

Board of Road
Commissioners for
Alaska, Report upon
the Construction and
Maintenance of Military
and Post Roads, Bridges
and Trails, Alaska
(Washington, D. C.,
Government Printing
Office, 1905), p. 20.

a railroad from Valdez, also that the Alaska Central road from Resurrection Bay has advanced some fifty miles toward the interior. The question has already been brought before the Board of giving assistance in the construction of a trail from the terminus of this road to the Tanana but the matter is held in abeyance till further developments take place. The claim may be advanced that this company (Alaska Central) is expending a large sum of money and therefore should be supported in its effort to open up the country, but the Board feels, and the statement is here made without any prejudice whatsoever, that the previous expenditures by the Government of several hundred thousand dollars in trail and telegraph construction and mail service via Valdez, with the present tide of travel in that direction, justify its action in giving such assistance as was possible to that route. **The newly discovered placer district on the upper Kantishna gives promise of considerable richness, and, lying over toward the route proposed by the Alaska Central, it may turn a portion of the travel that way. This district is to the Southwestward of Fairbanks, near the base of Mt. McKinley, and was reached during the open season by going down the Tanana one hundred and fifteen or one hundred and twenty miles to the mouth of the Kantishna, and up that stream and tributaries about one hundred miles more. It is said that the district can be reached in about ninety miles across the country, and the construction of a winter trail will probably be petitioned next season.**

In addition to the above described roads and trails the following are much needed for the development of the region, and are embraced in the plan of work proposed by the Commission to be taken up as rapidly as funds will permit; trail, sled in winter and pack in summer, from the Fairbanks diggings, Cleary Creek, to Rampart Diggings, Glenn Gulch, with wagon road from there to Rampart, port on the Yukon; trail from point of the Tanana below Fairbanks near mouth of the Tolovana to Glenn, (this last along a proposed new section of telegraph con-

Report upon the construction and
maintenance of military and post
roads, bridges and trails, Alaska

Board of Road Commissioners for Alaska ✓

1906

trail was very considerable in spite of the conditions prevailing, though for many days in December and January travel was well nigh impossible, owing to the severe cold. The temperature in January ranged from 55 to 65 degrees below zero Fahrenheit, for days at a time, and was seldom less than 40 degrees below during these two months. No accurate figures as to the number of people and the quantity of freight passing over the trail are obtainable. Probably 500 people went out from Fairbanks and vicinity during the winter and probably 1500 came in. Freight and express matter probably aggregated somewhere from 300 to 500 tons. The mail service was spasmodic and irregular; the poor service being due in part to severe weather and in part to the poor facilities along the route for the proper care of the animals.

Some of the mails received consisted of only a few pounds; others were bunched together sometimes accumulating in quantity at way points. The mail service is naturally dependent to a great extent on the conditions of the trail, every improvement along the route rendering quicker and safer service possible."

Upon the work of trail flagging on the Seward Peninsula the following quotations from the report of the Superintendent of that district will, it is thought, be of interest:

"Under oral, written and wired instructions, I began on November 16th the flagging of the main traveled trails from Nome to the outlying districts and for this purpose the Commission allotted \$1500.

In this district where there is no tree, stone or bush to mark the trail or relieve the monotony of the comparatively unbroken tundra, and where winter travel is extremely hazardous,

the innovation of flagging the trails were watched and appreciated with lively interest by the traveling public and commented upon freely from day to day by the newspapers. For the purpose a 7-dog team and 2 assistants were used and flags put up at intervals of from 50 to 150' continuously, depending on the character of the country and necessity, and for the purpose lath were used with turkey red calico flags 5" x 7", sewed for the lath to slip through them and then tacked on to lath. Owing to the varying snow condition, it is deemed by me impracticable to permanently flag the trails or erect suitable posts marking them, as the drifts and overflows on the rivers largely regulate the travel and while miles of telephone and telegraph poles mark well certain parts of the trail, they are not generally followed, as trails are ordinarily broken during clear weather and if not marked closely, cannot and will not be followed continuously. Also the flagging method is deemed efficient and inexpensive and in line with what the people of this open plain are entitled to. Once a line of flags is broken in its continuity, the traveler is at the mercy of the elements, and so great has been the respect to the Road Commission flags that each one is guarded and maintained by the traveler, and when about to be drifted over is elevated to its proper place. 110 miles of the Kaltag-Nome mail trail were flagged for the Commission by the roadhouse men along the route, at a cost to the Commission of \$1.00 per mile, and so well were the dangerous stretches from Unalilik to Nome done last winter, that the mail carriers often arrived in Nome 3 to 5 days ahead of schedule and the whole route of 220 miles was a safe and good trail at all times."

Upon the approach of the season for summer operations, funds being assured, the following work was planned by the Board; construction of portage road across Prince of Wales Island previously referred to, approximately four miles; section of road from Haines Mis-

the location of permanent trails, as in case of the cut-off section from Gulikana to mouth of the Big Delta, and in a modification of the line between Fairbanks and Rampart, also in the improvement of the trail along the telegraph line from Kaltag to Unalikkik.

In my report of last year some description was given of the existing conditions in the territory, including figures on population, tonnage, gold output and probable future development, with a statement of the principal needs of the territory in the way of road improvement.

These facts will not be re-stated in the present report but reference will be made here to the developments during the current year in the principal centers of activity, and which emphasize the importance to the territory of the work in charge of this Board.

One small district, that is small in its relative annual yield, the Koyukuk, shows a diminution in output, with a consequent decrease in population, and this is believed to be due largely to the fact that, the most accessible areas having been worked by crude and expensive methods and their principal values taken out, the remoteness of the district and the great expense of procuring supplies make the rest of the ground unprofitable until some improvement can be brought about. The gold output for the season will probably not exceed \$100,000. It is hardly possible at this time for our Board to give aid to this district.

The Kantishna, lying to the north and near the base of Mt. McKinley, of which so much was heard at the close of navigation last winter, after producing nearly \$100,000 of what the old timer called "easy money", - shallow diggings, - has proved a disappointment, although there are many who still hope

and confidently expect that a larger body of pay gravel will yet be located.

The other districts have, so far as could be learned, held their own or increased their production. Two or three new districts are attracting attention, the most conspicuous, perhaps, being what is known as the Tenderfoot, about seventy-five miles from Fairbanks on the north side of the Tanana. In addition to Tenderfoot Creek, Banner, Buckeye and several others are showing gold in paying quantities. There are probably 1200 people in the district, and, while it is too new to show much production of gold, the number of claims transferred and the amounts paid for same indicate much confidence in its future. The district lies near the main trail from Fairbanks to Valdez. Two other districts which are attracting attention are the one known as the Bonnerfield and extending to the headwaters of the Tatlanika and Wood rivers, lying between Fairbanks and Mt. McKinley, and the district of the Yentna, a branch of the Sushitna river rising to the westward, near the divide crossing into the Kuskokwim. Several expeditions entered the Kuskokwim Valley during the season, and a number of men are wintering there, but no authentic reports have been received of discoveries of importance.

The results of dredging in the Dawson country, and the one dredge on Solomon river, Nome, have been so satisfactory the past season that considerable activity is expected in that class of mining in other districts, especially in the Forty Mile and Birch Creek regions, which contain large areas of dredging ground.

The Fairbanks Banking Company of Fairbanks and the Alaska Banking and Safe Deposit Company of Nome, have courteously furnished me statements in detail of the estimated output of gold of their respective districts since the close of the season of 1905, made up from

REPORT OF BOARD OF ROAD COMMISSIONERS FOR
ALASKA.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

A REPORT OF THE BOARD OF ROAD COMMISSIONERS FOR
ALASKA OF OPERATIONS FOR THE SEASON OF 1906.

JANUARY 19, 1907.—Referred to the Committee on the Territories and ordered to be
printed, with accompanying illustrations.

WAR DEPARTMENT,
Washington, January 18, 1907.

SIR: I have the honor to transmit, herewith, a letter from Maj. W. P. Richardson, Ninth Infantry, president of the Board of Road Commissioners for Alaska, dated November 5 last, submitting a report, with accompanying photographs, of the operations of said Board for the season of 1906.

Very respectfully,

WM. H. TAFT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

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OFFICE OF BOARD OF
ROAD COMMISSIONERS FOR ALASKA,
Skagway, Alaska, November 5, 1906.

SIR: I have the honor to submit herewith report of the operations of the Board of Road Commissioners for Alaska for season of 1906.

The engineer officer of the Board was not able to reach the office until the last day of October, and the report is forwarded at the earliest possible date thereafter. Two copies of the report are forwarded, one inclosed herewith, the other, with certain photographs and maps, under separate cover.

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I also inclose an estimate of additional funds required for next season's work, and for which special appropriation is desired. In this connection I ask attention to the closing section of my report.

Very respectfully,

W. P. RICHARDSON,
Major, Ninth Infantry,

President Board of Road Commissioners for Alaska.

THE MILITARY SECRETARY OF THE ARMY,
Washington, D. C.

REPORT OF THE BOARD OF ROAD COMMISSIONERS FOR ALASKA, SEASON OF 1906.

REPORT OF THE PRESIDENT.

The present report covers the second season's operations of the Board, although in the matter of actual construction practically the first, as the funds available for the use of the Board last year were too limited to permit more than a preliminary examination of the conditions, with some location surveys and a small amount of construction work, mostly in the way of repair where the greatest need existed, on partially constructed roads and trails already in use.

At the close of last season it became apparent that the moneys accruing or likely to accrue under the Alaska fund act, approved January 27, 1905, and available for road construction in Alaska would be wholly inadequate to meet even the most immediate and pressing needs in the way of road improvement, and the amounts being received at irregular intervals would make it difficult for the Board to proceed with any system or economy in expenditure, even with such funds as should become available. It also became apparent that some modification of the existing law ought to be made, especially in regard to the collection of the tax moneys and extending the amount which might be expended without formal contract.

In November the president of the Board was directed in telegraphic orders from the War Department to proceed to Washington for consultation with the Assistant Secretary of War upon these matters. Subsequently the modifications in the law above referred to were made by amendment to the original act. Also a direct appropriation of \$150,000 was made in the act making appropriation for the support of the Army for the fiscal year ending June 30, 1907:

For the construction and maintenance of military and post roads, bridges, and trails in the district of Alaska, to be expended under the direction of the Board of Road Commissioners, * * *

and conformably to the provisions of the original act establishing the Board.

The Secretary of War in recommending this appropriation by letter, under date of January 20, 1906, stated:

The setting apart by special appropriation of \$1,000,000 for this work has been suggested, and considering the above figures (statement of Alaska's credit in the Treasury from revenues and taxes collected) such an act would not appear to be more than simple justice to the district in view of the great need in this direction. The sum of \$150,000 is recommended here, however, as the amount that could be expended judiciously the coming season and permit further and more specific information to be submitted in regard to routes.

Substantial amounts were received into the Alaska fund from tax collections shortly after the close of last season's operations, and became available for certain winter work planned by the Board. Sixty thousand five hundred dollars were deposited to the credit of the Board up to the time the special appropriation became available this summer, which gave the Board a continuous working capital. The last information received from this special fund gave \$52,082.75 in the Treasury, of which \$20,000 have been requisitioned to meet final payments on work in progress, or planned in the near future, and to provide for the care of animals in the hands of the Board. Detailed statement of this fund will be found in the disbursing officer's report.

In addition to the above amounts a further appropriation of \$35,000 was made by special act of Congress:

For a reconnoissance and preliminary survey of a land route from the navigable waters of the Tanana River, at or near Fairbanks, to the vicinity of Council City in the Seward Peninsula, Alaska, for a mail and pack trail along such route, such sum to be immediately available, and to be expended under the direction of the Secretary of War; report of said survey and reconnoissance to be made to Congress at the earliest practicable day.

This appropriation was placed to the credit of the disbursing officer of our Board, and the president of the Board directed to supervise the work. Mr. J. L. McPherson, civil engineer, was placed in charge of the survey and the results of his work will be submitted in a special report now being prepared. I will say here that the line was run through, approximately 600 miles, and a feasible route secured.

Before leaving for Washington in November last the following work was laid out by the Board for the winter:

Shipment of supplies—rations, forage, and tools—over the snow from Valdez and from Fairbanks, to be distributed in caches along the line of proposed trail construction between these two points during the summer, the bridging of the Tazlina River, along the same route; some special winter reconnoissance of parts of the route and from Fairbanks toward Rampart; the flagging of exposed trails in the Seward Peninsula for the safety of travelers; and the preparation of plans and specifications for construction of a portage road across Prince of Wales Island, near Ketchikan, and for 5 miles of corduroy on the road between the east fork of Solomon River and Council City on the Nome-Council route. Bids were invited upon these two last-named pieces of work but none was received for the portage road, and the corduroy section became a losing proposition to the contractors and difficult therefore to have finished satisfactorily.

Captain Pillsbury spent a considerable portion of the winter on the Valdez trail, giving personal supervision to the shipment of supplies and to the construction of the Tazlina bridge. The following remarks upon the Fairbanks end of this trail are quoted from the report of the superintendent in charge of that district.

The overland trail used last winter followed the bank of the Tanana River for 20 miles over the route cleared by the Commission during the season of 1905; thence along the river itself in places and following side channels and sloughs where protection was afforded by the timber from the wind and cold. In places where cut-offs could be made the trail followed the bank for short distances, but the greater portion of the main traveled route followed the frozen surface of the river itself. The trail left the Tanana River at the mouth of the Big Delta and thence followed up that stream to the summit, with occasional cut-offs through sloughs and for short distances

The mileage and cost of the location surveys carried out by the Board proper since the last report are as follows:

Place.	District.	Distance.	Cost per mile.
		<i>Miles.</i>	
Gulkana to Donleys.....	Valdez.....	121	\$33.00
Fairbanks to Donleys.....	Fairbanks.....	127	
Delta to Banner.....	do.....	13	21.00
Donleys to Banner.....	do.....	51	
Fortymile to Eagle.....	do.....	57	16.40
Rampart to Glenn.....	do.....	30	50.00
Hope to Sunrise.....	Southwest Alaska.....	39	9.70
Preliminary survey, Tolovana-Glenn.....	Fairbanks.....	18	55.00
Sundry surveys.....	Seward Peninsula.....	19	66.00
Total.....		475	

^a Estimated; final reports not received.

These do not include the preliminary survey from Fairbanks to Council made by special act of Congress.

In addition surveys were made for the crossings of the inlets at Port Safety and at Solomon, Nome district, at a cost of \$299.50, and an examination of the crossing of the Kotsina River, Valdez district, at a cost of \$171.05.

The construction accomplished by the Board during the past season is as follows:

	Miles.
Wagon roads.....	46.5
Roads maintained and improved.....	40.0
Sled trails, full width for double sleds.....	181.0
Trails, cleared half width.....	91.0
Bridge over the Tazlina River. Winter trails flagged.....	247.0
Maintenance of Bonanza Ferry.....	

The wagon roads constructed may be described as good country highways. More elaborate construction than that of this character is believed entirely superfluous, as the traffic over the most traveled roads is not what would be regarded as heavy, and there are so many localities in pressing need of ordinary roads that it is essential that no more than is absolutely necessary be done in any one place.

The methods of construction of wagon roads varied according to the requirements of the situation. Wherever possible, the ground was stripped of moss or turf and graded to proper shape, according to the usual practice. Where the nature of the soil permitted and this method of construction was properly carried out a serviceable road resulted.

The great obstacle to road building in Alaska, outside of the heavy cost on account of the high prices for labor and teams, is, however, the permanently frozen ground. A large portion of the soil of Alaska, except on the Pacific coast, is permanently frozen to an unknown depth, the surface being protected from thawing during the summer by a thick blanket of moss or turf. This frozen ground often contains masses of solid ice locally termed "glaciers." It occurs principally in bottom and lower slopes of the valleys, although the higher slopes are sometimes frozen. Even in the valleys, however, small swales and streaks of dry and consequently unfrozen soil are often found. The frozen ground varies in composition. In the Tanana Valley it is the detritus of the mica schist country rock; in

the Rampart section, the clayey detritus of the slate country rock; on the Seward Peninsula, a peaty muck.

If the frozen soil is gravel, it does not as a rule contain solid ice, and the ground may be stripped and graded as usual. The face of sidehill cutting runs and slides very badly when first exposed to the sun, and the roadbed is ordinarily wet and soft. It is not expected, however, that these effects will continue after the gravel is once thawed and drained. Where timber was at hand and the immediate need of the traffic great, as in the Fairbanks district, a light pole corduroy was usually laid to permit the immediate use of the road. It would probably be preferable to dispense with this corduroy were the needs of the traffic not so pressing.

In localities, also, where the frozen ground is of a clayey nature, so that it has some consistency when thawed, is not badly glaciated, and where immediate demand of wagon traffic is not great, the road may be stripped and graded. This was the case at Rampart.

Where, however, the frozen ground is the mica schist muck of the Tanana Valley, or the peaty muck found in other places, stripping the moss or turf is entirely out of the question. The resulting road would be an impassable quagmire, gullied and cut deep below the surrounding ground. The protecting blanket of vegetable matter must be left in place, to the end that the ground underneath be kept frozen and solid. This layer of vegetable matter is, however, unable to sustain wagon traffic, and it is necessary to lay on it a protective covering. Where spruce timber is at hand the practical covering is a pole corduroy. Fortunately the spruce timber on frozen ground is well adapted for the purpose, as the trees are small and usually fairly straight.

Experience has shown that the best method of constructing this corduroy is as follows: The trees are grubbed out of the roadbed, as is easily done, as the roots do not penetrate the frozen soil. Any hummocks in the moss are leveled off. A layer of poles, placed a foot or more apart, is laid lengthwise with the roadbed, the larger trees being used, with the large, stiff branches only trimmed off. On this is laid a closely set layer of poles transversely to the road, the straightest and most uniform trees being selected. The poles of this top layer are not closely trimmed, but, as in the lower layer, the stiff branches are cut off. This corduroy is covered with earth from the ditches, to protect the corduroy and afford a smoother roadway. To secure these results the top moss or turf from the ditches must not be used, as this material quickly grinds to dust or mud. It should be thrown outside the ditches, under the corduroy, or alongside it.

This method of corduroy construction is by no means an experiment, having been developed in the Yukon territory. The Canadian authorities state that roads constructed over frozen soil in this manner cost less for maintenance than sidehill roads on high ground. As timber decays very slowly in Alaska, it is expected that the corduroy will last for a very considerable period of years.

The Seward Peninsula is for the greater part barren of timber of any kind, except patches of gnarled and stunted willow, so crooked as to be unsuitable for corduroy. When the roads crossed frozen muck, with no timber available, a thick layer of gravel was laid on top of the turf. The gravel was first laid 12 inches in thickness. The objection to this construction is that under the traffic the muck works up into

mud sills at the ends, with a 32-foot span over the crib. On account of the lumber yards being out of the required kind and amount of lumber, I was forced to use lumber of all dimensions and from all sources.

The cribs were built and floated into position during high water, and the entire structure put in at a cost of \$920 in two days' time.

The stringers are 7 by 16 inches by 32 feet and 12 by 12 inches by 16 feet or 20 feet on 16-foot chords and 12 by 12 inches by 12-foot caps.

From here the road follows the left limit of Bourbon Creek, and in its best drainage as shown on plat. One reason, too, for the location of the road as it is was to give two entrances to the town, one via Steadman avenue and the other to West D street, and thus not incur the enmity of either end of town.

The roadway is 22 feet between ditches, and while the frost was yet within 3 to 4 inches from the surface in the early spring the ditches were plowed, to great disadvantage, and material thrown to the center either with Fresno scrapers or the road machine and the sun given a chance to thaw in the ditches. The roadway was then crowned up to 1 or 2 feet above the surrounding country, when I procured all the old sacks of the winter's coal piles, and these were laid on top of the soft, spongy tundra and trunks thrown ahead of the gravel teams as they would come up, and thus a mattress was constructed over a large part of the tundra part of the road.

Also a great quantity of old corrugated iron, the result of Nome's fire in August, 1906, was picked up and laid in the same manner, but as funds ran out and not sufficient gravel or clay was put on to properly cover this, as was intended, it became exposed and dangerous to traffic, so I had a great quantity of it pulled out later.

Willows were also used where handy, but did not give as good bearing as the sacks and are not as cheap or permanent.

The cost of the road is reported as follows:

Subscription fund:		
Survey.....	\$126.00	
Construction.....	7,240.50	
		\$7,366.50
Allotment from Board:		
Survey.....	182.00	
Construction.....	8,829.93	
		9,011.93
Grand total.....		16,378.43

MAINTENANCE OF BONANZA FERRY.

This ferry is on the land route along the beach from Nome to Solomon. The beach and sand dunes, with a toll road around Cape Nome constructed by A. E. Boyd and completed during the past year, make a good road between these points. As freight and passengers can be handled more cheaply, although with an element of danger, by small craft regularly plying along the coast, this route is used, as a rule, only during rough weather and by wagons and horses traveling light. The traffic is insufficient to render a toll ferry a paying business.

As the Bonanza Inlet is unfordable, and as the Board considered it essential to provide facilities for the safer travel along the beach, the ferry is kept in good condition and the wages of the ferryman are guaranteed, he charging a fixed toll and submitting a certified statement as to the amount.

The costs of the maintenance of this ferry during the past season are as follows:

Repair to ferry.....	\$48.60
Wages, ferryman.....	150.00
Total.....	198.60

The travel over the ferry since it was maintained by the Board is as follows: August, 1906: 83 persons, 43 horses, 15 wagons; September 1906: 80 persons, 41 horses, 7 wagons.

SURVEY OF INLETS AT SAFETY HARBOR AND BONANZA INLET.

The situation at Safety Harbor is the same as regards traffic as at Bonanza Inlet, except that the crossing is much longer and more exposed. With a view of permanent improvement of these crossings a survey was made during the season under an allotment from the Board by Mr. W. A. Hesse. The cost of these surveys is reported as \$299.50.

The population of the Seward Peninsula is so widely distributed and the country is in general so much more adapted to wagon traffic without improved roads than are other sections of Alaska, while at the same time improvement, where necessary, is so much more expensive, on account of the lack of timber, that the road situation is far more difficult to meet than at other places. There are a very considerable number of localities that need roads, and some that need them badly. There are few, however, in which the immediate saving to the community would approximate the cost of construction.

KALTAG TRAIL (NO. 12).

This trail connects the towns of Kaltag and Unalaklik, and is a portage between the Yukon and Bering Sea. The military telegraph line follows this route, and the winter mail for Nome goes over it. Its length is 85 miles.

The work undertaken consists of building upward of 20 small bridges and clearing out about 17 miles of trail. Lieut. A. C. Voris, Signal Corps, in charge of this section of the military telegraph line, has consented to supervise the work, which is now being carried out by native labor. The allotment made by the Board is \$500, and it is understood that the Signal Corps of the Army is expending a like amount to facilitate the inspection and supply of the telegraph line.

SOUTHWESTERN ALASKA.

HOPE-SUNRISE TRAIL (NO. 13).

This trail is designed to connect the towns of Hope and Sunrise on the Turnagan arm of Cook Inlet with the Alaska Central Railroad. Cook Inlet is frozen in winter, and its navigation in summer is not easy.

The work done during the present season consisted in the examination and survey of the route. Mr. Poland, chief engineer of the railroad, kindly gave the work his supervision. The location and survey were made by Mr. J. J. O'Dale and Mr. W. H. Reel, between July 1 and August 15.

Maps, plans, and estimates are on hand, and it is expected that the work of construction will be begun on the opening of the working season next year.

The cost of the survey was \$378.20. The length of the line is 39 miles.

Respectfully submitted.

G. B. PILLSBURY,
 Captain, Engineer Corps, Engineer Officer of the Board.
 NOVEMBER 1, 1906.

Route No. 1, Ketchikan-Portage road:

Labor.....	\$5,783.11
Subsistence stores.....	1,011.08
Transportation, supplies.....	86.01
Forage.....	205.43
Tools.....	337.16
Tentage.....	255.50
Horses.....	1,100.00
Harness and repairs for same.....	158.94
Shoeing and medical supplies, horses.....	11.75
Camp equipment.....	202.19
Material for construction.....	664.19
Travel and inspection.....	44.50

Total.....

Route No. 3, Haines-Hindustucki road:

Labor.....	3,632.65
Transportation, supplies.....	34.60
Tools.....	45.80
Hire of teams.....	1,406.45
Material for construction.....	823.00
Repairs, tools, etc.....	16.15
Travel and inspection.....	2.50

Total.....

Route No. 4, Valdez-Copper Center:

Subsistence stores.....	206.38
Transportation, supplies.....	294.59
Forage.....	34.05
Rent of barn.....	4.00
Purchase horses.....	961.66
Pack and sled equipment.....	147.92
Veterinary supplies.....	3.33
Camp equipment.....	10.00
Shoeing horses repairs equipment.....	61.78

Total.....

Route No. 5, Fairbanks-Delta trail:

Labor.....	2,011.50
Subsistence stores.....	1,091.19
Material for construction.....	69.00
Transportation, supplies.....	430.30
Forage.....	402.51
Tools.....	241.30
Tentage.....	110.00
Horses.....	3,375.00
Pack and sled equipment.....	586.87
Veterinary supplies.....	4.50
Shoeing horses.....	18.50
Camp equipment.....	159.75

Total.....

Route No. 5 A, Delta-Tenderfoot trail:

Forage.....	11.70
Tools.....	52.62
Shoeing horses.....	30.00
Pack and sled equipment.....	22.50
Camp equipment.....	106.50

Total.....

Route No. 6, Copper Center-Delta trail:

Labor.....	26.00
Subsistence stores.....	412.76
Transportation supplies.....	589.12
Forage.....	116.00
Barn rent.....	8.00
Purchase of animals.....	1,923.34

\$9,895.80

5,961.10

1,723.70

8,500.40

223.30

Route No. 6, Copper Center-Delta trail—Continued.

Pack and sled equipment.....	\$288.35
Veterinary supplies.....	6.67
Camp equipment.....	21.30
Shoeing horses and repairs equipment.....	138.78

Total.....

Route No. 6 A, Summit Crossing:

Tools.....	105.25
Shoeing horses.....	48.00

Total.....

Route No. 7, Gilmore-Summit:

Labor.....	581.50
Subsistence.....	387.00
Transportation.....	41.99
Forage.....	80.63
Tools—rent road machine.....	75.00
Hire animals.....	285.00

Total.....

Route No. 7 A, Summit-Cleary:

Labor.....	5,285.10
Subsistence.....	2,732.00
Transportation.....	224.88
Tools.....	205.75
Tentage.....	107.50
Construction material.....	20.00
Hire teams.....	2,440.60
Shoeing horses.....	35.00
Pack and sled equipment.....	110.00
Camp equipment.....	23.75

Total.....

Route No. 7 B, Fox Dome:

Labor.....	6,662.65
Subsistence.....	4,007.43
Transportation, men and supplies.....	350.98
Forage.....	328.52
Tools.....	221.90
Hire animals.....	1,642.00
Pack and sled equipment.....	110.00
Material for construction.....	25.50

Total.....

Route No. 7 C, Summit-Fairbanks Creek:

Labor.....	1,294.50
Subsistence.....	420.00
Transportation, men and supplies.....	124.90
Tools.....	144.95
Tentage.....	95.00
Hire animals.....	627.00
Pack and sled equipment (wagons).....	110.00

Total.....

Route No. 8, Fox River-Council:

Labor.....	2,039.50
Subsistence.....	584.75
Forage.....	16.90
Hire tools.....	175.00
Purchase horses.....	166.66
Construction material.....	26.00
Camp equipment.....	46.50
Travel and inspection expenses.....	120.50

Total.....

\$3,530.32

153.25

1,451.12

11,184.58

13,348.98

2,816.35

3,175.81

Route No. 8 A, Skookum Pass grade:		
Labor.....	\$2,043.05	
Subsistence.....	657.60	
Transportation, men and supplies.....	91.68	
Forage.....	123.20	
Rent tools.....	130.00	
Repair tools.....	59.00	
Purchase horse.....	166.67	
Hire horse.....	500.00	
Construction material.....	91.50	
Inspection and traveling expense employees.....	203.25	
Total.....		\$4,065.95
Bonanza Ferry:		
Labor.....	186.50	
Transportation, employee.....	.50	
Tools.....	10.75	
Survey.....	.85	
Total.....		198.60
Route No. 9, Rampart-Minook:		
Subsistence employees.....	1,348.80	
Transportation.....	98.36	
Tools.....	111.50	
Tools.....	5.50	
Camp equipment.....	1,601.00	
Hire animals.....	3.00	
Purchase ammunition.....	3.00	
Total.....		3,168.16
Route No. 10, Nome-Fort Davis:		
Labor.....	510.50	
Rent tools.....	5.00	
Hire teams.....	83.00	
Material for construction.....	157.39	
Total.....		755.89
Route No. 13, Nome-Dexter:		
Labor.....	4,091.16	
Subsistence.....	958.00	
Transportation employees and inspection.....	37.50	
Hire tools.....	267.25	
Construction material.....	637.75	
Purchase horse.....	166.67	
Hire horse.....	2,796.70	
Travel and inspection.....	13.00	
Camp equipment.....	4.15	
Repair tools.....	39.75	
Total.....		9,011.83
Survey, Safety Harbor, labor.....		144.00
Total expenditures.....		83,172.00

Tax fund accounts.

Skagway office:		
Labor, clerk hire.....	2,161.34	
Rent.....	416.00	
Lights.....	18.10	
Stationery.....	228.00	
Office fixtures.....	37.65	
Drayage, freight and express.....	12.75	
Fuel.....	135.50	
Telegrams.....	11.30	
Stamps, post-office and box rent.....	7.50	
Traveling expense members Board.....	801.20	
Laundry and cleaning material.....	2.55	
Telephone.....	17.25	

Skagway office—Continued.

Photo supplies.....	\$18.00
Subsistence members Board.....	231.00

Total..... \$4,098.14

Valdez office:

Pay employees.....	406.00
Rent.....	40.00
Lights.....	6.00
Stationery.....	6.85
Office fixtures.....	7.20
Fuel.....	7.50
Telegrams.....	2.20
Exchange.....	48.75
Pack and sled equipment.....	76.50
Traveling expense employee.....	20.00
Camp equipment.....	63.90

Total..... 684.90

Fairbanks office:

Pay employees.....	2,553.75
Rent.....	328.00
Lights.....	31.00
Stationery.....	10.00
Office fixtures.....	106.00
Fuel.....	14.00
Telegrams.....	.86
Stamps, post-office.....	1.44
Telephone.....	107.75
Exchange.....	132.13
Survey instruments.....	4.50
Tools.....	75.00
Traveling expense employee.....	26.00

Total..... 3,390.43

Nome office:

Pay employees.....	1,705.00
Rent.....	320.00
Lights.....	18.00
Stationery.....	58.25
Office fixtures.....	86.25
Fuel.....	137.50
Stamps, post-office and box rent.....	7.12
Telephone.....	42.50
Exchange.....	70.79

Total..... 2,495.41

Tazlina bridge:

Labor.....	9,931.56
Subsistence for employees.....	886.45
Transportation and wharfage.....	3,835.33
Forage.....	1,299.12
Tools and machine.....	1,327.10
Tentage.....	112.00
Purchase animals.....	770.00
Pack and sled equipment.....	569.47
Camp equipment.....	18.35
Shoeing horses and repairs tools.....	23.00
Material for construction.....	662.05

Total..... 19,434.43

Fox River Council Corduroy Road:

Labor, contract.....	13,000.00
Labor, extra work, contract.....	1,094.08
Labor, timekeeper, etc.....	400.50
Subsistence stores.....	32.50
Transportation.....	18.99

Fox River Council Corduroy Road—Continued.		
Tools.....	\$1.00	
Advertising and printing.....	121.90	
Travel and inspection.....	323.50	
Total.....		\$14,992.47
Route No. 1, Ketchikan Portage:		
Labor.....	415.22	
Transportation.....	12.00	
Printing and advertising.....	120.35	
Total.....		547.57
Route No. 6, location and survey, and distribution of supplies:		
Labor.....	65.67	
Subsistence.....	646.40	
Transportation and wharfage.....	80.00	
Forage.....	192.57	
Tools.....	48.15	
Tentage and stoves.....	36.65	
Pack and sled equipment.....	123.35	
Camp equipment.....	33.32	
Material.....	17.92	
Shoeing and repairs.....	7.75	
Purchase horses.....	575.00	
Total.....		1,826.78
Flagging trails, Seward Peninsula:		
Labor.....	804.00	
Subsistence.....	41.30	
Material.....	101.16	
Tools.....	12.40	
Dog food.....	24.85	
Hire animals.....	15.25	
Travel and inspection.....	264.75	
Total.....		1,263.71
Route No. 5, location and survey, and distribution of supplies:		
Labor.....	2,920.00	
Subsistence.....	1,310.41	
Transportation.....	579.37	
Shoeing horses.....	20.00	
Forage.....	190.00	
Purchase animals.....	1,670.00	
Pack and equipment.....	108.75	
Camp equipment.....	43.00	
Total.....		6,841.53
Route No. 7, Gilmore-Summit:		
Labor.....	136.00	
Travel and inspection.....	12.67	
Total.....		148.67
Route No. 7 A, Summit-Cleary:		
Inspection.....		18.17
Route No. 7 B, Fox-Dome:		
Inspection expense.....		76.16
Tolovana-Glenn survey:		
Labor.....	637.00	
Subsistence.....	99.50	
Snowshoes.....	35.50	
Dog food.....	21.25	
Hire teams.....	105.00	
Purchase dogs.....	50.00	
Pack and sled equipment.....	2.00	
Inspection.....	47.25	
Total.....		997.50

Kotsina bridge:		
Labor.....	\$161.05	
Transportation.....	10.00	
Total.....		\$171.05
Route No. 4, Valdez-Copper Center, location and survey:		
Labor.....	12.83	
Forage.....	30.53	
Tools.....	24.00	
Tentage.....	18.35	
Camp equipment.....	16.66	
Construction material.....	8.95	
Repairs, material.....	3.85	
Pack and sled equipment.....	31.65	
Total.....		146.82
Skookum Pass survey:		
Labor.....	153.50	
Transportation.....	33.38	
Inspection and travel.....	100.15	
Total.....		287.03
Total disbursements.....		57,420.77
SUMMARY.		
Receipts:		
Special appropriation.....	150,000.00	
Tax fund.....	80,500.00	
Total.....		230,500.00
Disbursements:		
Special appropriation.....	83,172.09	
Tax fund.....	57,420.77	
Total.....		140,592.86
Balance.....		89,907.14

Attention is invited to item in this report showing balance on hand of \$89,907.14. During the months of September and October, 1906, operations were very active, and with the exception of \$20,000 received October 30 this amount has been expended, but owing to delay in mails on account of river navigation being closed vouchers covering the greater portion of expenditures during those months have not been received in this office.

Respectfully submitted.

SAM. C. ORCHARD,
First Lieutenant, Third Infantry,
Disbursing Officer, Alaska Road Commission.

ANNUAL REPORTS, WAR DEPARTMENT

FISCAL YEAR ENDED JUNE 30, 1907

REPORT OF THE
Board of Road Commissioners
for Alaska

TO THE SECRETARY OF WAR

1907



WASHINGTON
GOVERNMENT PRINTING OFFICE

1907

banks, Nome, and the small office expense at Seattle. (See distribution following tabulated statement.)

	Military and post roads, bridges, and trails (acts approved June 12, 1906, and Mar. 2, 1907).	Alaska fund.	Total.
Offices.....	\$6,105.22	\$18,075.35	\$24,180.57
Care of stock.....	927.36	9,685.44	10,612.80
Construction barn, Fairbanks.....		1,500.00	1,500.00
Route 1.....	1,861.53	18,461.95	20,323.48
Route 2.....	11,116.04	3,314.55	14,430.59
Unalaklik-Kaltag trail.....	500.00		500.00
Route 4.....	2,564.18	5,249.52	7,813.70
Route 4a.....		1,058.14	1,058.14
Taslina Bridge.....		312.00	312.00
Route 5.....	24,911.65	3,061.77	27,973.42
Route 5a.....	5,175.65	2,387.94	7,563.59
Salcha Ferry.....		757.20	757.20
Piledriver Ferry.....		946.89	946.89
Route 5b.....	3,409.52	4,731.27	8,140.79
Route 6.....	10,743.91	8,468.96	19,212.87
Kotsina Bridge.....	273.22	4,329.26	4,602.48
Route 6a.....	7,869.51	5,214.09	13,083.60
Route 7.....		448.50	448.50
Route 7a.....	4,301.19	604.00	4,905.19
Route 7b.....	1,383.75	462.10	1,845.85
Route 7c.....	8,443.91	443.50	8,887.41
Route 7d.....	2,002.50	425.00	2,427.50
Route 7e.....	2,085.75		2,085.75
Route 8.....	124.50	1,057.45	1,181.95
Route 8a.....	4.55		4.55
Route 9.....	18,750.50	2,740.38	21,490.88
Route 10.....	1,556.81	1,637.78	3,194.59
Route 11.....	33,250.12	12,273.60	45,523.72
Route 11a.....		4,632.50	4,632.50
Route 12.....	3,269.18	2,232.18	5,501.36
Route 12a.....	634.50		634.50
Route 13.....	1,874.11	3,717.03	5,591.14
Route 14.....	6.00	3,210.06	3,216.06
Route 15.....	8,312.95	561.75	8,874.70
Route 16.....	409.60	5,855.04	6,264.64
Route 17.....	8,569.64	6,283.56	14,853.20
Route 18.....	7,967.27	3,646.18	11,613.45
Route 19.....	8.95	125.00	133.95
Route 20.....	988.85		988.85
Route 22.....	3,052.59		3,052.59
Route 24.....	212.78		212.78
Hastings Bridge.....	216.67	2,977.09	3,193.76
Tishou Ferry.....	213.80	360.60	574.40
Bonanza Ferry.....	112.50	318.43	430.93
Survey Kenai-Alaska Central Railway.....	301.30		301.30
Survey Pay Streak.....		20.00	20.00
Survey coast bridges.....		134.34	134.34
Survey Nome Bridge.....		11.66	11.66
Route 26.....	4,937.63	144.00	5,081.63
Route 27.....	3,169.05	103.50	3,299.55
Flagging trails.....		1,453.37	1,453.37
Fairbanks-Council survey.....		2,709.19	2,709.19
Route 29.....	28.00		28.00
Route 30.....	2,543.90		2,543.90
Route 31.....	286.74	1,033.55	1,320.29
Route 32.....	135.95	563.04	698.99
Route 33.....		1,076.03	1,076.03
Route 34.....	3,290.50		3,290.50
Total.....	197,930.91	148,814.79	346,745.70

Distribution of expenditures.

OFFICES.	
Rents.....	\$1,531.88
Instruments and field equipment.....	1,606.02
Stationery and office fixtures.....	2,178.33
Fuel and lights.....	741.89
Pay of employees.....	12,562.10
Travel and living expenses (subsistence), members of Board.....	2,748.27
Travel expenses, employees.....	1,865.40
Exchange.....	421.24
Miscellaneous, telephone, postage, cleaning material, etc.....	372.30
Freight, drayage, and express.....	153.14
Total.....	24,180.57

FIELD WORK.	
Surveys.....	\$27,666.66
Labor of construction.....	156,592.34
Subsistence of employees.....	37,994.61
Transportation, men and supplies.....	11,055.38
Purchase of animals.....	4,247.20
Hire of teams.....	24,545.40
Forage, veterinary supplies, and care of horses.....	18,946.51
Tools, wagons, and pack equipment.....	7,633.17
Construction material.....	9,690.77
Camp equipment, stationery, etc.....	1,815.12
Staking roads and trails.....	1,553.37
Inspection, exchange, and repairs equipment.....	485.05
Telegrams, photo material, and ammunition.....	40.80
Contracts and agreements.....	3,450.00
Bridges and ferries.....	10,505.66
Miscellaneous, not segregated.....	
Eagle-Seventymile.....	
Canyon Creek-Walkers Fork.....	6,343.09
Total.....	322,565.13

Respectfully submitted.

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

OCTOBER 1, 1907.

ANNUAL REPORTS, WAR DEPARTMENT

FISCAL YEAR ENDED JUNE 30, 1908

REPORT OF THE
Board of Road Commissioners
for Alaska

TO THE SECRETARY OF WAR

1908



WASHINGTON
GOVERNMENT PRINTING OFFICE
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