

ARC ANNUAL REPORT
1909

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

RECEIVED
MAY 1 1910

REPORT OF ALASKA ROAD COMMISSION.

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 for from Valdez as far as Fort Gibbon and I

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

Unfortunately for the plans of the board summer an almost unprecedented rainfall prior, which, added to the already high water and glaciers of the mountains, resulted in ing away and delaying work all along the ing one of the most important and experienced by the commission in 1906 at an origin This bridge spanned the Tazlina River, and it was not possible to replace the p the summer. This period of rain was fol by an early winter, and some of the worki the field on account of deep snow about would usually happen.

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

However, a great deal of important w entire route was gone over, with the ex in disconnected sections, most of which, which had to be left unimproved on ac winter. These unimproved portions en Tonsina and Copper Center—very soft—so between Copper Center and Gulkana, and as the "Dome" on the lower Delta.

A brief description of this overland ro report. Travel on foot and horseback w during the past summer, and two drove 1,300 sheep were taken over. The "goir the heavy rains and new work in progres near the close of the season.

It became generally known before th work that an appropriation of \$350,000 ! for the "construction of military and p and that the plans of the road commissi cial part of this amount in improving th travel by wheeled vehicles and to push sible. This information, being freely di became converted presently into the app

ALASKA ROAD COMMISSION.

BOARD OF ROAD COMMISSIONERS FOR
ALASKA, 1909.ROAD COMMISSIONERS FOR ALASKA,
*Valdez, Alaska, October 27, 1909.*submit report of the Board of Road Com-
missioners for the season of 1909.The report is heretofore of three parts: Report of the
engineer in charge, 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.

I have covered the operations of the board up
to the receipt of disbursements, which were brought up

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

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

At this winter work the office of the commission
was transferred from the War Department from Skagway,
the organization of the board, to Valdez, the
overland road. The transfer was made in
the interest and distribution of supplies was carried
under the supervision of Lieutenant Orchard, dis-
commissioned, and the immediate direction of
the superintendent of the Valdez district. The engi-
neer's work was 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 pos-
sible. 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 way to Fairbanks, including Fairbanks, more than 1,000 miles, including Fairbanks. The rebuilding of this route from Valdez as far as Fairbanks was in excellent 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 and summer mail service will be established in the future, and the travel and traffic of all roads are improved and will continue for many years.

Important branch roads, connecting the mouth of the Chitina River with the Railroad turns easterly up the valley, on the wagon road near Copper Center, will be constructed next season. Other important roads are to the Valdez Creek district from Fairbanks, not yet determined and from Paxson.

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

The largest part of the season's work has been the improvement and conversion of the "winter sled" into the class of wagon roads. The improvement of "trail" into sled road and increase in mileage has been of wagon roads. Mileage of trail as heretofore reported on different heads is given below, with comparison of close 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 Haines Circle-Birch Creek and Rampart-Minnehaha, far as the conditions of traffic at this time on the Peninsula (Nome district) is fairly well maintained, with necessary roads, with one or two exceptions, in good state of repair. The same may be said of the immediate vicinity of Fairbanks. Some of the winter extension of the mail route to the north 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 of 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 itions of a few years ago, and which still of the Territory, rather than in comparison as "good" roads in the States.

oad has not been constructed with a view r, nor for the comfortable use of automo- ated when it is explained that the whole d, including location and maintenance, since n trail, for both summer and winter travel, , excluding cut-offs for winter travel only,

In sections of rock and gravel side-hill passable route for wheels meant necessarily tial road, but in many long stretches the e natural soil of the locality, with pole or ath to give support in swampy places. come cut up and muddy with much traffic ondition is made worse on account of the hich was necessary for reasons of economy. e road is a development in response to the r as possible with the funds at the disposal eeds have been, first, a trail over which ported by dog-team or single-horse sled in ngers and pack animals in summer, with e streams and impassable swamps; second, ed road for mail, passenger, and express ed, the present condition of the route for ic in summer. The next step in its develop- ecome available, to widen it throughout, ease and perfect the drainage by further culverts where necessary, to carry off the a most important factor in all road con- e necessary than on such a road as the one work can now be done rapidly and at ully excellent country road completed in a ure only a small annual expenditure there- tenance.

miles in length, omitting a few cut-offs for s from the open port of Valdez on the coast u, at Fairbanks, connecting there in summer of the Tanana and Yukon basins and during ation with the winter mail trails to the north ets directly or through branch routes all

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.
	<i>Miles.</i>	<i>Miles.</i>
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 reconnoissance 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 Hydolotna, 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 Alaska Central 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 person in charge of the movement took the name "Alaska Road Commission," which to many persons meant that the further activity is expected along the same line, and, while the board can not fail to appreciate the interest in approval of its work, which evidently is, it is hoped that for the best interests of the Territory, the work will be confined to such approval and to the making of recommendations instead of exhausted requests for increased appropriations.

The liquor-license, trade, and occupation tax, amounting to 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 abandoned, and 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. It is also recommended that a tax of \$5 per annum be placed on claims not patented, and a small tax on 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 for revision, may, if he so elect, pay into the "Alaska Road and Trail Construction" fund, the sum of \$100,000 in lieu of all assessment work, recorder's fees, and other work, provided, upon any claim for the current year, a certain sum to the road and trail fund. This work has frequently been discussed in the past, and has been brought before Congress in the form of a bill, but has not found favor, for the reason that the provision was optional instead of optional. To the proposition I can see no possible objection. The man who makes the claim, 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 result.

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, of which a reconnoissance was made. Reference to this was made in last report stated that—

It will not come until after the Alaska Central is as far as Knik, at the head of the inlet, and until then in the Kuskokwim and Innoko districts.

It has, at least, been fulfilled during the Alaska Central has been reorganized, through a change of its track about 20 miles during the winter, 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 "stamperbanks" five years ago. The particular statement was made on a tributary of a stream in Innoko, hitherto almost unknown, even its name, and given on one map as the Hyde, near the Iditarod.

At this time indicate that the movement is the "strike" is rich and of considerable value to the coast for this region is via the route over Rainy Pass to the head of Cook Inlet lands 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 is left, on the river ice. Such continuation on the south side of the Yukon and could be by using the Cook Inlet route from there to the coast. In that place there exists a great need of a route for both summer and winter travel to the Yukon, to the Naklik or St. Michael. With the development of the valley there will come, also, the need of a route to the Yukon. All these last-mentioned general lines of travel and communication are of the Territory.

Some funds for carrying on the work in a certain way, some further means will, it is thought, be made. The modifications made in the laws relating to the Alaska. As heretofore explained, the special law was for the purpose of completing the route 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 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

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

of my report of last year I stated that—

light, when the local roads in the different sections are under the care and extension to local authorities, leaving only the management of the road commission—

and of road supervisors to have charge in the execution of the per capita local-road law. It does not argue any nearer approach of the advantage of the Territory; rather the result of the operation of this local-road law have the board of road commissioners has voluntarily taken the matter, furnishing overseers in some of the work. The alternative to the suggestion of the board of road commissioners to designate one person to supervise the expenditure of money in connection with its other work, and I have recommended to this effect. There is little doubt in my opinion, I believe, the most satisfactory in nearly all cases by having the entire work under one direction until such time as Congress shall decide upon self-government to the Territory, including the management of 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 completion 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 my former reports of the road commission, and memoranda have been submitted to the Territory showing the progress made by various roads in building in different sections of the Territory. The following is 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 are always be an aid through sections where the traffic is not so good, but it can no longer be doubted by the Territory that the one great need is a rail connection between the Territory to report the year around.

into two principal propositions:

the developments which have taken place in the Territory in the past years 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 increase of transportation attendant upon the development of the Territory is so 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 mouth of the two glacier streams north of the Miller House is now in use of bobsleds in winter all the way from Valdez to the use of bobsleds in winter all the way from Valdez 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 to postpone this point next spring to accommodate the construction 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 reaching the coast going from Valdez to Fairbanks, have been kept open 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 this report as much as possible details of the roads and trails given in previous reports are 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 from the mouth of the 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 heavy rains, the great amount of rockwork to be done, and 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 winter. About 1 mile of trail was constructed. The cost, including maintenance, was \$1,343.21.

JUNEAU-EAGLE CREEK TRAIL

For some time there has been great need for a road between Juneau and Eagle Creek which is the center of supply for this region.

of winter, with the difficulties of land transportation of development. But that development is, except for brief periods and awaiting

widely advertised this year through the exposition and its resources and industrial a number of small pamphlets prepared by Yukon Magazine, along conservative lines recently, that "the truth is good enough." 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.

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

for the Valdez district were sent in over the only difficulty in transportation was in the shipment of such supplies as the summer over the unusually muddy has have added considerably to the expense decreasing greatly the amount of work which what should have been done in an

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

kinds of roads and trails constructed have reports and will not be repeated here. kind of roads heretofore constructed has ne from Valdez to Fairbanks, where, on and the difficulty of constructing a good and in one season, light traffic and small led for, 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 Paxson's 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 requirements are foreseen are carried in in summer.

VALDEZ-GULKANA ROAD (NO. 1)

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

During the last year 136,002 pounds of freight and express were hauled over it. About 2,500 people used this route out from the interior. The above figures, based on data on hand and are probably the actual amounts.

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

The cost of the section from Valdez to Tonsina of 27 1/2 miles, was \$16,753.55. From Valdez to about 11 miles, the grades of the Alaska Highway and Yukon Railway were used, with the construction of the work done on this section consisted in pile bridges over the glacier streams and work was done by contract. Two thousand thirteen and one-sixth linear feet of bridge were built at a contract price of \$3 per linear foot, making a total cost of \$39,750.00.

The remainder of the work done in this section consisted in grading and clearing on the Keystone Flats, general improvements from Dutch Flat beyond Wortmans, and maintenance and grading leading from there to the summit.

From Thompson Pass to Saina, a distance of 12 miles, the work was mostly heavy side-hill grading at a cost of \$23,901.61 or \$2,390.16 per mile.

The cost of work from Saina to Beaver Creek, a distance of 12 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 in repairing the bridge across Glacier was located leading from Juneau to Eagle Pass, 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, possible to complete the work this year; 7.06 constructed at a cost of \$11,502.96. Lemon, eeks were crossed by bridges 180 feet, 60 spectively, and 17 small bridges were built 40 feet. Two thousand six hundred and 7 were laid and 1,100 feet of rockwork done.

PLEASANT CAMP ROAD (NO. 3).

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

er the annual report had been submitted, s the Chilkat River at Wells, at a cost of nsists of two 108-foot trusses with approaches g. During the past summer this bridge was done in filling piers and putting in braces. ne on route No. 3 has not yet been reported

SITKA ROAD (NO. 41).

m Indian River eastward to the head of st of 2.78 miles. It was constructed during st season. The cost of construction was 8 feet wide. Nine bridges were built with feet.

VALDEZ DISTRICT.

perintendent in charge of this district. this district is quite varied in character, me of the cheapest and some of the most Territory. The two mountain sections, ge from Camp Comfort to Tonsina, and ge from Paxsons to Casey's Cache, require kwork and grading.

o Gulkana the road follows the benches of and is quite light. The conditions in other district are very similar to those in the ived further on in this report. Supplies ow in winter, as the cost of transportation ibitive, 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 estimates 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 removing 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. The cost of this section was \$15,759.67.

From Sour Dough to 165 Mile Post, a distance of 10 miles, the conditions were about the same as in the previous section. The 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 distance of 10 miles, the cost was \$19,584.76. The conditions in this section were about the same as in the two previous sections.

The entire road from about 10 miles north of Paxsons to a distance of 54 miles, is over ground covered with moss and scrubby spruce timber, the ground being of unknown depth. It is impossible to construct a road in a single year, for, as soon as the snow melts, and the road becomes practically impassable until it is dried out no road can be constructed.

The section between Paxsons and McCullum contains some ground similar to that in the previous sections. The bulk of the work was sidehill grading and considerable grading and rockwork in the section between Paxsons and McCullum. The cost of the work was \$18,077.30, including local materials.

Between McCullum and Miller House, the road follows the Delta River through the mountains. The work done was sidehill grading and rockwork. The cost was \$12,473.28. This was formerly the most direct winter route from Valdez to Fairbanks and was often closed by overflows on the river. The worst part of the road was avoided.

The improvements on routes Nos. 4 and 6 have reduced the cost of freight. The saving on the contract for shipping supplies for telegraph stations in the interior as far as Fairbanks last year is \$7,896.33 on a shipment of 100 tons.

COPPER CENTER—CHITINA RIVER ROAD

This road is intended to connect the mouth of the Chitina River with the vicinity of Copper Center. As it is expected to start from the coast at Cordova, will reach the Chitina River, its northernmost point on the Copper River, its northernmost point on the Copper River, its northernmost point on the Copper River. The board desires to construct this road next year by the following winter. A location was selected on the main line near Copper Center as far as the mouth of the Chitina River, about 12 miles from the mouth of the Chitina River. The work was stopped by bad weather. The location will be completed early next year.

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

ll to Glacier House, a distance of 21 miles work on this section was very similar to that

er House to Willow Creek, a distance of 20 from Glacier House to Tonsina, the work ing, along the Tonsina River. Between k some side-hill grading was necessary, but - over comparatively swampy ground with clearing. This section was not completed. en Willow Creek and Gulkana, a distance 67. Most of the work done was between er Center an entirely new road being con- ground for a distance of about 10 miles. The

.....	\$385.58
linear feet.....	4,217.03
.....	4,029.96
.....	3,355.26
linear 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. amount given above, \$914.50 was spent on the rary repairs on account of damage sustained and to provide a means of crossing for foot r freezes.

GULKANA-MILLER HOUSE ROAD (NO. 6).

section of the Valdez-Fairbanks road. Its is the winter outlet for that part of Alaska range and west of Eagle, and throughout the egion on each side of the road. In addition outlet from the interior in summer. It has route 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 going into or coming out from the interior. ess, 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 new road was constructed. It is now availa- e, except for about 3 miles near Meiers Road s throughout. The cost of work done this

kana 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 difficult to obtain, this road was with high embankments and deep ditches of a specially constructed road machine at a cost considerably less than the rest. The cost per mile for this section was spent on the remaining 50 miles to Washburn in the corduroying of a few swampy places, bridges, and removing a number of slides.

From Washburn to Richardson, a distance of 21 miles, the work was \$13,397.14. A very bad section was over exceedingly bad ground requiring a great deal of work which had to be hauled some distance at great expense. Some of the worst ground was encountered in this section.

In the 21 miles between Richardson and McCarty \$15,074.15 was expended. The work done consisted in the corduroying along Tenderfoot Creek and in the construction of a road from Shaw Creek to McCarty. A great deal of work was necessary in this section and numerous slides were removed. Ever timber was easy to obtain. At Shaw Creek this winter to take the place of the old road, but which was found to be unusable. Tenderfoot to Shaw Creek goes over a high ridge. However, the road is in excellent shape for the present. It had been intended to improve this hill the present year, but lack of fuel prevented.

At the Tanana River a ferry was installed across a subsidiary channel to Miller House. A road was constructed across this island, a winter road, and bridged. At the south end of this road a road to the main river at McCarty. The towers on the river were made sufficiently high so that the cable in extreme high water would not touch the road, including the road and bridge, was not yet reported.

In the section between McCarty and Miller House, \$15,074.15 was expended. The work consisted of light and inexpensive work, but in a few places the work was fairly heavy. The difficulty in obtaining gravel at the few places that could not be drained, and the few places that could not be drained, made work of this nature encountered at the Dome, made work of this nature and expensive.

It was not possible to complete this section in the latter part of September or October, with 7 miles remaining unfinished. However, to use this road now, as all provisions and supplies for crews on the upper Delta were hauled in the summer.

The cost of work in the section between Miller House, a distance of 25 miles, was \$15,074.15. The work was light as a good deal of the road was already in place which was underlaid by gravel. A considerable amount of work was done in this section.

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 \$990, 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 reconnaissance 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	5,637.63	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 7B.....	\$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.....	7,177.49	161.40	7,338.89
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
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
Dry Creek-Newton.....	20.34	204.29	224.63
Submarine-Pay Streak.....		144.49	144.49
Grass Gulch.....	778.25	8.50	786.79
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.....	599.00	90.25	659.25
Sinrock Ferry.....	240.00	8.07	248.07
Tazlina Bridge.....	5.00	6.00	11.00
Innoko reconnaissance.....	21.00		12.00
Flagging trails.....		2,100.67	2,100.67
Chitna-Copper Center survey.....	57.40		57.40
Wintering stock.....	7,365.98	9,141.05	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.