road Commissioners  
for Alaska

1910



WASHINGTON  
GOVERNMENT PRINTING OFFICE

1910

## SOUTHWESTERN ALASKA.

This district was in charge of Mr. Anton Eide, acting superintendent. As Mr. Eide was absent during a large part of the summer, actual charge of the work was under Mr. A. E. Anderson, foreman.

*Mile 34, Alaska Northern Railroad-Hope road (No. 12).*—Work on this route the past year has consisted entirely in maintenance, at a cost of \$826.39.

*Mile 29, Alaska Northern Railroad-Moose Pass road (No. 24).*—Work on this route the past season has consisted entirely in maintenance, at a cost of \$1,328.21.

*Girdwood-Knik trail (No. 19).*—This is a winter trail connecting the Alaska Northern Railroad with the upper Cook Inlet country and the Susitna basin. This trail was maintained entirely by the local road tax last winter. The board has allotted \$2,300 for general improvement and maintenance the coming winter.

*Kahiltna bridge.*—This bridge is intended to furnish a means for crossing the Kahiltna River for travel from the Cache Creek mining district to McDougal on the Yentna River. When completed it will consist of three spans 75 feet long, with approaches. The past season \$6,729.88 was expended for the purchase and shipment of supplies and in getting out timber. The scarcity of good timber in this region added greatly to the cost. It is intended to complete this bridge this winter.

*Willow Creek reconnaissance.*—Near the headwaters of Willow Creek, a tributary of the Susitna River, about 40 miles north of Knik, some valuable deposits of gold quartz have been discovered and considerable work has been done in development of what gives promise to be a valuable mining district. The board was unable, on account of lack of funds, to construct any roads in this district this year. Mr. James H. Watson, superintendent, was sent to make a reconnaissance and location of a winter sled road from Knik to the mines on Willow Creek. The cost was \$257.75.

*Kuskokwim-Iditarod reconnaissance.*—On account of the growing importance of the new mining district of the Iditarod, the board determined to investigate the best means of communication for this region, both with the Yukon and Kuskokwim rivers, and with the Alaska Northern Railroad running north from Seward. Mr. Anton Eide, acting superintendent, was sent to make a thorough inspection of conditions in the Iditarod and Innoko mining districts and of the means of transportation. Mr. Eide left Seward June 20, arriving at Iditarod City August 5. Most of the important camps were visited and general locations made for the construction of roads or trails to supply them. The total cost of the reconnaissance has not yet been reported to the board, but was approximately \$900.

No work was done by the board on the following routes, their maintenance being left entirely to the local road tax. Any charges that may appear against these routes in the statement of disbursements are for work done last year.

Rampart-Big Minook road (No. 9).  
Seward-Bear Lake road (No. 10).  
Eagle-Forty-Mile roads (No. 11).  
Sitka road (No. 14).  
Deering-Inmachuk road (No. 27).  
Dahl Creek-Candle trail (No. 28).  
Fairbanks-Bonnifield survey.  
Susitna reconnaissance.

## STATEMENT OF RECEIPTS AND DISBURSEMENTS.

This report covers vouchers received up to October 1, 1910:

Balance on hand Oct. 1, 1909:	
Appropriation "Military and post roads, bridges, and trails" (act of Mar. 3, 1909).....	\$37,491.45
Alaska fund.....	192.97
Received from Treasurer United States:	
Appropriation "Military and post roads, bridges, and trails" (act of Mar. 3, 1909).....	200,000.00
Alaska fund.....	125,000.00
Correction vouchers:	
"Military and post roads, bridges, and trails" (act of Mar. 3, 1909).....	7.05
Alaska fund.....	5.27
Sales, property, Alaska fund.....	12,775.40
Total.....	\$75,472.14
Disbursed as per tabulated statement below.....	\$40,396.79
Balance.....	35,075.35

*Expenditures in detail.*

	Construction and maintenance of military and post roads, bridges, and trails. <sup>1</sup>	Wagon roads, bridges, and trails, Alaska fund. <sup>2</sup>	Total.
Offices.....	\$6,163.80	\$8,207.34	\$14,371.14
Route 2.....	4,934.48	4,395.21	9,329.69
Route 3.....	2,000.12	1,186.95	3,187.07
Route 4A.....	925.00	80.50	1,005.50
Route 4B.....	46,708.62	7,300.51	54,009.13
Route 4C.....	20,022.78	2,981.21	23,003.99
Route 4D.....	9,205.19	5,747.75	14,952.94
Route 4E.....	15,281.54	4,052.37	19,333.91
Route 4F.....	9,297.12	4,876.50	14,173.62
Route 4G.....	15,021.12	5,485.75	20,506.87
Route 4H.....	30,899.28	18,091.67	48,990.95
Route 4I.....	9,825.90	2,350.40	12,176.30
Route 4J.....	8,597.55	284.48	8,882.03
Route 4K.....	16,166.73	1,446.44	17,613.17
Route 4, Tazlina bridge.....	1,519.87	12,612.60	14,132.47
Route 5.....	3,550.60	246.54	3,797.14

<sup>1</sup> Act of Congress approved Mar. 3, 1909.

<sup>2</sup> Act of Congress approved Jan. 27, 1905, as amended by an act approved May 14, 1906.

*Expenditures in detail—Continued.*

	Construction and maintenance of military and post roads, bridges, and trails.	Wagon roads, bridges, and trails, Alaska fund.	Total.
Route 6A.....	\$2,251.42	\$5,380.79	\$7,632.21
Route 6B.....	3.12	130.12	133.24
Route 7D.....		20.00	20.00
Route 7G.....	853.75	880.25	1,734.00
Route 7H.....	717.17	3.00	720.17
Route 8.....	2,965.24	1,744.72	4,709.96
Route 11B.....	5,765.28		5,765.28
Route 12.....	1,689.27	34.45	1,723.72
Route 13A.....	96.06	804.37	900.43
Route 13B.....	40.00	15.25	55.25
Route 13C.....	50.00	74.75	124.75
Route 13D.....	50.00	5.50	55.50
Route 13E.....	10.00	5.00	15.00
Route 13F.....		14.10	14.10
Route 13G.....	63.50	10.00	73.50
Route 13H.....	29.50	38.75	68.25
Route 13I.....	560.22	10.00	570.22
Route 13J.....		83.50	83.50
Route 14.....	59.00	13.00	72.00
Route 15.....	7,540.10		7,540.10
Route 16.....	139.70	46.00	185.70
Route 18.....	1,577.65	1,171.42	2,749.07
Route 19.....	133.00		133.00
Route 21.....	2,161.64	440.99	2,602.63
Route 23.....	190.25	789.62	979.87
Route 24.....	3,518.57	53.15	3,571.72
Route 25D.....	29.75	10.00	39.75
Route 25E.....		44.75	44.75
Route 25F.....		22.00	22.00
Route 25G.....	160.18		160.18
Route 25H.....		643.49	643.49
Route 25, Tishon ferry.....		71.00	71.00
Route 25, Sinrock ferry.....		69.27	69.27
Route 26.....		876.10	876.10
Route 27.....		15.00	15.00
Route 29.....	1,505.74	1,312.09	2,817.83
Route 30.....	259.59		259.59
Route 31.....	150.00		150.00
Flagging trails.....	291.00	1,632.45	1,923.45
Kahiltna bridge.....		6,538.04	6,538.04
Fairbanks-Bonnifield survey.....	1,236.78		1,236.78
Susitna reconnaissance.....	3,281.32	133.80	3,415.12
Kuskokwim-Iditarod reconnaissance.....		157.60	157.60
Willow Creek reconnaissance.....		257.75	257.75
Total.....	237,498.50	102,898.29	340,396.79

*Distribution of expenditures.*

Offices:	
Salaries.....	\$8,895.68
Stationery and fixtures.....	637.17
Fuel and lights.....	561.70
Rents.....	1,140.50
Travel expense, members of board and superintendents, general inspection.....	1,954.65
Telegraph and telephone.....	224.37
Freight, dray, and express.....	58.15
Miscellaneous.....	898.92
	\$14,371.14
Field work:	
Survey.....	9,400.06
Labor.....	224,852.28
Subsistence.....	38,779.19
Transportation and travel expense.....	5,607.29

Field work—Continued.

Hire of animals.....	\$6,422.72
Forage, veterinary supplies and care of stock.....	24,800.73
Tools, wagons, harness, pack equipment, boats.....	4,582.55
Material, construction.....	6,551.47
Camp equipment.....	1,262.74
Repairs, equipment, horse shoeing, exchange, and miscellaneous.....	3,766.62
	\$326,025.65
Total.....	340,396.79

Respectfully submitted.

W. P. RICHARDSON,  
Major, Thirteenth Infantry, President.

F. A. POPE,  
Captain, Corps of Engineers, Engineer Officer.

SAM. C. ORCHARD,  
First Lieutenant, Third Infantry, Disbursing Officer.

VALDEZ, ALASKA, October 1, 1910.



No 17803

REPORT OF THE  
Board of Road Commissioners  
for Alaska

1910



WASHINGTON  
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1910

*Fort Gibbon-Koyukuk trail (No. 29).*—This trail was completed last winter after the annual report for 1909 had been submitted. Two thousand eight hundred and seventeen dollars and eighty-three cents was expended in construction. It is 109 miles long. An allotment of \$200 has been made for maintenance the coming winter.

*Salcha-Caribou Creek road (No. 31).*—One hundred and fifty dollars was expended in maintenance on this road the last winter. No money has been expended during the present summer.

*Fairbanks-Beaver Survey.*—This route is intended to connect Fairbanks with the town of Beaver on the Yukon River, the starting point of the Yukon River-Chandler road. An allotment of \$2,500 has been made for a location and survey, but no work has as yet been done.

#### IDITAROD SUBDISTRICT.

This subdistrict was under the direction of Mr. Zug. Mr. A. E. Light, the road overseer for the district, had immediate charge of the work. An allotment of \$7,500 was made by the board to supplement the funds collected from the local road tax.

*Dikeman-Iditarod City sled road (No. 32).*—This road is intended to connect Dikeman, which is at the head of navigation in ordinary stages of water on the Iditarod River and therefore the supply point for the district, with Iditarod City, the principal town and nearest point to the producing creeks. It was located by Mr. L. S. Robe, Mr. Light having charge of construction. The total distance is about 30 miles. Work was begun about September 1, but no report has been received to date.

*Iditarod City-Flat Creek road (No. 33A).*—This wagon road is intended to connect Iditarod City with the mines on Flat Creek. It was located by Mr. Zug. Its length, when completed, will be about 7 miles. It has been brushed out for the entire distance and about 2 miles of the road completed. The cost was \$2,600 in addition to the local road tax.

*Otter City-Discovery towpath (No. 33B).*—Supplies are carried from Otter City to the mines on Otter Creek by scows hauled up the river by horses. This towpath is intended to facilitate this work by avoiding the necessity for horses following up the creek. Its length is about 17 miles. It was completed in July at a cost of \$446.

#### NOME DISTRICT.

Mr. W. L. Goodwin is superintendent in charge of this district. With the consent of the board Mr. Goodwin was appointed road overseer for the Nome precinct and gave advice to the road overseers of the other precincts in his district. Mr. Goodwin being absent during the winter, Lieut. T. W. Hammond, Twenty-second Infantry, took charge of the work for the board during his absence.

*Nome-Council road (No. 8).*—This includes the summer route from Nome through Solomon to Council and the winter route through Topkok to Council and on to Candle. Expenditures for the past year were \$49 for a reconnaissance of the winter route, and \$1,300 for new construction on the winter route, and \$1,300 for maintenance on the summer route. The mail service over this route consists of 1,000 pounds twice a week during the winter between Topkok and Nome in addition to the mail service between Council and Candle. Approximately 1,200 tons of freight were hauled over this route the past season.

*Nome-Dexter road (No. 13).*—This road with its winter route was practically completed last year. The only new work consisted in the extension of the Dry Creek-Newton road one-tenth mile along Newton Gulch, at a cost of \$84.50. \$1,828.87 was expended in maintenance. Twelve tons of freight were hauled over this road during the past season. An increase of tonnage is due to the small railroad running between Newton and Nome not being in operation the past season.

*Kaltag-Topkok trail (No. 18).*—This is part of the mail trail between Fairbanks and Nome. This trail was improved by the board the past winter, \$2,460.75 being expended for general improvement of the trail and marking exposed places with permanent iron stakes. The mail service over this trail consists of 1,000 pounds twice a week during the winter.

*Knik-Kaltag trail (No. 20).*—This is the proposed mail trail from Knik Arm, Cook Inlet, to the Iditarod district. There has been no expenditure on this route the past season. \$10,000 has been allotted by the board for work to be begun in the month of November.

*Unalaklik-St. Michael trail (No. 21).*—This trail was improved by the board the past winter and iron stakes were used for marking the exposed places. This work was, however, not completed. Four hundred and forty dollars and ninety cents was expended in new construction.

*Nome local roads (No. 25).*—This is a system of roads with bridges in the vicinity of Nome. During the past season a new wagon road was constructed, at a cost of \$1,480. \$28.25 was expended on a reconnaissance from Nome to Teller, and \$814.91 for maintenance.

*Candle-Candle Creek road (No. 26).*—Work on this road the past season consisted entirely in maintenance, at a cost of \$1,923.45.

*Flagging trails, Seward Peninsula.*—This work has been reported in previous reports. In the winter of 1909-10, 492 miles of trails were flagged at a cost of \$1,923.45.