

**THE BOARD OF ROAD COMMISSIONERS
FOR ALASKA**

1905 to 1917

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by

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for

Alaska Department of Transportation
and Public Facilities

December 1980

Prepared with the production assistance of the University of Alaska,
Arctic Environmental Information and Data Center, Anchorage, Alaska
and supplemental funding by the Alaska Humanities Forum.

PREFACE

On August 17, 1956 Secretary of Commerce Sinclair Weeks and Secretary of the Interior Fred A Seaton jointly announced that, effective September 16, the Alaska Road Commission, formerly a part of Interior and before that of the War Department, would be absorbed by the Bureau of Public Roads, a part of Commerce. Established in 1905 as an agency of the War Department and named the Board of Road Commissioners for Alaska, it became the Alaska Road Commission in the 1920's. In 1932 it was transferred to the Department of the Interior in the wake of a reorganization.

The 1956 transfer to the Bureau of Public Roads took place because in that year Congress included Alaska on a modified basis in the Federal Aid Highway program. Though this legislation eliminated much of the uncertainty about future funding, thus facilitating planning, it also contained several far-reaching directives. As previously stated, it called for the demise of the venerable Alaska Road Commission, which ended the existence of this 51-year-old agency. The Board of Road Commissioners for Alaska started its work in 1905 when less than a dozen miles of possible wagon roads existed in Alaska. It was directed by a board of road commissioners consisting of three military officers, one of whom occupied the position of president of the board, another that of chief engineer, and the third as secretary and disbursing officer.

The first major road built in the territory was the Richardson Highway from Valdez to Fairbanks. This route originated as a winter trail, but with the increased traffic caused by the rapid development of the placer gold deposits around Fairbanks and construction of the military telegraph line, "The Trail," as this route was originally known, was gradually improved. First it became a wagon road, later the commission upgraded it sufficiently to accommodate the model-T Ford, and eventually it became a modern, paved highway kept open on a year-round basis.

Construction methods changed radically from 1905 to 1956. The early labor consisted largely of building crude wagon roads, cutting brush, and flagging winter trails. During the 27 years from 1905 to 1932 the Alaska Road Commission developed an elaborate system of trails and sled roads, totaling more than 10,000 miles but less than 500 miles of low-standard roads. This system was designed to serve military needs as well as those of the largely itinerant population of fishermen, trappers, and miners. The commission eventually abandoned the system of trails and sled roads and instead built airfields. Heavy construction machinery gradually replaced hand labor and horses and wagons. The Alaska Road Commission acquired its first automotive equipment, surplus military vehicles, after World War I. Giant earthmovers that could haul twenty times as much material at greater speeds than the original equipment came into use, and where workers had earlier corduroyed mudholes to support horses and wagons, in the 1950's they laid asphalt to enable rapid, dustfree travel.

By 1956 the Alaska Road Commission had accomplished much. It had grown from a few dozen employees to a well-organized highway department. The headquarters staff in the early 1950's consisted of more than a hundred individuals, and district engineers at Anchorage, Fairbanks, Valdez, and Nome handled field operations with more than a thousand employees during the peak of the summer construction season. It had pioneered Alaska's transportation network--then consisting of 998.5 miles of through roads, some 1,234.6 miles of feeder roads, 1,361.3 miles of local roads, and many bridges, airstrips, trainways, and ferries which it had built and maintained over the years--and provided important employment opportunities for many Alaskans.

The year 1956 was indeed a milestone in Alaska's transportation history. For decades territorial leaders and citizens had argued that they were entitled to benefits bestowed by the Federal Aid Highway Act of 1916 and its various subsequent amendments. A significant measure, it helped revolutionize America by providing federal money for highway links between country and city and made the automobile widely popular as a new means of travel. The federal government would match state highway expenditures if the roads met its high standards. But in the western states, where the federal government owned large areas of "public domain"

which could not be taxed by the states and therefore produced no revenue, a more favorable matching ration than the dollar-for-dollar applicable in other states was devised. This formula was based on total area of the state, the proportion of public domain to the total area, the state's population, and the existing road mileage used for transporting the mails.

As members of Congress contemplated Alaska's vast, nearly roadless area and the fact that better than 99 percent was part of the public domain, they shied away from the expense of including the territory in the 1916 legislation. Alaska's delegates to Congress attempted time and again between 1916 and 1956 to amend the Federal Aid Highway legislation to include the territory, always unsuccessfully. Other noncontiguous possessions without Alaska's problem of vast size and huge public domain, such as Hawaii and Puerto Rico, had little public domain land and, therefore, participated in the national program much earlier than did Alaska.

It was not until the early 1950's that Congress, largely at the urging of the military, appropriated substantial amounts of money for an accelerated road construction program. Between 1950 and 1952 the Alaska Road Commission received \$20 million or more annually for these purposes. And even though appropriations from 1953 on dropped considerably after those three years, the precedent for more spending and the "defense" justification were set. After all, America and the Soviet Union were engaged in the so-called "Cold War," and the United States considered Alaska its forward bastion in that conflict. Also, Alaska was in a better position to participate financially because in 1955 the territorial legislature had raised the motor fuel tax from two to five cents a gallon. But even with this boost, monies from this source and other highway user taxes would amount to only slightly more than \$2 million a year, inadequate to cover even maintenance.

At the urging of Delegate E. L. "Bob" Bartlett, Congress decided to allow Alaska to use federal matching funds for both construction and maintenance. Congress arbitrarily set the territorial matching requirement at 10 percent. In return for these benefits, Bartlett agreed to have Alaska's share of the funds computed on a modified basis. Instead of giving the territory credit for all the public domain and nontaxable

Native lands, as would ordinarily have been the case, he proposed that only half of those public lands be used in the matching formula.¹ The committee agreed, but on the Senate floor Francis Case of South Dakota complained that Alaska would receive too much money in comparison with the contiguous states. Therefore, the fraction of the public domain used in computing the matching formula was reduced from one-half to one-third. Under this formula, Alaska was allotted \$13,390,000 in fiscal year 1958.² The same legislation, however, also excluded Alaska from the new 41,000-mile National System of Interstate and Defense Highways. To finance this program, Congress increased federal taxes on tires, trucks, trailers, buses, and motor fuel in the lower 48 states as well as in Alaska.³ But despite this obvious inequity, Alaska at last participated in the Federal Aid Highway program.

REFERENCES

1. E.L. Bartlett to Tennessee Plan Delegation, Alaska Statehood Committee and Robert Retherford, February 27, 1957, E.L.B. Papers, Statehood File, box 19, folder Legislative History, January-February 1957, U.A. Archives, Fairbanks, Alaska; To Stat. 377; U.S. Cong., Senate, Committee on Interior and Insular Affairs, Alaska Statehood and Elective Governorship: Hearings on S.50 and S.224, 83C., IS., August 17-25, 1953 (Washington: GPO, 1953), pp. 345-46; U.S. Cong., House, Subcommittee on Roads of the Committee on Public Works, National Highway Program, Federal Aid Highway Act of 1956: Hearings on H.R. 8836, 84C., 2S., February 7 - March 5, 1956 (Washington: GPO, 1956), pp. 179-180, 160.
2. Cong. Record, 84C., 2S., pp. 9203-9204.
3. Anchorage Daily Times, July 9, 1956; 70 Stat. 377, 378, 398.

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THE BOARD OF ROAD COMMISSIONERS FOR ALASKA

Although United States citizens traded and undertook sealing and whaling voyages in the North Pacific and the Arctic in the early nineteenth century, the government only slowly joined other nations in exploring the Far North. Numerous nations had searched for the Northwest Passage, but the United States did not officially participate in this quest until 1850, when Congress accepted two ships from the American merchant Henry Grinnell to join the massive search for the British Sir John Franklin arctic expedition. The Secretary of the Navy appointed Lieutenant Edwin Jesse De Haven to command.

Elisha Kent Kane, the most famous member of a prominent Philadelphia family and a surgeon on De Haven's expedition, launched his own expedition in 1853. When Kane failed to return on schedule, the navy dispatched two relief vessels under the command of Lieutenant Henry J. Hartstene. Later expeditions led by Isaac Israel Hayes and Charles Francis Hall followed, all exploring the arctic seas.¹ Although these explorers and their successors in the 1860's had no direct contact with Alaska, they established a tradition of scientific arctic exploration.

In 1865, two years before the American purchase of Russian America, the Western Union Telegraph Company undertook an audacious scheme--namely, to build a telegraph line from the United States along the Great Circle land route in North America to Siberia and the Amur Basin, there to connect with a Russian wire from Europe. The line was to pass through British Columbia and the Yukon Territory, through Russian America, and thence thousands of miles through Siberia. Much of the territory to be traversed was unexplored wilderness. The Western Union Telegraph Company invested heavily in the project, hoping to install two wires capable of handling a thousand messages a day at \$25 per message, which would have amounted to gross revenues of \$9 million annually.

There were to be three divisions, one each in Canada, Russian America, and Asia. Colonel Charles Bulkley assumed overall command, and

the directors chose Robert Kennicott to head the Russian-American division.² Kennicott had spent the winter of 1860-61 at Fort Yukon under the auspices of the Smithsonian Institution and the Chicago Academy of Sciences. Kennicott had worked hard and collected much ethnological and zoological material. For the Western Union Expedition, he engaged a few other naturalists and organized the "Scientific Corps" to gather data and specimens as official work permitted. The Scientific Corps even had its own flag, a scallop outlined on a blue cross, and members wore uniforms.³

The Russian-American phase of the telegraph work was further divided into two sections--one to explore the Yukon east from Nulato and connect with the party working north through Canada and the other to investigate the area between the Yukon and Bering Strait. Then, Kennicott suddenly died near Nulato in May 1866. William Healy Dall, a young scientist in the party, succeeded Kennicott as chief of the Scientific Corps, and work proceeded. In the summer of 1867 members of the expedition learned, much to their sorrow, that the telegraph project had been terminated because at long last the Atlantic cable had been laid successfully.⁴ This killed the commercial prospects for the overland telegraph line.

In the summer of 1867 the Coast Survey, the leading federal civilian scientific agency, undertook the first official government exploration of Alaska, which was intended to serve political purposes. The superintendent, Benjamin Pierce, ordered Coast Survey Assistant George Davidson, who had worked on the Pacific Coast since 1850, to prepare for a reconnaissance to the northwest. Davidson and his crew were to collect information which was to be used to lobby members of the House of Representatives to vote for the bill appropriating money for the Alaska purchase.⁵ They made the reconnaissance and compiled much useful information on the geography, resources, and coastal features of Alaska and produced a map of the region for the Department of State. In 1869 the survey issued another map (Alaska and Adjoining Territory), compiled from surveys by the Russian naval officer and cartographer M. D. Tebenkov, from Russian manuscript items obtained in Sitka, from the notes of naturalist William Healy Dall about the Yukon, and from Davidson's observations. In that same year, the Coast Survey also published harbor charts for Sitka, St. Paul in the Pribilof Islands, and two harbors on Unalaska Island.

Davidson returned to Alaska in 1869, but it was William Healy Dall who was the principal American scientist in Alaska during the early years following the purchase. Dall left on the first of his four cruises as a Coast Survey assistant in 1871. He and other agency personnel obtained specialized knowledge about Alaska as the Coast Survey slowly traced the 34,000-mile-long coastline of the new territory.

In 1869 the government sent to Alaska Charles F. Raymond, a young army captain, to investigate trade and discover whether or not Fort Yukon (established in 1846 by the Hudson's Bay Company at the junction of the Porcupine and Yukon Rivers near the Arctic Circle) was in American or Canadian territory. Raymond wrote a superb description of the Yukon River and noted various biological resources, such as spruce and birch, but found no signs of minerals in the area. He believed that agriculture would be of secondary importance, for individuals were not interested in it and engaged in other pursuits.⁶ A couple of years later, in 1871, the Office of the Chief of Engineers utilized Raymond's notes when it published a map of the Yukon River.

The War Department's responsibility for mapping the Far West dropped in the early 1880's, and it again turned its attention to Alaska. Lieutenant Patrick Henry Ray, while attached to the Signal Service from 1881 to 1883, led a 10-man expedition to Point Barrow as part of U.S. participation in the International Polar Year. There he observed the weather, tides, and the earth's magnetism and made several overland explorations from his Point Barrow base.⁷

After Ray returned to St. Michael at the mouth of the Yukon River in the fall of 1883, he met a group led by Lieutenant Frederick Schwatka. The latter's party had just finished a summer's reconnaissance which took them from southeastern Alaska, across the coastal range, and down the Yukon River. Schwatka's official report described his journey and also mentioned that the army would have no problems controlling the Native population. Like countless summer travelers after him, he complained about "the blistering heat and dense swarms of gnats and mosquitoes that met us at every turn."⁸

A year later, Lieutenant W. R. Abercrombie led a party on a difficult reconnaissance up the ice-choked Copper River, passing the Childs and Miles Glaciers before the lateness of the season forced a return to the coast.⁹

In 1885 the army ordered Lieutenant Henry Allen into the Prince William Sound region and ordered him to ascend the Copper River before the ice broke. Allen and his group successfully accomplished their goal, then crossed the Alaska Range to the Yukon River. Allen was dubious about Alaska's agricultural potential but noted that hardy vegetables could be raised in the Yukon Valley. He also pointed out that it was possible to build a road from Prince William Sound to the Yukon River.¹⁰

After Allen's expedition in 1885, the War Department made no further appropriations for Alaskan explorations. In essence, the army's role in Alaskan scientific exploration between 1867 and 1886 can be divided into three phases. The first occurred between 1867 and 1877, when the army governed the region with headquarters at Sitka and various posts scattered along the southern coast. During this period the army did very little exploratory work and mainly restricted itself to tours of inspecting generals and one reconnaissance along the Yukon River. The Signal Service dominated the second phase, beginning before the army left Alaska and ending in the early 1880's. Army personnel made meteorological observations in the Aleutians and the Yukon-Kuskokwim Delta during this time, which contributed mainly background information. The third phase resembled the pre-Civil War explorations of the trans-Mississippi West undertaken by the Corps of Topographical Engineers, which after 1863 ceased to exist as a separate organization and became the U.S. Army Corps of Engineers. The original overland reconnaissance resulted principally from one departmental commander's curiosity about an unknown wilderness combined with the ambition of his energetic aides. This phase ended with Henry Allen's 1885 exploration of the Copper, Tanana, and Koyukuk rivers.¹¹ From 1886 until 1898 the only official U.S. expeditions to Alaska were to the Selawik and Kobuk River valleys by officers of the navy and the Revenue Service from 1883 to 1885. Geological studies of Alaska on a regular basis did not begin until 1898. Science in the military services declined, and in 1885 Congress and the press criticized the newer civilian scientific bureaus elsewhere in the federal government when the so-called Allison Commission directly tackled the issue of civilian versus military control of federal scientific activity. It proposed the creation of a federal department of science

and also suggested the consolidation of surveying and mapping agencies. This was never done. It took some years, prolonged conflict of personalities, meager and uncertain appropriations, and various reorganization proposals before new programs worked smoothly.¹²

The navy's hydrographic office and the Coast and Geodetic Survey continued conducting hydrographic surveys in Alaska. The former incorporated on its charts the results of surveys by naval vessels in southeastern Alaska. After 1880, however, it concentrated on mapping foreign waters and restricted itself to the coasts facing and bordering Siberia. The Coast and Geodetic Survey, with principal responsibility for domestic waters, continued its work and issued charts, particularly for southeast Alaska and the Aleutians.¹³ In short, various agencies and bureaus of the federal government had accomplished much work in Alaska during this short time with very limited financial resources. Historian Morgan Sherwood, a student of federal exploration in Alaska, concluded that "given the tiny population, the remoteness of Alaska, the limited economic inducement to development, the national political, intellectual, and economic atmosphere, federal exploration of the Far Northwest was relatively fast, extensive, and progressive."¹⁴

But if the federal government's interest in Alaska was not continuous, the stream of hardy individuals kept coming North to try to make their fortune. Written records reveal that as early as 1869 William Henderson and James Strichan had gone to the Chilkat country to prospect. In 1871 a soldier found gold in the Indian River on the outskirts of Sitka, and in 1880 Joseph Juneau and Richard T. Harris found the precious metal near the site on which Juneau was to be built. Prospectors roamed throughout southeast Alaska, and before long a few made their way over the Chilkoot Pass to the headwaters of the Yukon River.¹⁵

In 1874 miners discovered gold in the Dease Lake region in British Columbia. As news of the discovery spread down the Stikine River, it sparked a minor gold rush. Fort Wrangell, at the mouth of the Stikine, boomed as a transfer point of cargo and men from ocean craft. In 1874 some three thousand people traipsed through Fort Wrangell, and it soon became a popular wintering place for miners, resulting in the construction of stores, bakeries, restaurants, and a saloon and dance hall.¹⁶ In the early 1880's, numerous prospectors were examining the bars of the Yukon

River for gold, and by 1886 some two hundred miners had gradually worked their way down the Yukon to the mouth of the Stewart River. Leroy N. McQuesten and his partners built a trading post, and that winter Arthur Harper, one of the other traders, convinced two prospectors to explore the gravels and bars of the Fortymile River which joined the Yukon River 100 miles farther downstream. The two found gold later in the season, and a minor stampede followed.¹⁷

That same year gold was discovered at Franklin Creek, a tributary of the Fortymile River in American territory. More discoveries followed. Mining activities began on Dome Creek in 1893, in the placers of Wade Creek in 1895, and in those of Chicken Creek in the spring of 1896 the center of the footloose mining population had shifted from Fortymile in the Yukon Territory to Circle City on the banks of the Yukon River on American soil.¹⁸ In the late fall 1896 George Washington Carmack and his two Indian companions found gold in quantities never before seen in the Yukon. Soon thousands rushed to the Klondike in Canada's Yukon Territory.¹⁹

It was no wonder that the mineral discoveries awakened the interest of the U.S. Geological Survey. In 1895 Congress ordered it to report on the gold and coal resources of Alaska and appropriated \$5,000 for the study. Two scientists spent a month in southeastern Alaska, then traveled to Kodiak, the Alaska Peninsula, and the Aleutian Islands. The following year Congress appropriated another \$5,000, which financed a mineral survey of the Yukon gold regions. In his 1896 report, the director of the Geological Survey described the work performed during the last couple of field seasons and recommended that the survey's Alaska budget estimate of \$2,500 for fiscal year 1897-1898 be increased to \$25,000. The recommendation roughly coincided with the big Klondike strike of the fall.²⁰

The rush focused worldwide attention on Alaska and lured thousands to the Klondike and Alaska, among them many not seeking gold, such as sportsmen, scientists, political and civic figures, con men, and fugitives from the law. They came from all parts of the United States, Canada, and abroad. At the same time, federal bureaus, some new to the North, began work to fill the knowledge gaps about the region and to disseminate available data in their respective fields. For example, the Bureau of

Navigation published a circular on navigational conditions on the Yukon and Porcupine rivers; the Labor Department issued bulletins on opportunities, prices, and problems of capital and labor in the gold fields; and the Department of Agriculture dispatched investigators to evaluate the agricultural possibilities of the North.²¹

Congress also reacted to the gold rush, and between 1897 and 1899 it passed two major pieces of legislation. The first made various provisions for the construction of railroads and extended the homestead laws to Alaska. It also provided that citizens of Canada were to be accorded the same mining rights as American citizens were granted in the dominion and that goods could be transported duty free between Alaskan and Canadian ports if the latter granted reciprocal rights.²² The other piece of major legislation was a clarifying act which provided for the punishment of crime in Alaska and also gave a code of criminal procedure. This act was very complex and lengthy. It codified the laws of Oregon and modified them for Alaska. It also included a tax system, the first levied in the district, and legalized the sale of liquor.²³

Lawmakers introduced a great many Alaska measures between 1800 and 1901, including bills pertaining to Native welfare, reindeer herding, education, the fisheries, the judiciary, and a recurrent request for an Alaska delegate to Congress. In 1900 Congress passed a civil code and a code of civil procedure. With this piece of legislation, Congress began to deal directly with the problem of providing a general governmental system for Alaska. The measure divided Alaska into three parts, and courts were established at Sitka, Nome, and Eagle City on the Yukon, with authority to convene elsewhere when necessary. It also made possible the incorporation of municipalities for the first time.²⁴

As early as 1871, disputes had arisen over the Canada-Alaska boundary, but little attention had been paid to them. Two routes to the gold fields of Alaska led through Haines Mission and Dyea at the head of Lynn Canal, claimed by Canada. During August and September of 1896, Captain D. D. Gaillard of the Corps of Engineers conducted a preliminary examination of the disputed area and concluded that the Canadian claims were unjustified. In order to protect its interests until the matter could be settled officially, the United States once again ordered troops North. Army troops arrived at Dyea and Fort Wrangell in February 1897,

and a detachment of troops was stationed at Skagway.²⁵ In 1898, both governments agreed that a joint commission should settle the matter. No agreement was reached, however, and in 1903 officials renewed negotiations. On October 20 of that year an arbitration tribunal decided in favor of the American claim except for two small islands which went to Canada.²⁶

After receiving conflicting reports about disorders in Alaska in the summer of 1897, the War Department ordered Captain Patrick Henry Ray and Lieutenant Wilds P. Richardson to investigate. The two officers were to determine the extent of the troubles, whether the food supply was sufficient to sustain the population, and if troops would be required to enforce law and order.²⁷ The two officers arrived at St. Michael near the mouth of the Yukon River in August 1897. They observed stranded and destitute people and feared that the coming winter might bring starvation. Ray requested that a detachment of troops be sent to St. Michael for temporary duty, and in September of that year Colonel George M. Randall with two officers and 25 enlisted men arrived and established a military station, known as Fort St. Michael.

By late fall Ray had decided that it was necessary to station a permanent military force at a central point in interior Alaska. The presence of the troops, he reasoned, would not only have a salutary moral effect on the population but also aid the civil authorities in maintaining law and order.²⁷ Since most settlements were located along the Yukon River, Ray recommended that the first and largest post be located on the north bank of the Yukon River opposite and slightly below the mouth of the Tanana. This was a geographically and commercially central location. In 1899 this became the site for Fort Gibbon.²⁸ In case the War Department decided to establish a post on the upper Yukon River, Ray recommended a site at the mouth of Mission Creek near Eagle City close to the Canadian border. In 1899 the War Department chose this approximate site for the construction of Fort Egbert.

Finally, in March of 1898, based on Ray's and Richardson's recommendations, the Secretary of War directed that three military exploring expeditions investigate interior Alaska. The orders were very specific, stating that the expeditions collect

all the information valuable to the development of the country regarding topographical features, available routes of travel, feasible routes for railroad construction, appropriate and

available sites for military posts, mineral resources, timber, fuel, products, capability of sustaining stock of any kind, animals, etc., should be embodied in a report with necessary accompanying maps and plates, to give the department information on which to base its action, and the public as full an understanding as possible of the resources, etc., of the country.²⁹

The first of these expeditions was to drive reindeer north from southeastern Alaska and then to explore the mark trails from the Yukon to the Tanana. The second expedition, under the command of Captain William Ralph Abercrombie, was to explore from Valdez to the Copper River and tributaries of the Tanana. Captain Edwin Forbes Glenn assumed command of the third expedition. He was ordered first to Prince William Sound to explore routes to the Copper and Susitna Rivers; from there he was to proceed to Cook Inlet and explore north from tidewater to one or more crossings of the Tanana. Both expeditions suffered severe hardships, and the results were hardly worth the time, energy, and money expended. The exception was the valuable work performed by topographical assistant Emil Mahlo and geologist F. C. Schrader with the Abercrombie party and geologist W. C. Mendenhall with Glenn. The U.S. Geological Service had loaned the latter two men to the War Department for the expeditions.³⁰

Army explorers discovered suitable routes into the interior and recommended the construction of a military road. They also knew that prospectors would eventually require some kind of transportation in the future and encouraged tying various mining camps into the same connecting line. A proper system of trails, roads, river transportation, or a combination of all of these would do much to enhance the economic prospects of the North.³¹

In March 1899 the War Department ordered that an exploring expedition go to Valdez, open a military road to Copper Center, and from there go by the most direct route to Eagle City. Captain Abercrombie led the expedition that was to survey and mark the road, which was also to be open for public travel. In late April 1899 the members of the expedition started construction of the road. Originating at the military reservation at Valdez, it ran up the Low River valley through Keystone Canyon and Thompson Pass to the Tonsina Valley, where construction ceased in October. Using only hand tools, the soldiers had built a 93-mile trail suitable for pack horses.³²

War Department orders of March 1899 also directed the organization of a Cook Inlet exploring expedition under the command of Captain Edwin F. Glenn to explore the country northward via the Matanuska, Susitna, Yentna, and Kuskokwim Rivers for the most direct and practicable route from tidewater to the crossings of the Tanana River. It was a continuation of Glenn's previous exploratory work, not a road-building enterprise. His primary duty was to find a direct route to the Tanana and from it to the military posts on the Yukon. Only the section of Glenn's expedition led by Joseph Herron made an important contribution when it accomplished the first official exploration of the upper Kuskokwim.³³

In retrospect the army was not the best organization for exploring the North at that time. Soldiers seldom made any surveys. U.S. Geological Survey geologists or civilian topographers did most of the mapping. Army parties were too large for primary exploration, and much backtracking was necessary to carry up supplies. And finally, the army's cumbersome and regulation-bound expeditions compared unfavorably with the extremely mobile and independent Geological Survey parties.³⁴

When the War Department created the "Department of Alaska" in 1900, garrisons were located at Fort Davis near Nome, Fort St. Michael near the mouth of the Yukon, Fort Gibbon near Tanana, Fort Rampart, Fort Egbert at Eagle, Fort Liscum near Valdez, and Fort Wm. H. Seward at Haines. To communicate with the nation's capital from the Yukon River generally required six months for a one-way message. It was soon obvious that if the army was to perform its function properly, it would be necessary to connect the Department of Alaska Headquarters at Fort Saint Michael with the other army posts by military telegraph and cable lines. The entire Alaska system then needed to be tied in directly with Washington, D.C. Responding to this need, Congress appropriated \$405,550 for this purpose on May 26, 1900.³⁵

Construction of the Washington-Alaska Cable and Telegraph System, or WAMCATS as it was called, got under way promptly. Fort Egbert became the base for building the first telegraph line, a 12-mile segment which ran along the Yukon River eastward to the Canadian boundary. There it connected with the previously constructed Canadian line, which ran to Dawson City and Whitehorse. After completion of the 12-mile stretch, Fort Egbert could send messages to Dawson and Whitehorse. From there

they were carried overland to Skagway and then sent by mail ship to Seattle to be retelegraphed to any part of the contiguous United States.³⁶ When the Canadians completed the trans-Canadian line to Vancouver in June 1901, it became possible to contact the contiguous states directly from Fort Egbert.³⁷

In 1900, telegraph lines were strung between Nome and Fort Davis, a distance of four miles, and to Port Safety, about 20 miles distant. The next year, 1901, saw much construction activity. The first undersea cable in Alaska crossed Norton Sound, connecting Port Safety with Fort St. Michael, and soldiers under the command of Lieutenant George Gibbs completed the 448-mile telegraph line from Fort St. Michael to Fort Gibbon. Construction between Eagle and Valdez lagged, however, and Brigadier General A. W. Greely, the chief of the Signal Corps, sent 21-year-old Lieutenant William Mitchell to Fort Egbert to investigate delays in connecting the telegraph line to the south. Mitchell made his base at Fort Egbert between 1901 and 1903 and directed the building of the Eagle-Valdez line to the Tanana River, some 153 miles, and the 204-mile segment of the Goodpaster line, all under rather difficult conditions.³⁸

In the summer of 1902 Mitchell completed the line to Tanana Crossing, where he met Captain George Burnell who had built the line from Valdez. Messages could now be sent from Fort Liscum on Prince William Sound to Fort Egbert on the Yukon, then retelegraphed over the Canadian line to Vancouver and Seattle. Telegraphic messages from southeast Alaska went through Skagway and Whitehorse and down the Canadian line after a new submarine cable was laid from Juneau to Skagway in the summer of 1902.³⁹

The final work consisted of joining the Fort Egbert-Fort Liscum line to the one from Fort St. Michael, which extended only to Baker on the Tanana River. In January 1903 Lieutenant Mitchell mushed from Eagle to the confluence of the Goodpaster and Tanana Rivers, thus discovering an excellent route for the line. After incredibly hard work, Lieutenant Mitchell met Lieutenant Gibbs near the Salcha River on June 27, 1903, thus making the final connection in the trans-Alaska telegraph system. The men of the Signal Corps had completed the 1,506 miles of overland lines and a few hundred miles of submarine cable in just three years, one month, and one day, a truly impressive achievement against, at

times, overwhelming odds. The government had spend approximately \$617 per mile for the overland lines and about \$452 per mile for the submarine cable.⁴⁰

In 1903 Congress appropriated another \$485,000 for the construction of submarine cables from Juneau to Sitka and on to Seattle, a distance of 1,377 miles, but it was not until 1904 that these lines were completed. Another congressional appropriation in April 1904 provided money for laying a submarine cable from Sitka across the Gulf of Alaska to Valdez, a distance of 600 miles. This project was also accomplished in 1904, thus completing an all-American telegraph system.⁴¹

Completion of the system did not end the job. Now arose the difficulties of maintenance. Stationed at log cabins spaced 40 miles apart, detachments of soldiers maintained the line. Each detachment consisted of one Signal Corps repairman and two army soldiers. Through blizzards, summer heat and mosquitoes, forest fires, and storms these men kept the line operating. It was lonely and monotonous duty at low wages. In 1907 the Signal Corps began to use wireless or radio equipment, and by the end of 1915 WAMCATS had reduced its land lines to 848 miles. In 1936 Congress renamed the organization the Alaska Communication System, and by the end of June 1940, radio had entirely replaced the cables.⁴²

The gold discoveries had focused congressional attention on Alaska. They also brought the army back to the North once again, this time to stay and play an important role in the territory's development. With all the activity at the turn of the century, the United States Senate appointed a subcommittee of its Committee on Territories to journey to Alaska in 1903 and make a "thorough investigation of existing conditions, her resources and her needs, with the purpose to ascertain and report what, if any, legislation is required for that district."⁴³

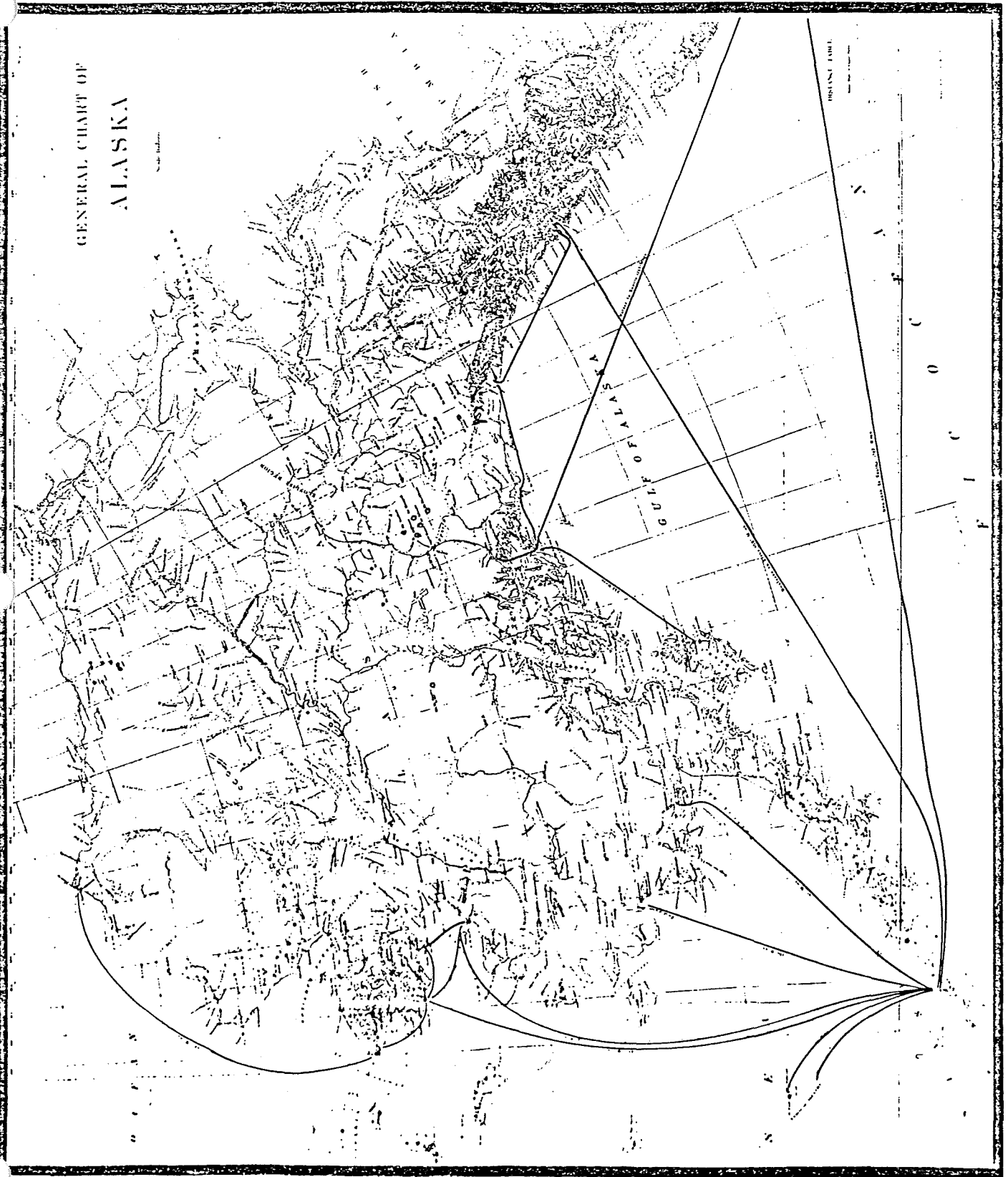
The four senators assigned to the subcommittee met in Seattle and sailed for Alaska on June 28. They cruised through the Inland Passage to the head of Lynn Canal, stopping at various settlements along the way. They went over the White Pass to Lake Lebarge, the Lewes River, and along the upper Yukon to Dawson City, where they visited the gold fields and examined the Yukon Territory's form of government. From Dawson the group continued downstream all the way to St. Michael, stopping at various settlements and army forts. At St. Michael the U.S. Revenue

Marine Service cutter McCulloch took the senatorial party aboard, and they visited Nome, St. Paul in the Pribilof Islands, Dutch Harbor, and Unalaska, passing through the Aleutian Islands into the North Pacific. They continued their journey along Alaska's southern coast, stopping at Karluk and Kodiak, Valdez and Sitka. The senators visited Juneau a second time and returned to Seattle on August 26. Throughout their extensive journey, the senators held hearings and took testimony from residents. By the time they returned to Seattle, they had covered a distance of 6,600 miles, but only 111 of those miles on land⁴⁴ (Figure 1).

During the course of their journey, the senators took testimony from 61 witnesses in 11 settlements and towns. The witnesses were concerned with a wide variety of subjects, ranging from agriculture to boundary questions, coal and copper deposits, the necessity for an elected delegate to Congress, fish hatcheries, freight rates, game laws, the insane, the need for lighthouses and better mail service, surveys and taxes, and the need for a territorial government and better transportation. Numerous individuals addressed the lack of roads and trails. William Daily of Ketchikan told the senators that he represented the Unuk Mining, Smelting, and Transportation Company of Danville, Illinois. The company's mines were located 42 miles from the mouth of the Unuk River. Daily told the group that his company at the time was constructing a wagon road to its mines at an estimated expense of \$50,000. Daily reminded the senators that the Canadian government built roads into territories to aid economic development, but no similar provisions were made in Alaska, he complained.⁴⁵

At Eagle on the Yukon River, the senators called on Lieutenant William Mitchell of the U.S. Signal Corps, then in charge of building part of the Alaska telegraph system, to testify on territorial conditions and needs. Mitchell told the senators that it would cost more than \$2 million to construct a fair wagon road from Eagle to Tanana Crossing and from there to the head of steamboat navigation at Chena at the confluence of the Chena and Tanana Rivers, a distance of about 520 miles. The lieutenant related that a wagon road from Tanana Crossing to Copper Center, a distance of 165 miles, would be easier to construct because the country was not as rugged as along the Tanana or near Eagle. It would be as expensive as the others because materials would have to

Figure 1. Route of Senate Subcommittee on Territories 1903 trip to Alaska.



Source: U.S. Cong., Senate. 1909. *Conditions in Alaska*.

be transported across the difficult coastal mountains. A continuation of the route from Copper Center to Valdez, although only 103 miles in length, would be difficult to build because of the mountainous character of the country. Mitchell told the senators that a prospective wagon road would leave Copper Center and follow a low ridge to the Tonsina River, a distance of about 25 miles; from there to Teikel Station was another 24 miles, thence 23 miles to Saina, 13 miles to Dutch Flat, 8½ miles to Keystone Station, and a final 12 miles to Valdez. A military trail already existed between Valdez and Copper Center. This trail connected with another one and led to Tanana Crossing. Although very crude, it made possible the transportation of supplies with pack animals.⁴⁶

Abraham Spring of Fairbanks pointed out that next to the need for a comprehensive mining code ranked roads and trails. Only Congress could appropriate the sums necessary to construct the wagon roads connecting Alaska's principal settlements. Miners themselves could build the feeder roads. Spring suggested that miners be permitted to perform road work annually in lieu of the required assessment labor on claims and that the whole system of road building should be under the direction of commissioners who knew the needs of the various districts. The lack of good trails and wagon roads made mining very expensive. Miners and trading companies had built many trails and bridges by subscription, each contributing as much as they could afford. But each fall the winter trails had to be reconstructed, and each spring the summer trails and bridges had to be rebuilt. Spring explained to his audience that there was "no intelligent supervision of the work, there is no engineering skill."⁴⁷

Federal Judge James Wickersham supported the contention of many witnesses that the cost of getting provisions from the navigable streams, particularly the Yukon, was so high as to be almost prohibitive. Witnesses had repeatedly asked that the government build wagon roads from points along the rivers to the mining camps. Wickersham explained that the development of large areas of low-grade mining ground around Nome had only been made possible by competitive, cheap ocean transportation. Goods and supplies were landed almost as cheaply as they could be bought in Seattle, Portland, or San Francisco. Supplies destined for the areas along the Yukon, however, either came down the river via Skagway and

Dawson or upriver from St. Michael. Miners had to wait until winter to transport their goods on dogsleds from distributing points on the Yukon and its tributaries to the mines. Supplies destined for miners working at Coldfoot in the Koyukuk landed at Bettles, at the head of navigation but below the mining center, at \$135 per ton. From Bettles, supplies had to be forwarded to Coldfoot in the summer by a scow pulled by horses along the riverbank or, even more laboriously, by poling boats and in the winter on dogsleds. This added an additional \$200 a ton to freight costs, making the total \$335 per ton at Coldfoot. To illustrate even further, the freight on a 50-pound sack of flour delivered at Bettles came to \$3.37.5. Transporting the same sack to Coldfoot cost an additional \$5.00 or a total of \$8.37.5. The 50-pound sack of flour eventually retailed for well over \$10.00. A table showing 1903 freight rates from St. Michael to various Yukon River points follows:

ALASKA FREIGHT RATES, 1903,
FROM ST. MICHAEL TO YUKON RIVER POINTS

Destination	North American Transportation and Trading Company's local-freight tariff between St. Michael and Dawson. (Rates in dollars per ton of 2,000 pounds or 40 cubic feet, at ship's option.)				Northern Commercial Company. Through-freight tariff between San Francisco or Seattle and Yukon River points. (Rates in dollars per ton of 2,000 pounds or 60 cubic feet measurement, April 10, 1903.)	
	Miles	Up-stream	Down-stream	Miles	North bound	South bound
St. Michael.....	0	-----	\$45.00	1,601	\$ 135.00	\$27.00
Kotlik.....	67	\$15.00	43.00	1,534	35.00	30.00
Andreafski.....	181	18.00	41.00	1,420	38.00	32.00
Russian Mission.....	293	22.00	39.00	1,308	40.00	34.00
Holy Cross.....	358	24.00	37.00	1,234	40.00	34.00
Anvik.....	405	26.00	36.00	1,196	40.00	35.00
Greyling.....	427	27.00	36.00	1,174	45.00	35.00
Kaltag.....	570	31.00	33.00	1,031	50.00	38.00
Nulato.....	610	33.00	32.00	991	50.00	39.00
Koyukuk mouth.....	630	34.00	31.00	971	50.00	39.00
Novikakat.....	762	38.00	28.00	839	55.00	42.00
Weae-Tanana.....	901	42.00	25.00	780	55.00	45.00
Baker Creek.....	981	60.00	45.00	1,000?	-----	-----
Chena-Fairbanks.....	1,201	70.00	55.00	700?	80.00	65.00
Rampart.....	981	44.00	23.00	620	55.00	47.00
Fort Hamlin.....	1,072	46.00	21.00	529	57.00	49.00
Dahl River.....	1,082	47.00	21.00	519	57.00	49.00
Fort Yukon.....	1,224	50.00	18.00	377	60.00	52.00
Circle.....	1,309	53.00	15.00	292	65.00	54.00
Star City.....	1,479	56.00	12.00	122	70.00	58.00
Eagle.....	1,499	56.00	11.00	102	70.00	58.00
Cliff Creek.....	1,537	57.00	10.00	64	70.00	59.00
Fortymile-Cudahy.....	1,548	58.00	10.00	53	70.00	59.00
Dawson.....	1,601	60.00	-----	0	70.00	60.00
Bergman.....	1,070	-----	-----	-----	100.00	75.00
Bettles.....	1,150	-----	-----	-----	135.00	95.00

Wickersham told the senators that to develop interior Alaska's mining potential, the following wagon roads were essential:

- 1) from Valdez across to Eagle City by way of the Fortymile River;
- 2) a branch road from Tanana crossing, north along the Tanana River to Fairbanks and thence across to Rampart;

- 3) a branch road from Circle City on the Yukon to Fairbanks;
- 4) a continuation of the Tanana Valley road to Coldfoot on the Koyukuk; and
- 5) branch roads from these main trunk lines to the various mining centers.

When asked what institutional framework was needed for road building, Wickersham suggested that a three-member road commission be appointed in each of Alaska's three judicial districts with the territorial governor ex officio member of each commission. The chief executive was the right person for the job, Wickersham suggested, for he received a good salary and had very little to do. The construction should be financed from the monies raised in each division from the license fees paid outside of incorporated towns.⁴⁸

In addition to much testimony by individual witnesses favoring the construction of roads and trails, two communities also submitted formal resolutions to the senators. The citizens of Eagle regarded the lack of roads and trails the main drawback to the development of the country. The construction of roads and trails would encourage the mining industry; furnish routes for the Postal Department and decrease the cost of mail delivery; save the judiciary thousands of dollars annually in traveling fees and reduce per diem expenses of marshals, witnesses, and jurors; and it would save the War Department thousands of dollars in freight costs. The citizens of Nome urged Congress to make liberal appropriations for the construction of permanent roads, trails, and bridges between Nome and settlements in the interior and on the coast, and that the trails and roads be provided with guideboards or stakes of sufficient height to be readily observed above the snow line.⁴⁹

After their return from the extensive Alaska trip, the senators summarized their impressions to their colleagues. They had been awed by Alaska's vastness and surprised at the lack of transportation facilities. "Outside the few and scattered settlements called towns, which are found in different parts of Alaska proper, and most of which are but the centers of mining interests," they commented, "there is not to be found a single public wagon road over which vehicles can be drawn summer or winter." It was true. The military trail between Valdez and Eagle, constructed by the War Department in 1899-1900, was only fit for saddle

and pack animals. Summer transportation relied on the waterways and on packhorses and on dog teams during the long winters. The senators observed that Alaska's development depended "more upon the improvement of transportation facilities than upon any other one instrumentality." The federal government had done nothing to construct a transportation system. "It has neither built roads nor provided other means of transportation," the senators stated, "and the hardy and adventurous who have sought the wealth hidden in the valley of the Yukon, the Koyukuk, and Seward Peninsula have done so amidst difficulties that can only be understood by those who have made a study of the situation." The senators contrasted federal inactivity with Canadian achievements in the Yukon Territory. Between 1898 and 1903, the Canadian government had spent \$1,025,000 to construct and maintain 850 miles of wagon roads and winter trails leading to the camps from Dawson. Some 225 miles of the total had been thoroughly constructed and carried the heaviest of freight, such as machinery so large as to require the use of six to 12 horses.⁵⁰

The subcommittee recommended that the government construct a system of transportation routes and that the basis for such a system should be a well-built wagon road connecting the Pacific Ocean at Valdez with Eagle on the Yukon River, a distance of approximately 400 miles. The road should follow the general lines of the military trail which Captain Abercrombie and his men had built in 1899-1900. The military telegraph line, recently completed, followed the same route. The committee explained that Valdez was the finest most northerly harbor on the Pacific Coast, open and ice free throughout the year, and a natural gateway to the interior and a key to its economic development. Eagle, once connected by a road, should become the distributing point for American goods for most of the vast Yukon basin. Most importantly, the committee believed that a system of wagon roads and trails would allow miners to use modern heavy machinery in extracting minerals, induce immigration, and even result in a permanent population "wedded to the soil." In conclusion, subcommittee members stated that it was "as much of a duty to build the road [between Valdez and Eagle] and secure the American interests of the district to the United States as it was to build the first Pacific railroad to connect the Pacific Coast with the territory east of the Rocky Mountains." To finance such a program of road con-

struction, senators suggested that the taxes on the salmon fisheries be increased and that, together with already available revenues, these monies would "constitute an annual fund which, if wisely used, will result in a grand advance in Alaska's development and wealth."⁵¹

The subcommittee had distributed its report to the full Senate on January 12, 1904, and on the 15th a deluge of Alaska bills descended upon both houses. Most of these measures were referred to the Committees on Territories, and those bodies held extensive hearings in an attempt to coordinate the different parts of the Alaska program. An appropriation to conduct a preliminary survey of a wagon road from Valdez to Fort Egbert at Eagle and for a military trail between the Yukon River and Coldfoot passed quickly. The Secretary of War was to make the necessary arrangements.

Thereupon, the War Department appointed J. M. Clapp, an assistant engineer in the Seattle office of the Corps of Engineers, to head the survey parties. Clapp assigned four of these parties, with a total of 48 men, to the Valdez-Fort Egbert survey, each to cover approximately 100 miles of the proposed wagon road. Clapp appointed Oscar A. Piper and two assistants to survey the Yukon-Coldfoot route. The first two parties sailed from Seattle on May 31, 1904 for Skagway. From there they went via the White Pass and upper Yukon to Fort Egbert. The remaining two, together with 25 packhorses, left Seattle on June 1, 1904 for Valdez to begin their work at that end. On August 14, 1904 the four parties had completed the 430-mile survey, and Clapp estimated that it would cost \$3,500 per mile or approximately \$1.5 million for building the wagon road from Valdez to Fort Egbert.⁵²

In the meantime Piper and his men and pack animals continued downstream on the steamer John Cudahy and on June 21 landed opposite Fort Hamlin, an abandoned Alaska Commercial Company trading post named for Charles Summer Hamlin, an assistant secretary of the Treasury between 1893 to 1897 and a commissioner at the convention between Great Britain and the United States in 1897 to determine the fur seal-fishery controversy. Situated 40 miles northeast of Rampart, the Yukon here emerges from the flats and narrows into a single stream, flanked on either side by densely timbered ridges. After cutting trail for a couple of days, the party left the Yukon on June 24, surveyed in a northwesterly direction,

and reached Coldfoot on July 12. The party concluded its field work on August 14. Piper found about 80 well-built cabins at Coldfoot, most of them deserted for the mining season. He estimated that Coldfoot had a winter population of about 60 souls, and the whole Koyukuk Valley a population of approximately 300 miners. He calculated that it would cost about \$6,000 to build the 126-mile trail, sufficient to meet the current needs of the miners (Figure 2).⁵³

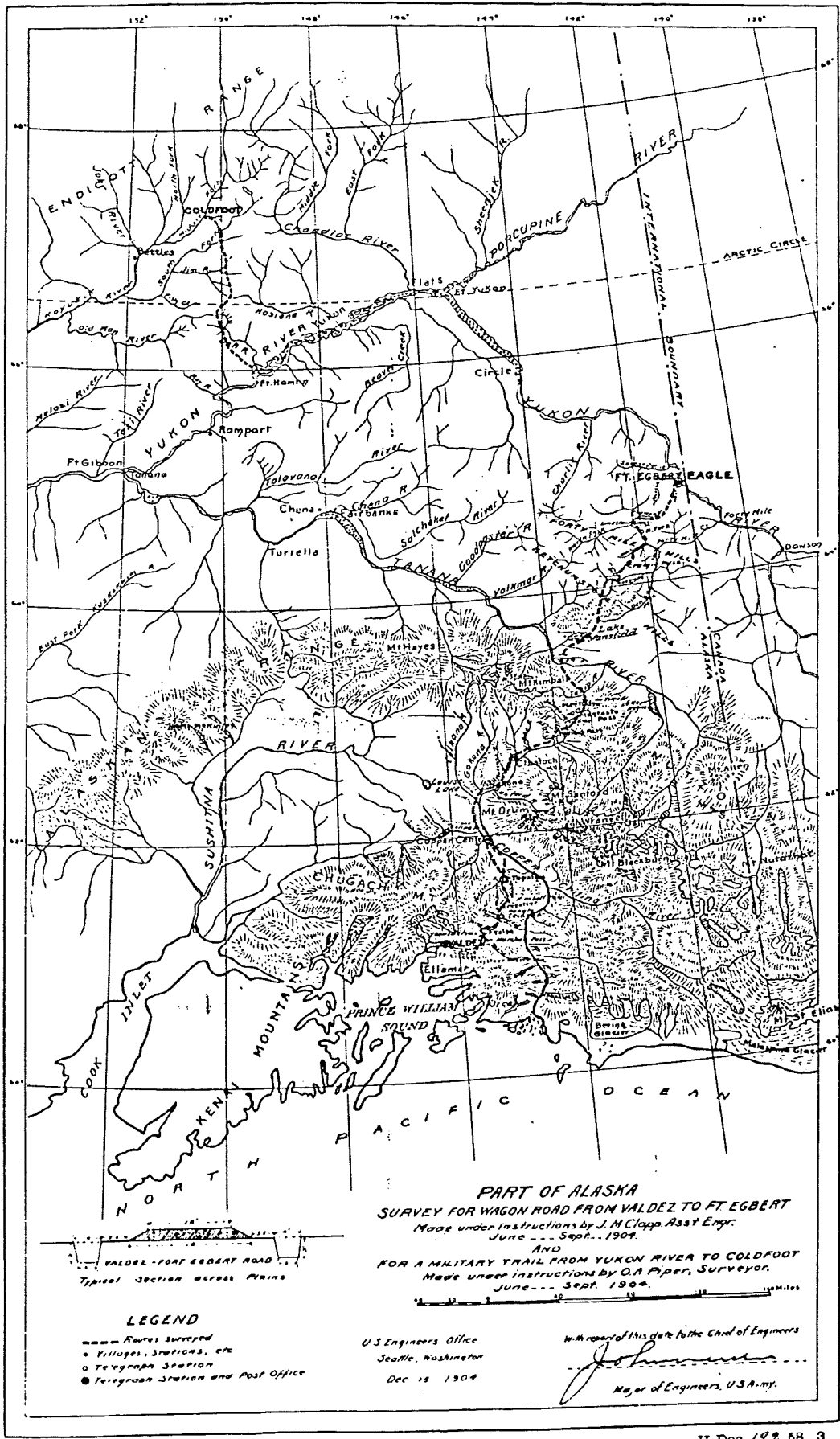
Knute Nelson, U.S. Senator from Minnesota since 1895 and the one most actively involved with Alaska legislation since his 1903 visit North, introduced a measure in 1904 reapportioning the money received for licenses outside of the towns. It designated such fees the "Alaska Fund" and gave five percent to the Secretary of the Interior for the care of the insane, 25 percent to elected school boards under the superintendency of the territorial governor for the education of white children, and the remaining 70 percent to the Secretary of War for road construction. Roads were to be built under the direction of a board of road commissioners composed of an engineer officer of the U.S. Army to be appointed by the Secretary of War and two other officers drawn from troops stationed in Alaska. The board was empowered,

upon their own motion or upon petition, to locate, layout, construct, and maintain wagon roads and pack trails from any point on the navigable waters . . . to any town, mining or other industrial camp or settlement, between any such town, camps or settlements . . . , if in their judgement such roads or trails are needed and will be of permanent value for the development of the district.

The board was not to build roads or trails to transitory settlements. Any work worth more than \$5,000 was to be let for bid and awarded to the lowest bidder, but if all bids were deemed too high, the board possessed the power to perform the required work by buying the necessary materials and hiring the required men. The board also was responsible for the maintenance of this transportation network.⁵⁴

The president signed the legislation creating the Board of Road Commissioners for Alaska on January 27, 1905, and in March, upon the wish of President Theodore Roosevelt, the Secretary of War designated Major Wilds Preston Richardson of the 9th Infantry president of the board and filled the remaining two positions with the appointments of Lieutenants George B. Pillsbury and Samuel C. Orchard. Richardson, then

Figure 2. Survey for wagon road from Valdez to Fort Egbert and military trail between Yukon River and Coldfoot.



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44 years of age, was already an old Alaska hand. Born on March 20, 1861 in Hunt County, Texas, he had entered the U.S. Military Academy at West Point in the summer of 1880 and graduated as a second lieutenant of the 8th Infantry on June 15, 1884. He then served in a garrison in California and in frontier duty in Apache County and in western Nebraska. Promoted to first lieutenant on December 16, 1889, he served as an instructor in tactics at his alma mater from 1892 to 1897. He received orders in August 1897 to serve in Alaska where, except for a few brief details elsewhere, he remained for 20 years. Richardson was promoted to captain on April 26, 1898; to major on April 7, 1904; lieutenant colonel in 1908; and colonel in 1914 and left Alaska in 1917 after he became a brigadier general in the National Army. In March 1918 Richardson assumed command of the 78th Infantry Brigade, 39th Division and arrived overseas at Brest on September 3, in time to take part in the closing battles of World War I. Next he commanded the American forces at Murmansk in northern Russia, arriving there early in April 1919. In October he returned to the United States, and with the mustering out of the National Army he was returned to the rank of colonel and retired on October 31, 1920. He died in Washington on May 20, 1929 at 69 years of age.⁵⁵

The War Department directed the new board to meet at Skagway on May 15, 1905. On the way to Skagway from Seattle, Richardson and Pillsbury stopped at Ketchikan and Juneau, where Orchard met the two, and then at Haines. The men made a preliminary inquiry into the road needs of southeastern Alaska. They soon found that citizens in the region were concerned about the expenditure of monies from the Alaska Fund, preferring to have these spent in the region in which they were collected. Richardson pointed out that "on account of the somewhat exceptional status of the courts in Alaska, embracing as it [sic] does, certain extra executive and administrative functions, a sort of sentiment of territorial division has grown up in the minds of many of the people." The board president decided to ignore these divisions and instead try to accomplish what was best for all of Alaska.⁵⁶

During the summer of 1905 board members traveled widely. Richardson went down the Yukon River via the White Pass, visiting Eagle, Circle, and Rampart. He went up the Tanana River to Fairbanks and from there to St. Michael, Nome, the Ophir Creek (Council City) districts, and other

parts of the Seward Peninsula. Orchard inspected the Valdez Trail and determined what improvements were necessary. Pillsbury examined a section of a road from Whitehorse to Yukon Crossing in the Yukon Territory; he then went to Ketchikan and ordered a survey for a road across a short portage of four miles on Prince of Wales Island from the Cholmondely Sound to Hetta Inlet; he also ordered a survey for a road from Haines Mission up the Chilkat and Klehini Rivers toward the international boundary. If that was not enough for one short season, Pillsbury then went to Valdez in September and crossed Big Delta Pass into the interior, the proposed route of the new trail from the coast. From Fairbanks he went downriver to St. Michael and Nome and left Alaska by ocean steamer late in the fall.⁵⁷

Richardson estimated that the new town of Fairbanks had a population of approximately 3,000, with another 5,000 working mines on the creeks in the vicinity. The Fairbanks Chamber of Commerce appealed to Richardson to have a wagon road constructed between the camp and adjacent mines, for with the spring breakup, the two stage lines had been forced to suspend operations because the trails had become nearly impassable.

The town could now only be reached on foot, and it was not uncommon to see miners come in here [Fairbanks] late in the evening, almost exhausted, with their clothing torn and draggled in the mud, after a trip of some thirty miles over a trail from six inches to two feet deep in mud, and from forcing their way through the brush and timber to avoid some of the worst places.⁵⁸

Richardson quickly concluded that Chester W. Purington's 1895 observations on road building in the subarctic had been correct. Purington had remarked that

a serious detriment to the making of a road in Alaska is the thawing of the ground beneath the moss. It has been the universal experience that wherever the moss is cut into, thawing immediately commences, and the trail which was passable becomes a filthy, slimy mass of mud, roots, and broken stone, a difficult route for men on foot, a slow and tiresome road for loaded animals, and an impassable obstacle to any sort of vehicle. In regions further South under temperate conditions, trails frequently are developed into fair wagon roads by much usage. Such development can never take place in any part of the Northwest.

Purington recommended that in sections with poor drainage the moss be left intact, even be added to by material taken from the side ditches,

and the surface then be corduroyed with heavy brush or poles. On top of this a covering of gravel would add insulation.⁵⁹

On Richardson's recommendation, the board then spent a total of \$7,851 in the Fairbanks area, building a six-mile road from Gilmore to Summit, designated as route No. 7, and a trunk road from Summit to the mines on Cleary Creek. The Board of Road Commissioners for Alaska contracted the work since it had no employees of its own.⁶⁰

Major Richardson was particularly concerned with the development of interior and northwest Alaska. This necessitated the speedy development of the Valdez-Fairbanks route, consisting of three separate trails. The first, from Valdez to Copper Center, essentially followed the military trail Abercrombie had built earlier; the second led up the Tanana River from Fairbanks; and the third connected these two from Copper Center to the mouth of the Delta River or to Isabel Pass. Richardson pointed out that the new route would speed mail delivery and thus save time and money. The board president reported that some work had already been accomplished on trails 4, 5, and 6, consisting primarily of repairs and improvements, such as replacing approximately 3,032 feet of worn-out corduroy with stone ballast and building numerous small bridges over dangerous crossings. He proposed that the dangerous Tanana River be crossed just above the mouth of the Delta ferry.

Richardson arrived in the Nome district on August 22 to survey conditions and assess needs. He described existing forms of transportation, which consisted of a few narrow-gauge railroads--the Wild Goose route, or the Nome Arctic Railway, which crossed Anvil Creek and extended about 16 miles across to the valley of the upper Nome River; the Solomon River Railroad from the mouth of the Solomon up to the mouth of the East Fork, approximately 14 miles; and the Council City and Ophir Creek Railroad, running from Council to claim No. 15 Ophir, approximately eight miles. There were a few stagecoaches and numerous gasoline boats and "horse boats," five-ton scows pulled by horses along the banks of the creeks where safe footing could be found or in the stream when it was not too deep. When all else failed, men poled the scows upriver. Residents of Nome petitioned the board to survey and construct a road leading directly into the heart of the peninsula, a distance of about 175 miles. Although too expensive to construct all at once, Richardson

believed that short sections should be built where most needed as funds permitted.⁶²

Richardson proposed to the War Department the construction of about 300 miles of roads and approximately 1,200 miles of trails, all urgently needed to further economic development. He estimated that it would cost about \$2,500 to \$3,000 per mile of road and approximately \$250 per mile of trail. The Alaska Fund was totally inadequate to meet these needs, and Richardson suggested that Congress appropriate \$1 million outright. "Such an expenditure at this time," he argued, "would be of immense benefit to the country in the way of increased production and the opening up of new fields." With such an appropriation, the board could purchase its own animals, tools, and equipment and organize its work on the most economical basis. He explained that the board had overexpended its \$28,000 budget by \$1,786.61, made necessary by building a permanent organization.⁶³ The major was an ambitious and capable man. In order to gain success and prestige in his profession as a military engineer on the frontier, he needed to build his own organization and substantially increase the size of the budget. This, he probably reasoned, would give him the flexibility to build a transportation system in the North which, in turn, would enhance his career.

The board could look back on a productive first year. It had directed various reconnaissances and surveys, undertaken some repairs and improvements, and built short stretches of road from Haines up the Chilkat River to the Indian villages of the Chilkat Valley and similar projects in the Fairbanks and Nome districts. The three men agreed that the monies accruing to the Alaska Fund and available for road construction were wholly inadequate to meet even the most immediate and pressing transportation needs of the territory. Furthermore, the monies from this fund varied and were received at irregular intervals, making it almost impossible to plan ahead and commit funds for long-range projects. The members of the board were united in their opinion that the law which had created the Board of Road Commissioners for Alaska needed to be amended. In November 1905 the army called Major Richardson to Washington to give a personal report and spell out needed changes. In early 1906 Congress amended the legislation, as requested. As approved, it regularized the collection of license monies and raised the cost of roadwork

which could be performed by government forces from \$5,000 to \$20,000.⁶⁴ Congress also made a direct appropriation of \$150,000 to be expended at the direction of the board.

To carry out the necessary work over such a vast territory, properly supervise it, and protect expenditures, the board gave much thought to the organization of the office and to the transfer of funds and methods of payment. It divided Alaska into districts, with suboffices and with a civil engineer as superintendent in charge of each district. These superintendents were to act as disbursing agents for the board. After the board had laid out the work, the engineer officer became responsible for seeing it carried out. For that reason he was in charge of the organization of all working parties and for their immediate direction in the field, as far as possible and consistent with the responsibilities of the other board members. The disbursing officer, for similar reasons, had great freedom in supervising all office details relating in any way to his responsibility of accounting for funds, property, and records.⁶⁵

In order to pay for labor and supplies at distant points, the board made agreements with local banks to cash checks drawn by the various superintendents. The board had suitable checkbooks printed and distributed. The superintendents were to keep receipts and make a careful accounting. Since there were no banks in some areas where work was performed, it soon became necessary to extend this system to some kind of arrangement with commercial or trading companies. This was done by entering into a written agreement with such companies to furnish supplies and pay the laborers. Eventually, the board established a system of payment on the overdraft principle. It reimbursed the bank or commercial company each month (or more often if desired) for amounts paid out, paying a negotiated rate of exchange varying from one-fourth to one-half of one percent.

With the framework in place, the board accepted a 1906 budget of \$230,500, an increase of eight times over the previous year. Of the total, \$80,500 accrued from the Alaska Fund. In addition, Congress also appropriated an extra \$35,000 for a reconnaissance and preliminary survey for a mail and pack trail from the navigable waters of the Tanana River near Fairbanks to the vicinity of Council City on the Seward Peninsula, a distance of approximately 600 miles. The board hired civil engineer J. I. McPherson, who selected a feasible route.⁶⁶

The Board of Road Commissioners for Alaska was not idle during the winter of 1905-06. It shipped rations, forage for the animals, and tools from Valdez and Fairbanks and distributed them in caches along the trail and also constructed a bridge across the Tazlina River; made a reconnaissance of a part of the route from Fairbanks to Rampart; and flagged 247 miles of exposed trails on the Seward Peninsula. The board used two assistants and a seven-dog team for flagging--red flags placed at 50 to 150 feet apart (depending on the terrain) to make winter travel less hazardous by keeping travelers from getting lost.⁶⁷ Another 40 miles of road had been improved, 285 miles of new trail had been cut, and another 200 miles already in use had been upgraded. Additionally, it had located and surveyed another thousand miles of roads and trails.⁶⁸

The board accepted \$7,366.50 which the citizens of Nome had collected to enable the construction of a road from town to the so-called second beach line, about three miles back from the coastline. That, together with what the board was able to spend, resulted in the construction "of a veritable boulevard, 22 feet between ditches, over which thousands of tons have been transported" where formerly only the lightest wheeled traffic was possible.⁶⁹

Specifically, that season the board accomplished the following location surveys:

<u>Place</u>	<u>District</u>	<u>Distance</u>
Gulkana to Donleys	Valdez	121 miles
Fairbanks to Donleys	Fairbanks	127 miles
Delta to Banner	Fairbanks	13 miles
Donleys to Banner	Fairbanks	51 miles
Fortymile to Eagle	Fairbanks	57 miles
Rampart to Glenn	Fairbanks	30 miles
Hope to Sunrise	S.W. Alaska	39 miles
Preliminary survey	Fairbanks	18 miles
Tolovana-Glenn	?	?
Sundry surveys	Seward Peninsula	<u>19 miles</u>
		475 miles

It constructed and marked the following mileages:

Wagon roads	46.5 miles
Roads maintained and improved	40.0 miles
Sled trails - full width for double sleds	181.0 miles
Trails - cleared half width	81.0 miles
Winter trails flagged	247.0 miles
Bridge over the Tazlina River	
Maintenance of the Bonanza Ferry ⁷⁰	

Early in the construction season the board decided to purchase its own horses rather than to pay the high price of hire. Team rentals at Nome, Fairbanks, and Rampart cost between \$15.00 and \$18.00 per day. At that price, the board reasoned, it monthly paid what it would cost to buy a team outright. And if funds permitted in 1907, it intended to purchase its own animals for all projects.⁷¹

In 1906 the board and the Signal Corps initiated a close working relationship. Wherever practical, the latter changed the route of the telegraph lines to follow the location of permanent trails. This, of course, was to facilitate maintenance. For example, it changed the course of the line to follow the cut-off section from Gulkana to the mouth of the Delta and modified the line between Fairbanks and Rampart and from Kaltag to Unalakleet.⁷²

By the end of 1906 the board had given form and structure to its organization. Within a couple of years of its establishment, it had become an important federal agency. Major Richardson, as president of the board, had gained considerable influence in Alaska. For the agency he directed had begun to provide Northerners with the basic framework of a transportation system, and he also controlled a sizable payroll.

Numerous economic benefits quickly resulted from the work of the board. For example, in the Fairbanks district it had built a 4.07-mile-long road, costing \$2,439 per mile, connecting Summit to Cleary. Some 5,000 tons of freight moved over this segment at a reduction of \$10.00 per ton, saving the Cleary miners \$50,000. A parallel road from Summit to the mines of Fairbanks Creek, 9.22 miles in length and costing \$1,300 per mile, had resulted in a reduction of freight rates by \$20 per ton. The Fairbanks Creek miners had saved an estimated \$40,000 on the transportation of their supplies.⁷³

Improvements in the overland mail trail had resulted in speedier deliveries. In 1906 the first winter mail arrived in Nome on December 5, taking only 49 days from Seattle. The previous year it had not arrived until December 29, and the year before that not until December 31. This represented a time saving greatly appreciated by the citizens of Nome and the Seward Peninsula. Ed. S. Orr and Company operated a stage line between Valdez and Fairbanks, a distance of 376 miles. The company held the contract for carrying the winter mail between the two cities.

Between November and April, mail and passenger stages left Valdez and Fairbanks weekly. The company set a record for the 1906-07 winter season of six days, 10 hours, and 10 minutes. It usually took nine days to reach Fairbanks and eight going back to Valdez. There were 39 stations along the route, and it took 180 horses, run in relays, to keep the stages moving. Each station was equipped with stables and feed for the stock.⁷⁴

Back in Washington, Richardson's lobbying efforts with Congress paid off handsomely for the 1907 fiscal year when it allotted \$250,000 for his Alaskan projects. Together with \$90,000 from the Alaska Fund, the board disposed of a record budget of \$340,000.⁷⁵

Unfortunately, requests for road and trail construction from all sections of Alaska poured into board headquarters "so far in excess of the abilities of the Board to meet, with the funds available or likely to become available in the near future," that board members thought it wise to issue a circular explaining to Alaskans their policies and limitations. In its circular, the board drew a distinction between monies accruing from the Alaska Fund and special congressional appropriations for the "construction and maintenance of military and post roads, bridges, and trails." The board had decided to use monies from the former source mainly for local improvements and from the latter for "the location and construction of main trunk lines of communication through the territory, and especially the through mail route from Valdez to the Seward Peninsula." The board welcomed petitions for projects but requested that each be accompanied by the best information available, such as character of the route desired, tonnage to be transported, number of people to be benefited, the probable permanence of the community, and the approximate cost of the desired undertaking. But the board also reminded its constituents of Alaska's vast size and that it would take years before all regions requiring aid could even be examined. Actual construction work had to wait for these preliminary reconnaissances. Finally, the board encouraged monetary contributions from communities in order to stretch funds.⁷⁶

In his report to the Secretary of War, board president Richardson differentiated between three different types of construction used. Wagon roads had to accommodate year-round traffic of considerable tonnage.

Therefore, they had to be located with suitable grades and be crowned, ditched, and drained and corduroyed or planked where necessary. Winter sled roads had to meet the requirements of winter travel only; therefore, no crowning, ditching, or draining was necessary nor was there a requirement for extensive corduroying. They did have to be wide enough through timbered areas and sidehill cutting to permit the passage of double teams, however. In addition, winter sled roads had to have the proper grade for fairly heavy loads, and most of the tree stumps and surface inequalities had to be removed to provide a fairly even surface. Some stretches of winter sled roads had been so well built, in fact, that they even permitted light-wheeled traffic in summer. Lastly, the dog team and pack trail construction was the least expensive to build. It differed from that of the winter sled road in that it was narrower and had steeper grades and more surface unevenness. By 1907 the Alaska Road Commission had completed about 166 miles of wagon road; 384 miles of winter sled road; 242 miles of dog team and pack trail; 382 miles of flagged winter trail and built three river bridges and installed three ferries. The following table shows, in detail, the wide regional distribution of work accomplished as of 1907.

DISTRIBUTION OF WORK AND MILEAGE COMPLETED DURING SEASON

Wagon Roads

No.	Name	Construct- ed and im- proved to Nov. 1, 1906	Construct- ed Nov. 1 1906 to Oct. 1, 1907	Total con- structed and im- proved	Length previously construct- ed im- proved year
		Miles	Miles	Miles	Miles
1	Portage road.....	2.00	1.96	3.96	0.31
3	Haines-Pleasant Camp.....	3.04	9.00	12.04	-----
4	Valdez-Copper Center.....	-----	.71	.71	-----
7	Gilmore-Summit.....	6.00	-----	6.00	-----
7a	Summit-Cleary.....	4.73	a1.33	a6.06	-----
7c	Summit-Fairbanks.....	9.22	a1.33	a10.55	-----
7b	Fox-Dome.....	6.88	a1.00	a7.88	-----
7d	Ridge-Vault.....	-----	a1.50	a1.50	-----
7e	Siding-Esther.....	-----	a6.00	a6.00	-----
9	Rampart-Big Minook.....	4.25	2.00	6.25	1.00
11	Eagle-O'Brien.....	-----	8.75	8.75	-----
15	Circle-Birch.....	-----	9.50	9.50	-----
8	East Fork-Council.....	31.00	-----	31.00	-----
10	Nome-Fort Davis.....	2.10	-----	2.10	-----
13	Nome-Dexter.....	7.00	3.00	19.00	-----
31	Anvil-Glacier.....	-----	.80	.80	-----
33	Penny River.....	-----	.80	.80	-----
32	Cripple River.....	-----	.80	.80	-----
27	Deering-Ininachuck.....	-----	.75	.75	-----
26	Candle Creek.....	-----	2.00	2.00	-----
12	Mile 35, Sunrise-Hope.....	-----	37.00	37.00	-----
12a	Bear Creek.....	-----	1.50	1.50	-----
	Total.....	76.22	89.73	165.95	1.31

a Estimated: reports not yet received.

b Does not include 65 miles sled road from Washburn to Doneleys, replaced by new Delta Cut-off.

Distribution of Work and Mileage Completed During Season (continued)

Sled Roads

No.	Name	Construct- ed and im- proved to Nov. 1, 1906	Construct- ed Nov. 1 1906 to Oct. 1, 1907	Total con- structed and im- proved	Length previously construct- ed im- proved year
4a	Valdez-Copper Center.....	24.75	-----	24.75	5.75
	Marshall Pass.....	.75	-----	.75	-----
6	Copper Center Delta.....	6.00	43.00	43.00	7.25
6a	Delta River.....	25.00	.50	25.00	-----
5b	Delta Cut-off.....	-----	52.00	52.00	-----
5	Fairbanks-Washburn.....	62.00	-----	62.00	62.00
5a	Washburn-Tenderfoot.....	4.00	15.00	19.00	4.00
16	Cleary-Birch Creek.....	-----	b34.00	b34.00	-----
17	Fairbanks-Hot Springs.....	-----	b48.00	b48.00	-----
18	Hot Springs-Fort Gibbon...	-----	34.00	34.00	-----
11	Eagle-O'Brien.....	-----	7.25	7.25	-----
22	Eagle-Seventymile.....	-----	15.00	15.00	-----
34	Canyon Creek-Walkers Fork.	-----	2.50	2.50	-----
11a	Jack Wade-Steel Creek.....	9.90	-----	9.90	-----
	Total.....	132.40	251.25	383.65	79.00

Trails

4	Valdez-Copper Center.....	2.00	-----	2.00	-----
6	Copper Center-Delta.....	74.00	-----	74.00	6.00
(5)	Washburn to McCarty.....	30.00	-----	30.00	-----
16	Cleary-Birch Creek.....	-----	a30.00	a30.00	-----
19	Cut-offs on Yukon.....	-----	36.50	36.50	-----
35	Nome-Unalaklik.....	-----	52.00	52.00	-----
	Unalaklik-Kaltag.....	17.00	-----	17.00	-----
	Total.....	123.00	118.50	241.50	6.00

a Estimated: reports not yet received.

b Does not include 65 miles sled road from Washburn to Doneleys, replaced by new Delta Cut-off.

The board had to cope with wide variations in construction costs in various regions of Alaska. During the 1907 season, for example, the cost of labor had ranged from \$2.50 to \$5 per day. Board was provided, and subsistence costs ranged from slightly more than \$0.50 per day in southeastern Alaska to \$3 per day in the interior. The higher expenses reflect the inadequate transportation system: southeastern Alaska, for example, could rely on competitive and cheap ocean freight rates. Similarly, wages differed significantly, again reflecting the cost of living in the differing regions. Superintendents, locating engineers, foreman, and assistant foremen received anywhere from \$150 per month to \$10 or more per day. The cost of hiring work animals also varied greatly, ranging from \$10 per day for a four-horse team including feed to \$13 per day for a single horse and no feed. Not surprisingly under these circumstances and with the added diversity in climatic, timber, and soil conditions, mileage costs of construction ranged from a low of \$100 to a high of several thousands of dollars per mile. And although considerable economy had been achieved with the purchase of four road machines, each drawn by a team of from six to eight horses and used in ditching and sidehill grading, it still cost an average of approximately \$2,200 for each mile of wagon road built. Winter sled roads cost \$250 and pack trails \$100 per mile.⁷⁸

Richardson continued to lobby successfully for special congressional appropriations. For the fiscal years 1908 through 1911, Congress provided \$244,857.18 (1908), \$236,674.97 (1909), \$237,498.50 (1910), and \$100,000 (1911). Together with monies from the Alaska Fund, this gave the board budgets for those years as follows:

<u>1908</u>	<u>1909</u>	<u>1910</u>	<u>1911</u>
\$365,629.90	\$383,646.89	\$340,396.79	\$266,777.95 ⁷⁹

In 1911 the board reported that a total of 759 miles of wagon roads, 507 miles of winter sled roads, and 576 miles of pack trails had been built. Additionally, every year the board had staked several hundred miles of winter trails over treeless and exposed sections of the territory for the guidance and safety of travelers during storms. It also had continued its program of constructing bridges and installing ferries. The board once again called attention to its wagon roads and explained that this designation had been applied in a restricted sense

in Alaska, and they certainly did not meet the standards of those found in the contiguous United States. Alaska's wagon roads, the board explained, were designed to be good country roads capable of accommodating year-round traffic of considerable tonnage. They had been located with appropriate grades, been crowned, ditched, and drained, and corduroyed or planked where necessary. Wherever soil quality permitted, ordinary graded earth roads were built. In areas with poor soil conditions where an ordinary earth road would not support the traffic, the board had put down a light corduroy of small spruce trees covered with several inches of earth. In fact, most of the wagon road mileage constructed consisted merely of earth roads and therefore rutted badly during prolonged periods or rain. While the board had worked in most sections of the territory, it had constructed the best system of local roads in the Fairbanks and Nome mining districts. This had been accomplished, in part, because of the substantial financial assistance local residents had rendered.

In 1904 Congress had passed legislation that required all able-bodied Alaska males between the ages of 18 and 50 who resided outside incorporated towns to work two days each year on the public roads or, failing to do so, furnish a substitute or pay \$8. Gradually, the court commissioners had made the law effective, and by 1911 it had yielded the equivalent of approximately \$100,000 in labor and money payments. In fact, roads were in such good shape in the Fairbanks mining district in the summer months that automobiles carried both passengers and freight between the town and the creeks.⁸⁰

By 1910 census records showed that Alaska's interior, principally Fairbanks and the Tanana Valley, had a total population of 13,064, topped only by a population of 15,216 in southeastern Alaska. The board members agreed that it was of the utmost importance to connect this thriving mining district with the coast at Valdez. Construction of the Valdez-Fairbanks wagon road would continue on a priority basis. Already, more than half the total wagon road mileage in the territory had been constructed along this route. A branch had been added by building some 90 miles inland at Willow Creek and from there to Chitina on the Copper River and Northwestern Railroad, which connected with Cordova. In short, the board could point to substantial accomplishments in 1911. Its system of wagon roads, winter sled roads, and pack trails had reduced

the expense of moving freight, made possible speedy and regular mail service to interior and northwestern Alaska, and increased the safety of travel in general.⁸¹

It was not surprising that Richardson was called upon by members of the executive and legislative branches of the federal establishment for advice on matters affecting the North. At the end of the construction season, each year the War Department recalled him to Washington, where he served in various capacities between November and April. In the course of his work Richardson came into contact with many influential lawmakers and bureaucrats, and over the years he had developed friends in high offices.

Richardson had known James Wickersham for a considerable period of time, first as a federal judge and then as Alaska's newly elected delegate to Congress. Wickersham took his seat in the House of Representatives in March of 1909. While running for the office, he had promised territorial voters that he would get through Congress a bill allowing them to elect their own legislature and also granting them a greater degree of home rule. As promised, the new delegate submitted his measure on June 7, 1909. It was referred to the House Committee on Territories, of which he was a member, for hearings and consideration. Unfortunately for Alaskan hopes, however, the new president, who had served as governor general at Manila in the Philippine Islands, favored the creation of a similar appointive commission to rule Alaska. Ex-Governor Wilford Hoggatt and Governor Walter E. Clark as well as Major Richardson supported the president's plan, as did numerous federal bureaucrats and lobbyists for corporate interests with financial investments in the territory.⁸² If successful, Taft's scheme would have placed Alaska under the control of the Bureau of Insular Affairs in the War Department.

Wickersham violently opposed the president's plan and quickly attacked those who supported it. He was particularly annoyed with Richardson because he thought that the major had played a major part in drafting the offending legislation. It was not long before the two men had become implacable enemies. In early 1910, for example, the delegate complained to the Secretary of War that contrary to presidential orders issued the previous year directing territorial officers to spend their time at their duty stations rather than in the nation's capital, Richardson

had "arrogated to himself the duty of controlling general legislation for Alaska in a way which I decidedly resent." Richardson backed the creation of an Alaska Railway Commission which, Wickersham charged, would give away valuable coal lands to the Alaska Syndicate, a combination of J. P. Morgan and Guggenheim fortunes. In Alaska, the principal mining venture of this organization consisted of the Kennecott-Bonanza copper mine. In order to tap this deposit it had begun construction of the Copper River and Northwestern Railroad. It controlled steamship transportation and a major part of the salmon canning industry. Most importantly, the delegate had early clashed with the Alaska Syndicate and subsequently run on an antisyndicate platform in his first campaign. ⁸³

Then there was the major's support of the Beveridge bill, which provided for the appointment of a legislative council of nine members with broad powers of legislation. There would be an attorney general, a commissioner of the interior, a commissioner of education and health, and a commissioner of mines, who together with the governor and four other persons appointed by the president, made up the legislative council. Beveridge had introduced his bill on January 18, but Wickersham had not learned of it until the next day. He immediately requested a hearing before the Senate Committee on Territories. In his testimony the delegate argued vehemently against the measure, and he and Richardson exchanged sharp words. After leaving the committee room on January 20, Wickersham related that Richardson met him in the corridor and in "an angry tone he threatened me for what I had said before the Committee of the Senate about his connection with these bills and said that only his position as a Major in the Army, and my position as a Delegate in Congress protected me."

Wickersham rejected the whole scheme but was particularly offended by one provision of the measure which allowed that one or more of the commissioner positions could be filled by army officers. If an officer should be appointed commissioner of the interior, he would simultaneously also be the chairman of the Board of Road Commissioners for Alaska. The delegate feared that Richardson had included this section so as to become the commissioner of the interior, a member of the legislative council, and the Alaska Railway Commission and thereby make himself a very powerful individual indeed, becoming "the dispenser of franchises,

privileges, and concessions of the public resources of Alaska." Wickersham accused Richardson of favoring the Alaska Syndicate, thereby betraying the trust of the miners, businessmen, newspapers, and most Alaska residents opposed to placing control of the territory's resources "into the hands of an appointive Military Commission" or the Alaska Syndicate. Wickersham claimed to represent all the people of Alaska, "excepting only one or two big interests which hope thus to control the great undeveloped resources of the Territory, as well as its government, through the channel."⁸⁴

Wickersham not only protested the major's conduct to his superiors, he also asked that the officer be sent back to Alaska to perform the duties of his job instead of lobbying in favor of legislation which the delegate opposed as being "inimical to the interests of the people of that Territory."⁸⁵ In fact, it seemed as if Wickersham's animosity toward Richardson had gotten the better of him and clouded his judgment. The major, as alleged, was not an Alaska territorial officer subject to the supervision of the Secretary of the Interior, but rather served under the direction of the Secretary of War, who had ordered him to Washington. Richardson denied any lobbying for the Alaska Railway Commission. He stated that he had merely been asked to supply some ideas involving coal lands, which he had done. In fact, the so-called bill was merely a rough draft. Richardson stated that he "would not have done even that much had I not been authorized by the President, when Secretary of War, to follow up the railroad developments in the Territory, and keep him advised as to the feasibility and necessity of aid by the Government in such construction." The allegation that Richardson was in large part responsible for the Beveridge bill was pure nonsense. The major stated, however, that "my connection with such a proposed government would not do any more injury to Alaska than Mr. Wickersham's presence here as a Delegate; nor do I think I would have a smaller percentage of the whole peoples' support." Richardson told his military superiors that the delegate had received a mere 3,802 votes out of a total of 9,625 cast in the last election, divided between five candidates. The major disclaimed any connections with the Alaska Syndicate and in turn accused the delegate of making statements "wholly false as to fact, malignant in motive, and unwarranted from what he

knows of my work in the Territory and from my past relations with himself." After considering all the facts, the Secretary of War rejected the delegate's complaints and held that since Wickersham had made the remarks to which Richardson had objected before a Senate committee rather than on the floor of the House under his privilege as a member of that body, the major had acted properly under his rights and privileges as a citizen.⁸⁶

Wickersham, however, was a contentious and scrappy individual and not to be deterred in his quest of substantially reducing Richardson's influence with the executive branch and Congress. He drew up a long list of allegations and complaints designed to demonstrate Richardson's long history of lobbying before Congress. The delegate used selective passages from various hearings to implicate and discredit Richardson. As early as 1904, for example, even before taking up his roadwork, the officer had offered to come to Washington "to lay the facts before the Secretary of War and before the proper committees of Congress." As a result of this offer, Richardson had "been ordered by the Secretary to report to Washington in order to go before the committees and represent the needs of Alaska." Senator Knute Nelson, one of the members of the Senate subcommittee which had visited Alaska in 1903 where he had become acquainted with Richardson, praised the latter for his great assistance in getting special appropriations from the Military Committees for the Alaska road work. In fact, Nelson had stated, "He and I have frequently conferred about Alaskan matters. . . and I have found him very helpful. He has given me lots of valuable information about Alaska; and I think he has been very helpful in securing not only appropriations but other legislation." In his very lengthy indictment of Richardson, the delegate cited innumerable alleged wrongdoings and finally reiterated his demand that the Secretary of War remove the major from Washington.⁸⁷

Wickersham was unfair in his continuing attacks on Richardson, but they did serve to gain the attention of Alaskan newspapers and citizens and focus them on the inadequacies of the Beveridge bill. And although Richardson had, in fact, made several recommendations which had been incorporated in the draft legislation, it had been President Taft who had proposed the peculiar provisions of the Beveridge bill. On December 11, 1909 the president had stated that

Senator Beveridge is willing to father such a bill, and I am anxious to have it embody the features that I suggested. The truth is that what you might do is to take the Philippine act of 1902 and go through it and strike out the things that are peculiarly applicable to the Philippines and insert those things that you may know from Richardson or otherwise in reference to Alaska. When you have it, send it over to me and I will send it to Senator Beveridge and he will shape it with his knowledge of existing conditions in Alaska and introduce it, and I will see what I can do to help it through.

In the meantime, Wickersham's dislike of Richardson increased, and he became almost paranoid about the latter's intentions. To a constituent he suggested that the major assisted

his friends the Guggenheims to defeat me for reelection. I shall expect you to offset the Major's influence . . . and assist me to be reelected for the purpose of defeating his appointive military legislative bill with the Major at the head of it to control Alaska in the interests of the big corporations.

The delegate concluded that "we have got to fight to protect the Territory from this band of grafters. . . ."

What Wickersham clearly hoped was that his continued barrages against Richardson, tainting him with allegations of ties to the Alaska Syndicate, would eventually ruin his military career by making him so controversial that the army would decide to replace him. In a public speech in Fairbanks, Wickersham continued his harangue against the chairman of the Board of Road Commissioners for Alaska. He asserted that the major had "assisted in drafting the Beveridge bill, so that he might be appointed in charge of the railroad board. . ." and that "the bill was plainly intended for the benefit of Major Richardson, and the fattest job was for the major." Not only was Richardson self-serving, Wickersham charged, but a coward as well because, although there had been two foreign wars since he had been in Alaska, he had served in neither. What Wickersham did not know was that Richardson had applied for duty in the Philippine Islands in 1899 while stationed at Fort Egbert, Alaska but had been refused because the army needed him in the North. It was perhaps an editorial in the Fairbanks Daily Times which accurately summarized Wickersham's vendetta: "And now comes a politician, who, having been elected to attend to the representation of Alaska in Congress, abuses his position to vent a petty spite upon Major Richardson."⁸⁹

Richardson learned of the delegate's unremitting attacks against him while working at Kaltag on the Yukon River. He was desperate and helpless because he did not command the attention of the newspapers like the delegate did. He reiterated that he had merely followed orders when providing background information for the Beveridge bill. "His outrageous assault upon me," the major stated, "was unjustified by any single act of mine, official or personal, toward himself or the people of Alaska. It was as unexpected as it was vindictive and malevolent and it is now continued. . . with no restraint of moral responsibility, respect for the truth, or sentiment of common decency."⁹⁰

Wickersham gained reelection in 1910 after having waged a campaign in which he criticized the absentee-owned fisheries for not paying their share of taxes to the territory, assailing the Alaska Syndicate, and attacking President Taft's scheme for governing Alaska and advocating his version of home rule for the North.

The delegate had not forgotten Richardson and the Board of Road Commissioners for Alaska. In the summer of 1911 he received information from constituents which informed him of the local rumor that Lieutenant Sam C. Orchard, the disbursing officer of the board, was short in his account. In fact, one of Wickersham's informants labeled Orchard an "embezzler to the extent of a \$17,000 Road Commission Fund." Another told about the lieutenant's "heavy drinking for the last three years and his spending large sums of money in politics attempting to defeat my [Wickersham's] election last August." And although his informants had no factual information which might throw light on the situation, Wickersham asserted that as a public official it was his responsibility to bring this information to the attention of the War Department so that an investigation might be undertaken. The delegate was happy when he learned that such a probe already was under way because the department had received similar information earlier. By October 1911, a court martial had been convened, and Orchard was ordered under guard to Fort Lawton, Washington to await the actions of the higher authorities.⁹¹

Who was this 1st Lieutenant Samuel Chandler Orchard? He was born on August 31, 1868 in Fayette County, Texas and received a commission as a 1st Lieutenant in the 1st Texas Volunteer Infantry on May 14, 1898. He served as inspector of a rifle range and as a quartermaster but did

not participate in any of the battles during the Spanish-American War. On April 18, 1899, Orchard was honorably mustered out but was reluctant to return to a wholesale grain and hay business. He had taken a liking to the military life and applied for an appointment in the regular army but failed his examination on August 17, 1901 in San Antonio, Texas. Despite this, the review board recommended that he be considered eligible for appointment. The army commissioned him a second lieutenant on November 7, 1901, retroactive to February 2, 1901. Orchard served at Fort Sam Houston, Texas, at the Presidio in San Francisco, California, and at Fort Thomas, Kentucky, where he performed the duties of battalion quartermaster, in charge of the commissary, and was in charge of the prisoners. In May 1904 the army ordered him to Fort Liscum at Valdez, Alaska. From July 1, 1904 to March 1, 1905 Orchard supervised the construction of public buildings at the fort and then was appointed disbursing officer for the newly created Board of Road Commissioners for Alaska.

Efficiency reports in subsequent years by his superior, Major Richardson, rated Orchard highly. In 1906, for example, he stated that Orchard's attention to duty and his professional zeal were excellent and that he seemed to have a good business ability. In 1908 he again remarked that Orchard had shown peculiar fitness for detail in the pay department as disbursing officer for the Board of Road Commissioners for Alaska. In 1910 Richardson again gave his subordinate high marks, noting that he was qualified for his position and should be entrusted with important duties and that he had performed his responsibilities as disbursing officer well.

In 1911 Sam Orchard's world suddenly collapsed around him when the army convened a general court-martial for his trial on charges of embezzlement at Fort Wm. H. Seward. At his request, it adjourned for 10 days to enable him to prepare his defense. Richardson was acutely embarrassed about the scandal, coming as it did on top of Wickersham's relentless criticism of his organization and of himself. This case, he reasoned, would only furnish the delegate with further ammunition against the Board of Road Commissioners for Alaska. To make matters worse, Orchard told friends that all of his troubles had arisen because Richardson had "turned against him and that it was due to politics." Then, instead

of preparing his defense, the accused and his civilian attorney proceeded to try their case in advance on the streets of Haines, Skagway, Juneau, Cordova, and Valdez, contending that an innocent man was being persecuted and that they possessed the evidence to show it. Additionally, the two made threats and insinuations against the president of the board of employees who were compelled in the performance of their duty and under oath before the court to give testimony in the case.⁹²

Wickersham, of course, was at the discomfiture of Richardson, and in his Alaska Day speech in Fairbanks on October 18 he reminded his listeners that nearly two million dollars had "been spent on public roads in the territory of Alaska; and yet they say you can't get over to Valdez in an automobile." Even worse, the delegate continued, "your newspapers don't tell you that they have prosecuted Sam Orchard. . . down at Valdez and Haines for the embezzlement of \$17,000 that you paid into the Alaska Road Fund. They don't tell you how that money has been wasted, embezzled, and thrown away." In comparison, the Canadian government had expended \$140,000 to build a perfectly good road, some 340 miles in length, between Whitehorse and Dawson. It only cost \$10,000 annually to maintain, and the Canadians ran automobiles over it. In contrast with the Board of Road Commissioners for Alaska, the Canadians had not wasted their funds. "They didn't build three and four parallel roads. The road business up there wasn't ruled by incompetency as it is here." The board should not receive another dollar, Wickersham declared, and instead the funds should be entrusted to men "who will go out there and build roads and who will not draw blue prints and maps."⁹³

In the meantime, the court-martial found Orchard guilty of having embezzled \$16,731.28 and sentenced him to be dismissed from the army, imposed a fine in the amount of the embezzled funds, and directed that he be imprisoned for five years at hard labor.⁹⁴ President Taft reviewed Orchard's sentence and reduced it to two years imprisonment at hard labor because of the time Orchard already had spent in solitary confinement at Fort Lawton, Washington. Protesting his innocence, he commended his prison term at the federal penitentiary at Leavenworth, Kansas.

Before the court-martial had reached its verdict in February 1912, the beleaguered Richardson received notification from the Secretary of War that he would be relieved of his duties not later than November 1 of

that year. Secretary of War Henry L. Stimson informed Richardson that the department had adopted a new policy designed to return to duty army officers who had been on special assignments for four or more years and that the reassignment was not connected to his troubles in Alaska.

Richardson was mortified by this latest turn of events because it would appear to vindicate his detractors. He hastily explained to his superiors that his relief "would naturally give rise to conclusions in certain quarters as to the integrity of my work in Alaska, where I have spent the best years of my life, unjustified by the facts, and which constitute a grave reflection upon me professionally." He reminded his superiors that the president himself had initially directed his appointment as presiding officer of the board, presumably because of his previous experience in Alaska. "The duty came to me unsought," he asserted, "and, as I foresaw, fraught with many difficulties of climatic and local conditions entirely out of the ordinary. . . ." Because of insufficient funds, the board had been unable to fully respond to the transportation needs of "a restless and impatient population" and had been subjected to some harsh criticism. Delegate Wickersham had seized upon this criticism "to bolster up in part an unwarranted and malevolent attack, for political purposes, . . . aimed directly at myself, but indirectly and persistent since, in the effort to discredit the War Department and Administration generally in the Territory." There also was the fact that two of the three officers on the board had changed within the last year, and Richardson therefore provided the much needed continuity to implement the construction plans of the War Department in Alaska. Lastly, service in the North had "never been in any respect a 'fancy duty.'" With few exceptions it had been as severe as could be imposed in the field or in campaigns outside of actual war. "If not always health-destroying, it has often been heartbreaking and has called for the full resourcefulness and the best spirit and courage, moral as well as physical, of which the officer or soldier is capable."⁹⁵

Richardson's eloquent appeal was successful, for President Taft intervened and directed his Secretary of War to exclude Richardson from the newly adopted policy of rotation. The president stated that he was sufficiently familiar with the lieutenant colonel's services in the North "to realize that it is to the advantage of the country, especially

of Alaska, that outweighs any advantage to the army in sending him back to his command, to have him on duty in that new territory with which he is familiar from one end to the other. . . ."96

While Richardson successfully battled to retain his duty assignment, more than 400 supporters of Orchard signed a pardon petition in Valdez, and his father and wife appealed to the Secretary of War for clemency--all to no avail. In July, Orchard appealed to his father to use every political means available to gain a commutation of his sentence from the president. Orchard was bitter, claiming that if "I can get to my papers for sixty days am sure can show the proper parties up in such light that the president will be forced to act" on the commutation appeal. He was convinced that "Richardson has brought all the influence possible to bear to keep me here until he leaves Alaska. . . ." And although Orchard became eligible for parole in October 1912, Secretary Stimson refused to sign the necessary papers, and Orchard presumably served out his two-year term at Leavenworth.⁹⁷

The years 1911 and 1912 had been difficult ones for Richardson. His 1912 annual report was brief. He explained that the Board of Road Commissioners for Alaska had expanded its work continuously and had included new projects each year, some in remote sections of Alaska and not on established mail routes. And although Congress had appropriated \$125,000 for the work, the money did not become available until late August of that year. Fortunately for the continuation of the board's work, the governor of Alaska had transferred \$80,000 for road work, which had accumulated in the reserve of the school portion of the Alaska Fund. This, together with the usual receipts from the Alaska Fund, allowed construction to go forward.⁹⁸

Unfortunately, however, 1912 had experienced a poor construction season because excessive rains had caused considerable damage to the Fairbanks-Valdez wagon road, especially the stretch along the Tanana and Delta Rivers. Richardson stated that "the resources of the board have been taxed to keep the road to the interior open and passable, and at times it has seemed in danger of utter destruction." The Copper River and Northwestern Railroad, the only other outlet to the ocean, had been damaged severely and had been forced to suspend traffic for several weeks. Richardson reiterated that the board had petitions for road

construction in its files which, conservatively estimated, would require expenditures of approximately \$1,600,000. The board was not allowed, however, to submit an estimate for funds to meet such demands unless allowed by law to do so. In past years the appropriations, which had supplemented the Alaska Fund and had been carried as a charge against the support of the army, now became limited to only such sums as absolutely necessary to maintain and repair the existing military and post roads.⁹⁹

By June 30 the board had spent \$317,303.72 of the total \$317,646.59 that was available and built the following additional mileage:

Wagon roads	18 miles
Winter sled roads	52 miles
Trails	32 miles

The board had also allotted \$5,000 to begin construction of an approximately 80-mile winter trail from Fairbanks to Chena Hot Springs and staked about 450 miles of trails for winter travel only.¹⁰⁰ In addition, the board undertook the following important new projects during the season: Wagon roads of 3.1 miles from Juneau to Sheep Creek; 5 miles from Douglas to Gastineau Channel; a 10-mile extension from Circle City to Central House; sled roads of 29 miles from Ruby to Long Creek; and a 12-mile extension from Moose Pass to the Kenai Peninsula.¹⁰¹

The year 1912 was an eventful one for Delegate Wickersham as well. In hearings held in 1910 on the Beveridge bill, it had soon become evident that there was strong opposition to the president's plan. After some political maneuvering the administration had abandoned its proposal. The defeat was in no small part due to Wickersham's skillful use of the conservation issue to obtain support for Alaska home rule. The delegate pointed out that the resources of Alaska should be used for the benefit of the entire country. Yet, so far, the territory had been exploited by a few large, absentee-controlled corporations, such as the monopolies which harvested the fur seals and salmon and mined the copper deposits. Home rule, Wickersham asserted, would allow proper utilization of Alaska's wealth.¹⁰²

Wickersham's home-rule scheme gained substantial support in 1911 from the legislatures of Washington and Oregon and commercial associations of those states. The senators and representatives from these areas were instructed to vote for Alaska home rule. Democratic presi-

dential aspirants, such as Woodrow Wilson, Oscar Underwood, and William Jennings Bryan, were pledged to support the home-rule plank of their party. In this favorable atmosphere, hearings on Wickersham's home-rule bill begin in the spring of 1911 before the House Committee on Territories, and by late summer of 1911 the passage of the Wickersham measure seemed reasonably assured.

In a special message to Congress on February 2, 1912, President Taft dealt extensively with Alaska. He urged Congress to enact legislation which would help the territory develop its resources. On April 24, 1912 the House unanimously passed Wickersham's elective legislative assembly bill, and on July 24, 1912, the Senate passed the delegate's measure in essentially the same form in which its author had drafted it. On August 24, 1912 the president signed the Wickersham measure into law. The Organic Act of 1912 gave Alaska a senate of eight members and a house of 16 to be chosen equally from the four judicial divisions. Although limited in powers, the legislature could nevertheless deal effectively with a wide variety of matters.¹⁰⁴

The first territorial legislature met in Juneau early in 1913, and among other matters, it dealt with road construction. It repealed the road-tax law of April 27, 1904, which had required two-days labor on public roads or the payment of \$8. In its stead it enacted a substitute, levying a flat tax of \$4 inside as well as outside incorporated towns. While in force, a substantial amount of work had been accomplished on local projects under the 1904 road-tax law, but there never had been any coordination between projects nor planning of any kind. In some districts, superintendents of the Board of Road Commissioners for Alaska had supervised the work, although never formally charged with the authority or responsibility for handling it generally.¹⁰⁵

In 1915 the territorial legislature created road districts that corresponded with judicial divisions and provided for an elected road commissioner for each district. Each commissioner was to receive as compensation five percent of all money expended by him. And although each road commissioner could appoint two assistants as inspectors, the legislature made no provisions for their compensation. To pay for the work, the lawmakers appropriated 75 percent of forest revenues for this purpose.¹⁰⁶

In 1917 the territorial legislature once again dealt with road matters. It appropriated \$20,000 for shelter cabins, to be expended under the general supervision of the governor of Alaska by the road commissioners, who were to receive five percent of this fund for their services. It also created the Territorial Board of Road Commissioners and instructed it to submit estimates for the construction of essential road work. Within each road district it created a divisional board, consisting of an elected chairman (receiving an annual salary of \$2,000) and two other members to be appointed by the territorial board (receiving expenses when working). Each divisional board was required to submit an annual report to the territorial board. The legislature also appropriated \$400,000 for the biennium, to be equally divided between the four road districts.¹⁰⁷ The work of the territorial legislature in the transportation field indicated that it would soon develop some sort of relationship with the Board of Road Commissioners for Alaska.

In the meantime the administration's attitude toward Alaska had changed as well. Even before the passage of Wickersham's home-rule bill, President Taft had sent a special message to Congress on February 2, 1912, asking for government construction and ownership of an Alaska railroad. In fact, Wickersham's home-rule bill had carried a Taft rider, section 18, authorizing the president to appoint a commission to study and recommend those Alaska railroad routes that would best develop the territory's resources for the use of all Americans. Taft appointed an Alaska Railroad Commission, consisting of an army, navy, and civilian engineer in addition to Alfred H. Brooks, an old Alaska hand of the U.S. Biological Survey. The commission left Seattle on September 10, 1912 for Alaska and handed their finished report to the president on January 20, 1913.

A variety of railroad bills was introduced in Congress. In early 1914 both houses passed an Alaska railroad measure, which President Woodrow Wilson signed into law on March 12, 1914. Essentially, the act empowered the president to choose the location and authorize construction of a railroad or railroads connecting at least one Pacific port with the great interior rivers and one or more coal fields. There were two restrictions on the president's authority. One limited the aggregate mileage to one thousand, and the other authorized a maximum expenditure

of \$35 million. After the president had chosen a route, construction of the Alaska Railroad, connecting Seward at tidewater with Fairbanks in the interior for a distance of 470 miles, began in April 1915. It was completed in 1923 at a cost nearly twice that of the original authorization.¹⁰⁸

While the railroad boom engaged the attentions of northern residents, the Board of Road Commissioners for Alaska continued its construction and maintenance work but also took the time to assess the work it had accomplished since 1905. Between the latter year and 1913, Congress had appropriated a total of \$1,375,000 for the "construction and maintenance of military and post roads, bridges, and trails" in Alaska. The Alaska Fund had yielded \$1,160,829.62 in that time span, for a total of \$2,535,829.62 from both sources. With those funds, the board had constructed and maintained the following mileage of roads and trails:

Wagon road	862 miles
Winter sled roads	617 miles
Trail	2,167 miles

The cost per mile, including maintenance and all expenditures by the board, had amounted to:

Wagon road	\$2,489.68
Winter sled road	\$ 278.80
Trail	\$ 90.44

Also, at different times since 1905, the towns of Fairbanks, Nome, Cordova, and some of the large mining companies had made cash donations of approximately \$20,000 to aid the work of the board.¹⁰⁹

During its eight years of existence, the board had accomplished much, although the mileage constructed so far constituted only the very beginning of a proper transportation system for Alaska. The board considered the 419-mile-long wagon road from Valdez to Fairbanks, including the Willow Creek-Chitina branch, to be its most important achievement so far. With an average expenditure of about \$1,500 per mile, the board thought it could be improved to the standards of a fair automobile road. In fact, during the late summer of 1913, the board had sent a three-quarter ton field truck "of the type being experimented with by the Quartermaster and Medical Corps of the Army" on a round trip from Valdez to Fairbanks. The vehicle left Valdez on July 28 and returned on August 19, after having made a side trip to Chitina. The truck had

covered 922 miles, making about 50 miles per day. In some instances, the truck had to be helped through soft spots on steep grades, but overall the trip had been successful.¹¹⁰

The board also had prepared an estimate of what it would cost to complete a system of roads and trails for Alaska that would meet traffic needs 10 years in the future, namely:

Maintenance of present roads	\$1,250,000
Completion of projects on which work has already started and maintenance after completion	\$1,420,000
Projects approved but on which no construction has been undertaken	\$2,780,000
Projects not yet of importance but will become so as other roads are constructed	<u>\$1,800,000</u>
TOTAL	<u>\$7,250,000</u>

Additionally, the board considered the matter of railroad construction but concluded that Alaska needed wagon roads first. While disavowing any intent to discourage railroad construction, the board nevertheless pointed out that

after several years of careful observation and study of the land transportation conditions and of the natural inducements to development and settlement which exist, is convinced that no rapid or general development will follow the construction of trunk lines of railroad into the interior unless preceded or accompanied by the construction of numerous wagon roads and trails as feeders, and even then the development will be slow.¹¹¹

In 1914 the board reported that Congress had appropriated \$155,000 but that \$54,787.83 had been spent to build a dike around Valdez in order to protect the terminals and buildings of the military cable and telegraph system from glacial floods. The Alaska Fund had yielded \$170,688.37. There just had not been enough money to construct much additional road and trail mileage since nearly all of the funds were required for the repair and maintenance of the existing system. In fact, board president Richardson cautioned that "this will become practically a fixed condition from year to year, with the amount of mileage now required to be maintained unless some provision shall be made for increasing the fund to take care of new projects."¹¹²

Different communities throughout Alaska presented meritorious projects to the board every year for which there just were not any

funds. The City of Fairbanks, for example, had unsuccessfully petitioned the board to build a bridge across the Chena River, which divided the city. It then had contacted the Secretary of War and asked for help. Delegate Wickersham also was informed of the request. The delegate quickly fixed the blame for unaccomplished work. It was simple. Richardson just did not ask for enough money in his annual budget presentations. For the fiscal year ending June 30, 1916, Richardson, through the War Department, had requested a mere \$125,000. "Instead of asking for \$750,000 as Richardson has always talked to you about," Wickersham stated,

he only asked for a piddling amount, and then he comes to Alaska and lies to you people by saying that he cannot get the appropriation he asks for. The truth is that he makes no effort to secure any appropriation except merely to keep the work going from year to year and to keep up his commission. He does not want to build the bridge across the slough at Fairbanks and never will build it until the Northern Commercial Company tells him to. You know and I know and everybody else knows that Richardson and his Road Commission is under the control of the Northern Commercial Company. . .

Wickersham did not mention that since 1913 the Board of Road Commissioners for Alaska was authorized only to submit estimates necessary to maintain the existing road system. The War Department had made this ruling because the special congressional funds for Alaskan road work had always been charged against the general financial support of the army.¹¹³

Richardson soon enough heard of the delegate's allegations. On November 25, 1913 he had submitted a special report on the needs for work in Alaska to the War Department and accompanied it with a request for a supplemental appropriation for \$750,000. He had not been encouraged by the department, however, but told Alaskans during the summer of 1914 that he still hoped Congress would consider the request favorably. That had not happened. Calling him a liar and the board under the control of the Northern Commercial Company was totally unjustified, Richardson stated, and indeed it was Wickersham who

is a purposeful and malignant liar himself and depends upon his position as a member of Congress to escape the just results of any defamatory attack he may choose to make. His entire letter is without justification in any existing facts and is perhaps what one might expect from a scurrilous, political blatherskite, permanently afflicted with about every phase of mental perversion and a complete moral idiocy.¹¹⁴

It now was Wickersham's turn to be outraged. After persecuting Richardson for years, he now found the latter's remarks "so ungentlemanly and abusive in its character as not to deserve reply. . . ." But reply he did, and in great detail at that. Basically, Wickersham's complaint was that Richardson seemingly never had

a very clear conception of the duties of the delegate from Alaska whose rights you have always treated as of minor importance, while you have always magnified those of your own position and assumed to extend them to cover those of a representative in Congress. It is often difficult to tell from your acts whether you or the delegate is the representative from Alaska.

Wickersham lengthily lectured Richardson on the differences between their respective duties and prerogatives. What particularly bothered the delegate was the fact that Richardson always spent the winters in Washington and was on good terms with many members of Congress and the executive branch. Wickersham furthermore was convinced that Richardson had always lobbied "in opposition to his (the delegate's) efforts to procure better legislation for Alaska, and both in Alaska and Washington you have threatened, abused, cursed, and otherwise harassed and impeded him in the performance of his duty." Wickersham recounted a long list of grievances, real or imagined, which he harbored against Richardson, including meddling in Alaskan local politics, favoritism toward the Northern Commercial Company and various other large economic interests, and incompetency in conducting the work of building roads and trails, bridges, and ferries. In conclusion, Wickersham reminded Richardson that it was the delegate's right and duty to protect the interests of Alaskans

from your viciously incompetent mismanagement of the road fund, and if you think you can prevent it by threats and profanity you are greatly mistaken. If you could be taught to appreciate your position, . . . to give more attention to the building of roads . . . and less to politics, to use less liquor and more temperate language . . . to let your road work out by bids to contractors and draw your checks on a government depository, to compel your foremen to work more and play poker and pangingi less--then you might get to the point where the people would have some confidence in you and less disgust at your failure.¹¹⁵

Doubtlessly, Wickersham disliked Richardson so intensely because he saw in him a competitor for power and influence, and he did not forgive

him for having championed President Taft's scheme for a military government for the territory. In addition, the colonel had a power base in Alaska through his control of a sizable payroll. The delegate, rightly or wrongly, was convinced that Richardson used his territorial powers and influence to hurt him politically. The colonel was convinced that Wickersham was out to wreck his military career. By 1916 the rift between the two men was beyond repair.

Early in 1916, Richardson again requested a supplemental appropriation of \$500,000 for 1917 in order to finish the Valdez-Chitina-Fairbanks military road and continue work on the Ruby-Long Creek Road (Figure 3). The two antagonists appeared before the House Committee on Military Affairs on April 11, 1916 and plied for the extra money. Wickersham argued that it was high time for the board to finish its work in Alaska, while Richardson maintained that the army, which had done much of the pioneer work in opening American frontiers, was doing the same thing in Alaska. "What has been accomplished in Alaska," the colonel stated, "is creditable to the Army and can only be appreciated fully by those familiar with the conditions prior to 1898 or who can picture the present condition if the Army work did not exist." Committee members listened attentively but did not make any promises.¹¹⁶

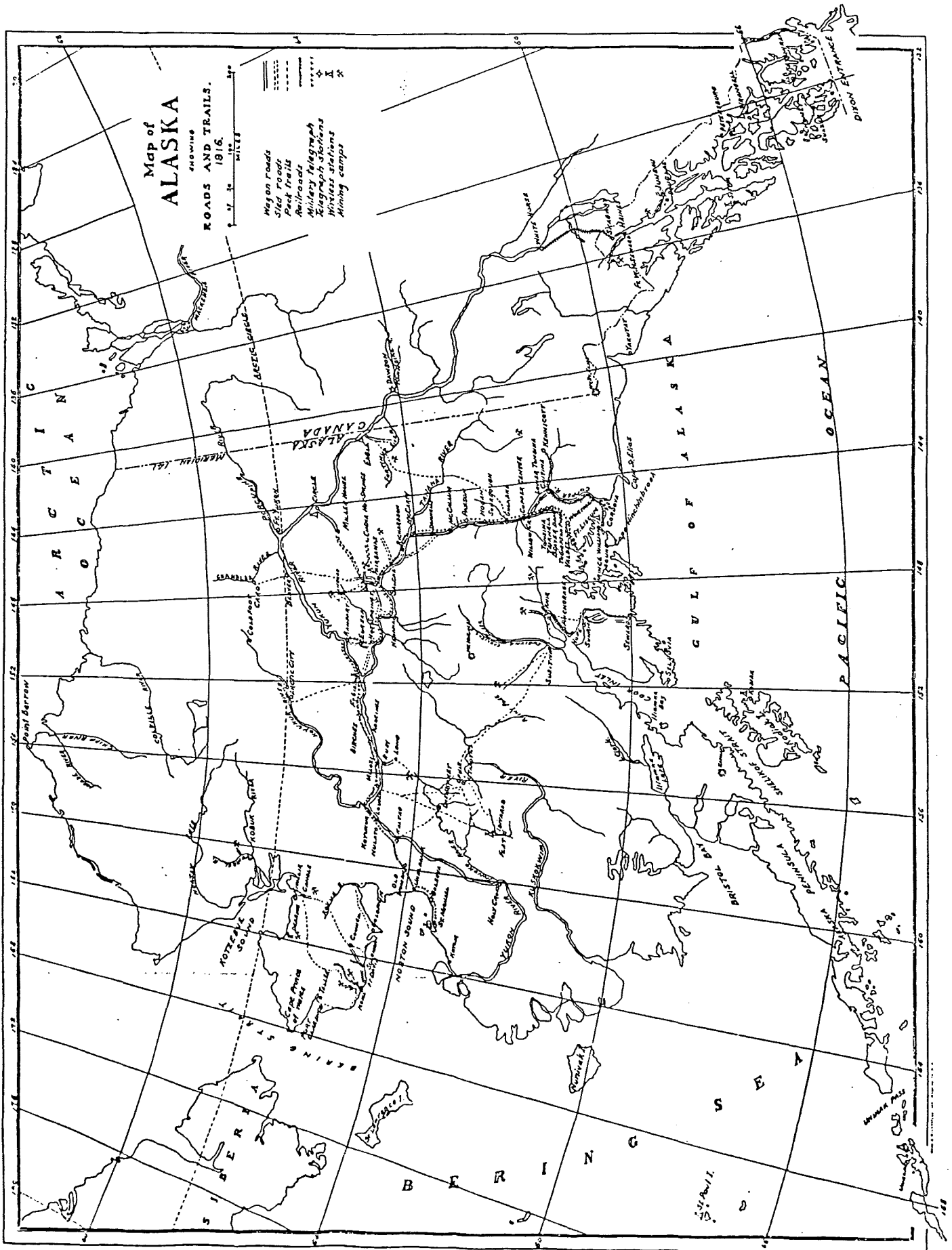
A year later, Wickersham had changed his mind about the requested supplemental appropriation and noted that he had been "working up an assault on the appropriation carried in the Military Appropriation Bill of \$500,000 for the Alaska Board of Road Commissioners . . ." He did not want to go on record as opposing the money, so he asked a colleague from Ohio to make the point of order against the item. "I intend to put every obstacle in the way of the Board and hope finally to drive it out of existence. I feel fully justified in doing it for it seems the only way to protect the 'Alaska Fund' and prevent the Board from wasting it also." The next day his colleague, as agreed upon, raised the point of order, claiming that the money was not authorized by any previous law. The Speaker of the House sustained the objection, "and out went the \$500,000 appropriation for the support of Colonel Richardson's wagon road work in Alaska." Wickersham recalled that he "sat quietly in my seat and heard the fight without saying a word. The Congressional Record of this date contains the record of the beginning of the end of

the Alaska Board of Road Commissioners--a proper end." On February 25 the delegate noted that Richardson had been busy telegraphing friends in Alaska, telling them that "I killed his appropriation and I am getting telegrams urging appropriation." Wickersham contacted his Alaskan friends and told them to look at the Congressional Record, which proved that he had not objected to the appropriation. Privately, he remarked that "It is necessary to the freedom and development of Alaska that this appropriation be fully and finally beaten, so we may be rid of Richardson and his domination, and I intend to see that it is done be the consequences good or bad to me."¹¹⁷

Much to the delegate's chagrin, however, the Senate restored the \$500,000 and, even worse, the War Department promoted Richardson to the rank of brigadier general in the National Army. But much to Wickersham's delight, the new general resigned as president of the Board of Road Commissioners for Alaska on December 29, 1917 and left Alaska shortly thereafter to assume command of the 78th Infantry Brigade, 39th Division, then at Camp Beauregard, Louisiana. Richardson served with distinction in France and next commanded American forces at Murmansk, Siberia. For his part in this difficult and trying situation he was awarded the Distinguished Service Medal in April 1922. He returned to the United States in October 1919, and with the mustering out of the National Army he was returned to his permanent rank of colonel and retired on October 31, 1920. He died in May 1929 at the age of 68 at Walter Reed Hospital in Washington, D.C.¹¹⁸

Wickersham retired from the delegateship in 1920 but reentered politics in 1930 and served another term as delegate. He was defeated in the 1932 Democratic landslide and died in Juneau at the age of 82 in October 1939. In his book Old Yukon, published in 1938, Wickersham paid tribute to his old nemesis, stating that "the Richardson Highway, from Valdez to Fairbanks, is a fitting monument to the first great road-builder in Alaska, General Wilds P. Richardson."¹¹⁹

Figure 3. Alaska roads and trails, 1916.



Source: U.S. Cong., House, 1916. *Roads and Trails in Alaska.*

REFERENCES

1. John Edwards Caswell, Arctic Frontiers: United States Explorations in the Far North (Norman: University of Oklahoma Press, 1956), pp. 13-67.
2. Morgan B. Sherwood, Exploration of Alaska, 1865-1900 (New Haven and London: Yale University Press, 1956), pp. 16-17.
3. Ibid., pp. 17-20.
4. Ibid., pp. 21-30.
5. Morgan B. Sherwood, "George Davidson and the Acquisition of Alaska," Pacific Historical Review, May 1959, pp. 141-154.
6. U.S. Cong., Senate, 56C., 1S., Captain Charles P. Raymond, Reconnaissance of the Yukon River, 1869, in Compilation of Narratives of Explorations in Alaska, Senate Rept. No-1023 (Washington: GPO, 1900), P. 41.
7. Ibid., Lt. Patric Henry Ray, International Polar Expedition to Point Barrow, 1884, pp. 363-380.
8. Ibid., Lt. Frederick Schwatka, Report of a Military Reconnaissance Made in Alaska in 1883, p. 316.
9. Ibid., Lt. W. R. Abercrombie, Report of a Supplementary Expedition into the Copper River Valley, Alaska, 1884, pp. 381-408.
10. Ibid., Lt. Henry T. Allen, Report of a Military Reconnaissance in Alaska Made in 1885, pp. 445, 488-489.
11. Sherwood, Exploration, pp. 86-87.
12. A. Hunter Dupree, Science in the Federal Government: A History of Policies and Activities to 1940 (Cambridge: Harvard University Press, 1957), pp. 215-231.
13. A set of published Coast and Geodetic Survey charts is in R G 23, N.A.
14. Sherwood, Exploration, p. 192.
15. Robert N. De Armond, The Founding of Juneau (Juneau, Alaska: Gastineau Channel Centennial Association, 1967), pp. 23-37.
16. Bobby Dave Lain, North of Fifty-Three: Army Treasury Department, and Navy Administration of Alaska, 1867-1884, Unpublished Ph.D. Dissertation, The University of Texas at Austin, 1974, pp. 44-45.

17. Claus-M. Naske, "The Historic Forty-Mile District," The Northern Engineer, Summer 1976, p. 42.
18. Ibid.
19. William R. Hunt, North of 53°: The Wild Days of the Alaska-Yukon Mining Frontier, 1870-1914 (New York and London: MacMillan Publishing Co., and Collier MacMillan Publishers, 1974), pp. 24-25.
20. Sherwood, Exploration, pp. 143-144.
21. Ibid., pp. 152-153.
22. Claus-M. Naske, An Interpretative History of Alaskan Statehood (Anchorage, Alaska: Alaska Northwest Publishing Company, 1973, p. 4.
23. Ibid., pp. 4-5.
24. Ibid.
25. U.S. Army, Alaska, The Army's Role in the Building of Alaska, USARAL Pam 360-5, April 1969, pp. 26-28.
26. Ibid., p. 28.
27. Ibid.
28. Ibid., p. 32.
29. Ibid., pp. 32-34.
30. Sherwood, Exploration, pp. 156-162.
31. USARAL Pam 360-5, p. 41.
32. Ibid., pp 41-42.
33. Sherwood, Exploration, pp. 163-166.
34. Ibid., p. 167.
35. William A. Quirk, III, Historical Aspects of the Building of the Washington-Alaska Military Cable and Telegraph System, with Special Emphasis on the Eagle-Valdez and Goodpaster Telegraph Lines, 1902-1903 (Washington, D.C.: U.S. Department of the Interior, Bureau of Land Management, 1974), p. 1.
36. Ibid.
37. Ibid., p. 2.

38. Ibid., pp. 2-3.
39. Ibid., p 4.
40. Quirk, Washington-Alaska Military Cable, pp. 6-7.
41. Ibid., p 7.
42. USARAL Pam 360-5, pp. 53-63.
43. U.S. Cong., Senate, 58C., 2S., S. Rpt. 282, Conditions in Alaska, Report of Subcommittee of Committee on Territories (Washington: GPO, 1909), p 1.
44. Ibid., p. 2.
45. U.S. Cong., Senate, 58C., 2S., S. Rpt. 282, Part 2, Conditions in Alaska, Hearings before Subcommittee of Committee on Territories Appointed to Investigate Conditions in Alaska (Washington: GPO, 1904), P. 9.
46. Ibid., pp. 54-64.
47. Ibid., pp. 94-101.
48. Ibid., pp. 118-124.
49. Ibid., pp. 92-93, 164.
50. Senate Rpt. 282, Conditions in Alaska, Report of Subcommittee of Committee on Territories, pp. 9-11.
51. Ibid., pp. 11-17.
52. U.S. Cong., House, 58C., 3S., House Doc. 192, Wagon Road from Valdez to Fort Egbert, Alaska, and Military Trail Between Yukon River and Coldfoot, Alaska (Washington: GPO, 1904), pp. 1-3.
53. Ibid., pp. 16-23.
54. Jeannette P. Nichols, Alaska: A History of its Administration, Exploitation, and Industrial Development During its First Half Century Under the Rule of the United States (New York: Russell & Russell, Inc., 1963), pp. 231-233; Report of the Board of Road Commissioners for Alaska for the Season of 1905, November 1, 1905, pp. 1-2, xerox copy.
55. Dumas Malone, ed., Dictionary of American Biography, vol. 15 (New York: Charles Scribner's Sons, 1935, p. 576.
56. 1905 Report of the Board of Road Commissioners, pp. 4-5.

57. Ibid., pp. 7-8.
58. Ibid., pp. 10-11.
59. Ibid., pp. 13-14.
60. 1905 Report of the Board of Road Commissioners, pp. 15-17.
61. Ibid., pp. 15-19.
62. Ibid., pp. 23-27.
63. Ibid., pp. 29-30, 44-45.
64. 34 Stat. 192.
65. War Department, Report of the Board of Road Commissioners for Alaska, 1913 (Washington: GPO, 1914), p 8.
66. Board of Road Commissioners, Report Upon the Construction and Maintenance of Military and Post Roads, Bridges, and Trails, Alaska 1906 (Washington: GPO, 1907), pp. 61, 2-3.
67. Ibid., pp. 3-6.
68. Ibid., P. 8.
69. Ibid., P. 9.
70. Ibid., pp. 20-21.
71. Ibid., pp. 10, 60.
72. Ibid., pp. 10-11.
73. "Road Building in Alaska," Alaska-Yukon Magazine, March 1907, pp. 20-21.
74. Report of the Board of Road Commissioners for Alaska to the Secretary of War, 1907, in Annual Reports, War Department, Fiscal Year Ended June 30, 1907 (Washington: GPO, 1907), pp. 5-6; "Ed. S. Orr & Company's Stage Line," Alaska-Yukon Magazine, June 1909, P. 190.
75. 1907 Report of the Board of Road Commissioners for Alaska, p. 6.
76. Ibid., pp. 7-8.
77. Ibid., pp. 10, 9.
78. Ibid., pp. 11-15.
79. U.S. Department of the Interior, Office of Territories, Alaska Road Commission, Annual Report for the Fiscal Year Ended June 30, 1956 (Juneau, Alaska: August 31, 1956), p. 43.

80. Sidney Charles, "Progress of Road Building in Alaska," Alaska-Yukon Magazine, January 1911, pp. 38-40.
81. George W. Rogers and Richard A. Cooley, Alaska's Population and Economy: Regional Growth, Development, and Future Outlook, Vol. II, Statistical Handbook (College, Alaska: University of Alaska, Institute of Business, Economic, and Government Research, 1963), p. 28; Sidney Charles, "Progress of Road Building in Alaska," Alaska-Yukon Magazine, January 1911, pp. 38-40.
82. Nichols, Alaska, pp. 24-25; Evangeline Atwood, Frontier Politics: Alaska's James Wickersham (Portland, Oregon: Binford & Mort, 1979), p. 220.
83. Naske, Statehood, pp. 26-27.
84. Wickersham to Secretary of War J. M. Dickinson, January 2, 1910, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
85. Ibid.
86. Richardson to Chief of Staff, January 27, 1910, Secretary of War J. M. Dickinson to Wickersham, January 29, 1910, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
87. Wickersham to Secretary of War J. M. Dickinson, February 12, 1910, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
88. Confidential Memorandum for the Secretary of War, February 17, 1910, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
89. Wickersham to Martin Gateley, May 20, 1910, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.; Alaska Citizen, July 23, 1910; Fairbanks Daily Times, July 27, 1910.
90. Richardson to Fairbanks Daily Times, August 7, 1910, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
91. Wickersham to Secretary of War Henry L. Stimson, July 6, 1911, Major General Arthur Murray to Wickersham, July 11, 1911, file Orchard, Samuel C., General Correspondence, Adjutant General's Office, R.G. 94, N.A.; Atwood, Wickersham, pp. 226-234.
92. Richardson to Adjutant General, October 23, 1911, file Orchard, Samuel C., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.

93. The Daily Alaska Dispatch, December 23, 1911.
94. War Department, General Orders No. 4, February 17, 1912, file Orchard, Samuel C., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
95. Richardson to Adjutant General, February 9, 1912, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
96. Secretary of War to Richardson, January 31, 1912, February 16, 1912, Richardson to Adjutant General, February 9, 1912, President to Secretary of War, March 25, 1912, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
97. Valdez Miner, April 7, 1912; John Orchard to Henry L. Stimson, Secretary of War, February 19, 1912, Lola M. Orchard to Henry L. Stimson, Secretary of War, April 25, 1912, Henry L. Stimson, Secretary of War, to John Orchard, June 28, 1912, Sam C. Orchard to John Orchard, July 14, 1912, Lola M. Orchard to Henry L. Stimson, Secretary of War, November 14, 1912, file Orchard, Samuel C., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
98. War Department, Report of the Board of Road Commissioners for Alaska, 1912 (Washington: GPO, 1912), pp. 5-6.
99. Ibid., pp. 6-7.
100. Ibid., pp. 26, 7.
101. Ibid., p. 7.
102. Naske, Statehood, p. 30.
103. Ibid.
104. Ibid., p. 31.
105. 33 Stats. 391; Session Laws of Alaska, 1913, Chap. 3, April 5.
106. Session Laws of Alaska, 1915, Chap. 27, April 28.
107. Session Laws of Alaska, 1917, Chap. 17, April 30; Session Laws of Alaska, 1917, Chap. 36, May 3; Session Laws of Alaska, 1917, Chap. 35, May 3.
108. William H. Wilson, Railroad in the Clouds: The Alaska Railroad in the Age of Steam, 1914-1945 (Boulder, Colorado: Pruett Publishing Company, 1977), pp. 17-31.

109. War Department, Report of the Board of Road Commissioners for Alaska, 1913 (Washington: GPO, 1914), pp. 8-10.
110. Ibid., pp. 5-13.
111. Ibid., pp. 14-15.
112. War Department, Report of the Board of Road Commissioners for Alaska, 1914 (Washington: GPO, 1914), p. 5.
113. Wickersham to Wallace Cathcart, December 21, 1914, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
114. Wickersham to Wallace Cathcart, June 23, 1915, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
115. Wickersham to Richardson, July 29, 1915, file Richardson, Wilds P., General Correspondence, Adjutant Generals Office, R.G. 94, N.A.
116. U.S. Cong., House, 64 C, 1 S., Roads and Trails in Alaska, Extracts from Hearings before the Committee on Military Affairs on the Bill Making Appropriations for the Support of the Army for the Fiscal Year 1917, Statements of James Wickersham and Colonel W. P. Richardson (Washington: GPO, 1916), pp. 3-16.
117. James Wickersham Diary, February 20, 21, 22, 25, 26, 1917, University of Alaska Archives, Fairbanks, Alaska.
118. Malone, American Biography, p. 576.
119. James Wickersham, Old Yukon: Tales--Trails--and Trials (Washington, D.C.: Washington Law Book Co., 1938), p. 474.

APPENDIX A

WORK PERFORMED DURING THE 1917 CONSTRUCTION SEASON*

SOUTHEASTERN DISTRICT.

(Mr. J. C. HAYES, Superintendent.)

Route 1—Prince of Wales Island Road (4.1-mile road, 6.8 miles trail).—The work of the year was confined to the wagon-road section, the greater part of which is planked. Worn planks were replaced and the remainder leveled where necessary. An extension of 200 feet at the western end of the road was constructed at a cost of \$2 per linear foot. The total expenditure was \$676.09.

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*SOURCE: War Department. 1917. Annual Report of the Board of Road Commissioners for Alaska. 1917. pp. 17-34.

*Route 2—Juneau-Eagle River Road (16 miles road, 14 miles trail).—*A branch road 3,600 feet in length was constructed during the year, connecting the main road with the bridge previously built over Mendenhall River. The new road was graveled throughout its entire length at a cost of 15 cents per linear foot, and a 200-foot framed trestle crossing a tidal slough was constructed at a cost of \$3 per foot. The work of continuing this branch to Auk Lake is now in progress.

General maintenance on the main wagon road included increasing the depth of surfacing to enable it to withstand the heavy automobile traffic, cleaning ditches, and replanking about 600 linear feet of bridges and culverts at a cost of \$1.50 per foot. A new bridge, consisting of one 50-foot pony-truss span and 50 feet of approaches, was built over Lemon Creek at a cost of \$650.

*Route 3—Haines-Pleasant Camp Road (47.5 miles).—*The year's work on this route was entirely maintenance and embraced resurfacing weak sections with gravel and repairing bridges and culverts. Gravel in place cost approximately 75 cents per cubic yard, the average haul being less than 3,000 feet. The total cost of all work averaged \$70 per mile.

*Route 14—Sitka-Indian River Road (3.4 miles).—*Approximately 3,000 feet of new road was constructed at a cost of \$1,300 in extending this route toward Sawmill Bay, and a small amount of work was done in protecting the piers of the Indian River bridge during high water.

*Route 29—Juneau-Sheep Creek Road (3 miles).—*The work of the year on this route consisted chiefly of widening the narrowest parts of the road and resurfacing it throughout the greater part of its length. Gravel in place cost \$1 per cubic yard, the average haul being about 1 mile. A 60-foot trestle bridge, destroyed by a snowslide during the winter, was replaced at a cost of \$600. The average cost of all work was \$1,864.80 per mile, the high cost being due to unfavorable weather conditions and the very heavy automobile travel over the road.

*Route 40—Douglas-Gastineau Channel Road (2 miles).—*A total of \$414.10 was expended for minor repairs to this road during the year.

*Route 43—Petersburg-Scow Bay Road (.5 mile road, 1 mile planked trail).—*Twenty-eight hundred feet of this road was graded during the year at a cost of \$2,285.70. The unusually high cost was due largely to the nature of the soil encountered, which was a blue glacial clay.

The completion of this road will be undertaken next year by the Forestry Service.

*Route 44—Skagway Valley Road (2.5 miles).—*The work of the year on this route was devoted chiefly to the construction of 2.5 miles of road extending north from the bridge previously built over the Skagway River. The new road is surfaced where gravel was available in the ditches. Some additional work was required during the year in protecting the bridge from damage by high water.

*Route 45—Silver Bow Basin Road (4 miles).—*This road extends from Juneau through the Silver Bow Basin to the Perseverance mine. It was constructed by the mining company, but was taken over by the board in 1915. The work of the past year consisted of

surfacing with gravel the softest parts of the road, cleaning ditches, and reconstructing 600 feet of planked roadway at a cost of \$1 per linear foot. The cost of gravel averaged \$1.25 per cubic yard.

The average cost of all work was \$571.42 per mile.

VALDEZ DISTRICT.

[Mr. J. H. INGRAM, Superintendent.]

Route 4A—Donnelly-Washburn Sled Road (55 miles).—The construction of temporary winter bridges on the Big Delta and Little Delta Rivers and a small amount of grading on approaches to streams not bridged comprised the year's work on this route. The bridges were constructed by contract, those over the Big Delta costing \$2 per linear foot, and that over the Little Delta \$2.50 per linear foot.

Route 4B—Valdez-Ernestine Road (63 miles).—Throughout a great part of its length this route is subject to attack by glacial streams, and its construction and maintenance have been difficult and expensive. The work of the past year has embraced the repair of damage caused by these streams, general maintenance, and improvements of substantial and expensive character.

The 3-mile section crossing the glacial moraine adjacent to Valdez has been built up to a grade above the highest stage of water, and the embankment protected by brush and rock revetment. Two men were kept on this section during the entire working season, and all threatened portions were strengthened before any serious damage could result.

Extremely high water in Lowe River during the late summer washed out short sections of the road at the head of Keystone Canyon and at the 5-mile post. The repair of these sections necessitated a considerable amount of rock work.

The bursting of glacial reservoirs at the source of a small stream near the head of Keystone Canyon twice destroyed a short section of the road and changed the channel of the stream, requiring the reconstruction of the section and the removal of the bridge to the new channel.

The usual maintenance work comprised the removal of slides and snow, cleaning ditches, repairing culverts and bridges, etc. In addition, about 3 miles of road was graded, and a total of 10,000 cubic yards of gravel surfacing placed. The cost of the gravel depended largely upon the length of haul but averaged approximately \$1 per cubic yard.

The average cost of all work on this route was \$688.34 per mile.

Route 4C—Ernestine-Willow Creek Road (29.3 miles).—The work of maintenance and improvement was carried on over the entire route during the year, and embraced cleaning ditches and removing slides and windfalls, repairing bridges and culverts, grading approximately 2 miles of road, and placing 1,200 cubic yards of gravel surfacing. The average cost of the work was \$383.22 per mile.

Route 4D—Willow Creek-Gulkana Road (36 miles).—Work on this route during the year included grading about 2.5 miles of road, laying 1,100 linear feet of corduroy, cleaning ditches, and general repairs to the road and bridges. A maintenance crew of two men was employed on this route for the last six weeks of the year drag-

ging the road and repairing culverts. The average cost of all work during the year was \$487 per mile, but the cost of maintenance should be materially less in the future, as the entire route is now in good condition.

Tazlina Bridge.—The Tazlina River bridge was in part reconstructed during the spring of 1917. As originally built, together with additions made necessary by changes in the main channel, this bridge, exclusive of approaches, consisted of three 75-foot spans, two 108-foot spans, and one 50-foot span. The 108-foot spans were constructed in 1906, and it was thought advisable to replace them and to repair the entire bridge. The work done was as follows: The two south 75-foot spans were raised 2 feet to conform to the elevation of the new part of the bridge, which was adopted in order to give greater security during extreme high water. The 108-foot spans and the 50-foot span were demolished and the north 75-foot span was taken down and replaced by two 100-foot spans of the new standard type (Pratt combination trusses). The 75-foot span was reerected north of the 100-foot spans and the bridge continued northward to the bank by a 60-foot pony-truss combination span and 170 feet of pile trestle. The truss timbers and stringers of the new spans are Douglas fir; the remainder of the timber used in the bridge is Alaska spruce cut in the vicinity of the bridge site. Below is an itemized statement of the field cost of the bridge:

Material (steel, lumber, pile shoes, etc.)	85,870.57
Equipment	751.05
Freight	1,566.11
Subsistence	1,484.96
Forage and care of animals	560.15
Labor	8,214.63
Miscellaneous	51.64
Total	18,499.11

Route 4E—Gulkana-Sourdough Road (21.5 miles).—This is a difficult section to maintain, as the soil is largely clay and muck, and there is but little gravel available within a reasonable distance. The work of the year was devoted to widening the clearing, where necessary, to allow the sun to reach the road, grading with a road grader about 3.5 miles previously ditched by hand, and general repairs. Further grading on this route is being carried on this season. Because of the soil conditions the road is given a higher crown than is usual, and it is thought that after completion of the grading it can be kept in fair condition by a small maintenance crew. The cost of the work done during the year averaged \$682.65 per mile.

Route 4F—Sourdough-168 Milepost Road (18.2 miles).—In addition to ordinary maintenance, approximately 9 miles of road was graded with a road machine to a width of 24 feet. The clearing was widened to 60 feet along the greater part of this 9 miles, to allow the sun to reach the road. A small amount of gravel surfacing was laid at a cost of approximately \$2.25 per cubic yard, the high cost being due to the scarcity of gravel and the long hauls necessary.

Route 4G—168 Milepost-Delta River Road (3.8 miles).—The work of the year on this route consisted chiefly of ordinary maintenance, embracing the removal of slides, cleaning ditches, and repairing culverts. Approximately 2 miles of road was graded and 9,200 feet

surfaced with gravel. A short pile bridge was built over the glacial stream near mile 202, and a dike 700 feet in length was constructed for the purpose of confining the stream to its present channel. The average cost of all work was \$306.72 per mile.

Route 4H—Delta River-McCarty Road (73.4 miles).—The work performed on this route during the year embraced the removal of slides, repairing bridges damaged by high water, grading 2 miles with a grader, and surfacing 1 mile with gravel.

The bridge over the glacier stream near Miller's was lengthened by the construction of two 60-foot spans and 66 feet of approach. The added spans are of the new pony truss type, with steel lower chords and native timber compression members. The cost of this work, exclusive of freight, was as follows:

Material	\$1,714.10
Labor:	
Cutting and getting out timber.....	831.29
Whipsawing timber.....	416.10
Constructing piers.....	506.30
Framing trusses.....	143.29
Erecting trusses.....	107.43
Placing floor system.....	206.15
Total.....	3,924.66

To confine this stream to its present channel, a dike 585 feet long and 5 feet high was constructed, with its upstream slope protected by a heavy layer of brush secured at the top to the dike and weighted with rock held in place by wire netting. The total cost of the dike was \$588.73.

Route 4I—McCarty-Richardson Road (20.6 miles).—In addition to general repairs to the road between McCarty and Shaw Creek, the work of the year was confined chiefly to the ferry and bridges in the vicinity of McCarty.

A new ferry scow, 16 by 35 by 3 feet, was constructed of native whipsawed lumber, at a cost of \$778.95.

Improvements to the bridge over the north slough near McCarty included replacing the existing 30-foot span by a standard 60-foot pony truss span, reerecting the 30-foot span north of the new 60-foot span, and constructing 56 feet of pile trestle approach. The total cost of this work was \$1,027.97, exclusive of freight from Seattle.

A pile bridge, 204 feet in length, constructed over the middle of McCarty Slough, cost \$828.37.

Route 6A—Willow Creek-Tonsina Road (2 1/2 miles).—The greater part of this route was graded with a road grader during the year. Culverts were repaired and new ones built where necessary; ditches were cleaned out and a small amount of gravel surfacing placed. During May and June of this year two maintenance men, with a team, were employed in dragging the road, repairing culverts, etc. The cost of the year's work averaged \$228.27 per mile.

This route, which traverses naturally good soil, is now in good condition and should require little work in the near future outside that performed by a small maintenance crew.

Route 6B—Tonsina-Chitina Road (15 miles).—Ordinary maintenance work was done on this route, but the chief expenditure was for improvement, which is expensive, because of the rugged

and difficult country through which the road runs. The long grade leading to the Tonsina River Valley was widened and surfaced, involving the construction of 1,760 linear feet of corduroy, costing 78 cents per foot, and the removal of 1,400 cubic yards of solid rock, which was made use of in surfacing 5,570 linear feet of the road. Approximately 3,500 cubic yards of gravel surfacing was placed, at an average cost of \$1.10 per cubic yard. In addition, ditches were cleaned, slides removed, culverts repaired, driftwood removed from the Tonsina River Bridge, and 1½ miles of road graded.

The dike constructed last year above the Tonsina Bridge (see annual report for 1916, p. 11) was partly destroyed by high water during the summer of 1916. It was rebuilt and strengthened this spring, and has successfully withstood the high water and accomplished its purpose.

Chisana Trail.—This is a winter trail from McCarty, on the Copper River & Northwestern Railroad, to the Chisana mining district. The best route for travel varies from year to year, and the trail is marked each winter with temporary stakes. The staking last fall was done under the supervision of local parties, \$500 being expended by the board and \$500 contributed by interested persons in the vicinity.

SOUTHWESTERN DISTRICT.

(Mr. ANTON EIDE, Superintendent.)

Route 10—Seward-Kenai Lake Road (14 miles).—The work of improvement on this route begun in 1915 by the Territorial road commissioner was continued by the board during the past year. The first 3 miles were improved, and extensive new construction was undertaken between mileposts 3 and 7. A total of 4.4 miles was graded with the road grader, 0.8 mile graveled, 520 feet of bridges redecked, and 7 new culverts constructed. The work was greatly hampered by very heavy rains and high water. Unit costs of various classes of work were:

Clearing and grubbing (heavy), per acre.....	\$230.00
Grading, per linear foot.....	.12
Redecking bridges, per linear foot.....	2.50
Graveling, per linear foot.....	.19

Maintenance work during the spring, embracing the repair of washouts, surfacing soft spots, and dragging, cost \$1,339.60.

The reconstruction of the bridge over Resurrection River (annual report, 1916, p. 11) was completed during July. The three 75-foot spans are of Douglas fir and the remainder of the bridge of native spruce timber. An itemized statement of the field cost is given below: freight on material obtained in Seattle is not included.

Material:	
Piling.....	\$237.50
Fir lumber.....	633.50
Native lumber.....	679.50
Rods, bolts, etc.....	200.00
Drift bolts and spikes.....	105.50
Dynamite, fuse, and caps.....	33.00
Tools.....	10.00
Total.....	2,338.50

Driving piles:		
Rent of driver with fuel and oil.....	\$160.00	
Labor.....	753.67	\$913.67
Planking and capping piers and lowering approaches.....		330.00
Getting out stringers and caps for approaches.....		217.00
Framing and raising trusses.....		340.00
Placing stringers and decking.....		325.20
Placing hand and guard rails.....		107.40
Cutting and blasting out old trestle.....		50.00
Total.....		4,722.18

A 72-foot Howe truss span of native spruce was constructed over a stream near the Ole Marrin ranch. The detailed cost was:

Getting out timber for crib abutments and lower chord.....	852.50
Constructing abutments.....	23.00
9,500 feet b. m. native lumber, at \$22 per M.....	209.00
Rods, bolts, and spikes.....	47.83
Framing and raising trusses.....	55.00
Placing decking and handrails.....	30.00
Total.....	417.33

Route 12—Mile 34 A. N. R. R.—Hope Road (31 miles road, 9 miles sled road).—The usual maintenance work on the wagon-road section included the widening of the road, cleaning ditches, redecking 420 linear feet of bridges at a cost of \$2.75 per foot, and general repairs. On the sled-road section a small amount of work was done, principally in removing windfalls. The total cost was \$4,526.35, of which \$514 was expended in repairing and protecting the road during the spring.

Route 19—Kern Creek—Knik Trail (86 miles).—During the summer of 1916, forest fires and landslides caused by excessive rains destroyed a large part of this trail along Turnagain Arm. The work of repairing this damage covered about 20 miles, and included removing slides, replacing and repairing bridges and culverts, clearing windfalls and rebuilding cribbing. During the winter two men were employed on the Turnagain Arm section of the trail, repairing it, and keeping it clear of slides and dangerous accumulations of ice.

Upon completion of the new Government railroad from Seward to Matanuska the larger part of this route can be abandoned, but until the gap between Kern Creek and Anchorage is closed winter traffic over it will be very heavy.

Route 20A—Knik—Susitna Trail (30 miles).

Route 20B—Susitna—Rainy Pass Trail (127 miles).

Two hundred and fifty dollars was expended on route 20A during the year, chiefly in clearing windfalls and bridging small streams which are difficult to cross during the spring and fall.

Route 20C—Rainy Pass—Tacotna Trail (130 miles).

Route 20D—Tacotna—Kaltay Trail (145 miles).

No work was done on these routes during the year.

Route 24—Mile 29 A. N. R. R.—Moose Pass Road (29.5 miles).—

The improvement of 14.5 miles of sled road to wagon road standards constituted the work of the year on this route. Grades were cut down, the road bed was widened and drained, culverts were con-

structed, and corduroy laid where necessary. The average cost of the work was \$592.64 per mile. The average unit costs were:

Clearing and grubbing, per acre.....	\$120.00
Ditching and grading, per linear foot.....	.07
Corduroy, per linear foot.....	.60

Route 32A—Tacotna-Flot Creek Trail (87 miles).—No work was done on this route during the year.

Route 35—Knik-Willow Creek Road (34 miles).—General repairs were made to the entire route during the year. A small amount of corduroy was laid, and a quantity of culvert timber was cut and hauled for future use on the section above timber line. One mile of new road was constructed to reduce a steep grade at mile 33.

A standard 60-foot pony truss bridge of native spruce was constructed over the Little Susitna River, replacing an old stringer bridge. The cost was as follows:

Material (steel and hardware, Seattle).....	\$408.00
Cutting and hewing timber.....	478.80
Hauling steel, etc., to bridge site.....	70.00
Constructing and filling timber abutments.....	75.00
Framing and raising trusses and placing decking.....	280.00

Total..... 1,312.13

The freight on steel and hardware from Seattle is not included in the above total.

Extensive improvement work on this road is now in progress from Wasilla, where it crosses the new Government railroad, in order that it may better serve the growing needs of the Willow Creek mining district.

Route 35A—Archangel extension (2 miles).—This route will connect mile 32 on the Knik-Willow Creek Road with the Archangel Creek Valley, where a number of lode mines are developing. The entire road will be above timber line, necessitating the transportation of all culvert material and wood for fuel from considerable distances, and thus increasing the cost. A total of \$1,003.50 was expended during the past year, and the work of completing the road is now in progress.

McDougall-Cache Creek Trail.—This trail leads from McDougall, on the Yentna River, to the Cache Creek placer mining district, a distance of approximately 30 miles, and was constructed by operators in the district. During September and October, 1916, a location for a wagon road following the same general route was made and a bridge 120 feet long was constructed over Cache Creek, at a total cost of \$1,329.15.

Travel to and from this district is dependent upon uncertain and slow, small boat service from Anchorage up the Susitna and Yentna Rivers. Upon the completion of the Government railroad a more suitable route will lead from some point on the railroad near Talkeetna overland to Cache Creek. A reconnaissance of this route is now being made, with a view to the probable construction of a sled road if a suitable location is found.

Palmer-Mile 26 survey.—During the late fall of 1916 a location survey was made for a road 8 miles in length from Palmer, on the Government railroad, to mile 26 on the Knik-Willow Creek Road.

to serve a considerable number of farmers who have taken up homesteads along the proposed route. The cost of the survey was \$96.20. Construction of the road is now under way.

YUKON DISTRICT.

(Mr. R. J. SOMMEERS, Superintendent.)

Route 4J—Richardson-Salchaket Road (30 miles).—Extensive improvement of that portion of the road between mileposts 312 and 330, except 1 mile, constituted the work of the year on this route. The road was straightened, widened to 30 feet, and graded with a road grader. A change in the location was made between mileposts 318 and 319, involving the construction of approximately a quarter of a mile of new road around a steep bluff. The old road at this point was located on the flat along the Tanana River, where it was subject to overflow during high water. Two other short relocations were also made, the road in each case being shifted from the flat to the hillside, where better soil and drainage could be obtained. Sixty-eight culverts were constructed at an average cost of \$29 each, and 560 linear feet of corduroy was laid at a cost of \$60 per foot. The average cost of all the work was \$1,955.95 per mile for the 17 miles improved.

Route 4K—Salchaket-Fairbanks Road (40 miles).—Eighteen and a half miles of this road, from mile 352 to mile 370, were reconstructed during the year. The road was widened, straightened, and graded with a road grader; fills were made across small swales, and 8,470 linear feet of drainage ditch constructed. Sixty-one culverts, two 36-foot pony truss bridges, and seven 16-foot stringer bridges were built, and 4,050 linear feet of corduroy laid.

Owing to the continuous cutting away of the road near mile 357, a relocation was made between mileposts 353 and 360. The new location is 0.5 mile longer than the old road, but it is on higher ground, with better soil conditions, and is well back from the river. This relocation also eliminated about 3 miles of narrow corduroy which is subject to overflow by the Tanana River during high water, and which could not be satisfactorily repaired except at great expense.

Average unit costs of the work were:

Clearing and grubbing to 30-foot width, per mile.....	\$280.20
Grading, including small fills, per mile.....	1,289.36
Drainage ditches, per foot.....	.15
Corduroy, per foot.....	.60
Culverts, each.....	20.00
Bridges, 16-foot, each.....	40.00
Bridges, 36-foot, each.....	200.00

Route 5—Ester-Fort Gibbon Sled Road (1½ miles).—The year's work on this route consisted of general repairs and maintenance. Slides, windfalls, and stumps were removed between the 12 and 49 mileposts and 4 bridges, ranging in length from 19 to 31 feet, were constructed, at an average cost of \$5 per foot, the high cost being due to the scarcity of suitable timber. Repairs to bridges near Hot Springs cost \$157. Seven bridges near Tanana, varying from 18 to 36 feet in length, were reconstructed with sawed lumber, at a cost of \$358.78.

Route 7A--Summit-Cleary Road (11 miles).

Route 7B--Fox-Olnes Road (13 miles).

Route 7C--Summit-Fairbanks Creek Road (11 miles).

Route 7E--Vault Creek Road (2 miles).

Route 7F--Vault Creek-Treasure Creek Road (1.5 miles).

Route 7H--Little Eldorado Creek Road (1.5 miles).

Route 7I--Gilmore-Summit Road (6 miles).

These routes were maintained by the Territorial road commissioner for the fourth judicial division, and no work was done on them by the board.

Route 7D--Ester Creek Road (13 miles).—The work of the year on this route consisted of the improvement of 2,900 feet of the road on mile 3, where it traverses a mattress of decayed vegetable matter, or peat, several feet deep, for a distance of over 0.5 mile. Two thousand feet of corduroy was laid and covered, at a cost of 85 cents per foot. Four bridges, with an aggregate length of 89 feet, were built, at a cost of \$239.

During the present year the improvement of the road is being continued as far as the Government experimental farm.

Route 7G--Fairbanks-Gilmore Road (13 miles).—The work done by the board on this route was confined to the construction of a pile bridge over Noyes slough to replace a 70-foot Howe truss span, which collapsed. A part of the material from the old bridge was used in the new construction, and other material was furnished by the Territorial road commissioner, who also performed general maintenance work on the road.

Route 7J--Fairbanks-Chena Hot Springs Trail (64 miles).

Route 7K--Olnes-Livengood Sled Road (54 miles).

No work was done on these routes during the year.

Route 9--Rampart-Eureka Road (6.5 miles road, 21.5 miles sled road).—General maintenance work on this route was carried on during July and August, and included redecking 19 culverts and 3 bridges, the reconstruction of 2 bridges, aggregating 54 feet in length, and widening and repairing the road between the 6 and 10 mileposts.

Route 11A--Eagle-O'Brien Creek Road (17 miles).

Route 11B--O'Brien Creek-Fortymile Sled Road (30 miles).

Work on these routes during the year consisted of general repairs and maintenance. On the wagon-road section, culverts were rebuilt, bridges repaired, and one new bridge constructed, ditches cleaned and extended, and a small amount of gravel surfacing placed. Maintenance work on the sled-road section included the removal of rock slides, widening the road, and ditching some sections.

Route 11C--Steel Creek-Jack Wade Road (2.5 miles).

Route 11D--Canyon Creek-Walkers Fork Sled Road (10 miles).

No work was done on these routes during the year.

Route 11E--Eagle-Seventy Mile Sled Road (20 miles).—A total of \$502 was expended on this route, chiefly in constructing three bridges, repairing culverts and bridges, and ditching.

Route 15--Circle-Miller House Road (49 miles).—Annual maintenance work on 34 miles of this route was performed during the summer and included cleaning and constructing ditches, laying 1 mile of light corduroy, repairing damage caused by washouts, and re-

decking and repairing culverts and bridges. The average cost of the work was \$137 per mile for the 34 miles on which work was done.

Route 16—Chatanika-Miller House Sled Road (81 miles).—The year's work on this route consisted chiefly in repairing bridges and removing slides. Six bridges were repaired, and one new bridge 24 feet long was constructed. The total cost of the work was \$500.

Route 17—Fort Gibbon-Kaltag Trail (257 miles).—The temporary staking of this trail for the guidance of winter travel was done by contract, at a cost of \$300.

Route 17A—Lewis Landing-Dishkaket Trail (108 miles).

Route 17B—Nulato Dishkaket Trail (90 miles).

No work was done on these routes during the year.

Route 22—Hot Springs-Sullivan Creek Road (9 miles wagon road, 6 miles trail).—The work of the year on this route was confined to the wagon-road section. Bridges, culverts, and corduroy were repaired, ditches were cleaned, and a small amount of new ditching was done. Grading was done on sections between Kemperville and Sullivan Creek where the road had settled and a grader could be used to advantage. The average cost of the work was \$127 per mile.

Route 23A—Chatanika-Beaver Trail (120 miles).

Route 23B—Beaver-Chandler Sled Road (25 miles).

Route 29—Fort Gibbon-Koyukuk Trail (100 miles).

No work was undertaken on these routes during the year.

Route 30—Hot Springs Landing-Eureka Creek Road (32 miles).—The year's work on this route was confined to the section between the Landing and Hot Springs, and comprised laying 180 feet of corduroy, cleaning ditches, filling ruts, and repairing several small bridges and culverts.

Route 31—Salchaket-Caribou Creek Sled Road (46 miles).—No work was done on this route during the year.

Route 22B—Iditarod-Flat Creek Road (8 miles).

Route 33A—Otter Creek Towpath (22 miles).

Route 33B—Summit-Otter Creek Road (6 miles).

The work of the year on these routes was devoted to maintenance on the main Iditarod-Flat Creek Road, with some improvements on the first 6 miles of that road. Bridges and culverts were repaired, 4,910 linear feet of corduroy laid, and 9,481 feet of road graveled. The total expenditure was \$1,500.

Route 38—Ruby-Long Creek Road (19.5 miles road, 10.5 miles sled road).—The year's work on this route embraced repairs to the main street of Ruby, the maintenance and improvement of the 6 miles of wagon road previously constructed, and the improvement to wagon road standards of approximately 13.5 miles of sled road.

The extension of the road which forms the main street of Ruby (not an incorporated town) was reconstructed for a distance of 1,300 feet, or practically its entire length. The steep approaches at either end of the street were graded down and ditched and the entire street was surfaced with rock. Six culverts were constructed, the material for five of which was furnished by adjacent property owners. The total cost of this work was \$1,501.00.

From Ruby to milepost 6 extensive maintenance and improvement work was done. Sidhill cuts were widened, holes filled, corduroy

repaired and renewed, and 240 linear feet of road surfaced with rock. The average cost of the work was \$166.84 per mile.

From the 6 milepost to a point 0.5 mile beyond the 19 milepost, a wagon road was completed, largely following the old sled road. The work was accomplished under very trying weather conditions, the rainfall throughout the summer being without precedent in the history of Ruby. This heavy rainfall greatly increased the difficulty of overcoming the miles of glacial muck formation traversed, and was chiefly responsible for the unusually high cost of the work.

In the construction of the new road 183 culverts were constructed, 24,506 linear feet of corduroy laid, 46,603 linear feet of road graded and ditched, and two bridges having a total length of 298 feet built. The road varies in width from 16 to 30 feet, according to the formation of the ground. All of the culverts, with the exception of 12, were constructed of poles secured on the ground. Pole or brush corduroy was used, depending upon the timber available where required.

Average costs of the work were:

Clearing, grubbing, and grading, per linear foot.....	\$0.78
Corduroy, per linear foot.....	.90
Culverts, each.....	27.88
Bridges, per linear foot.....	1.81

A permanent cache or warehouse 16 by 48 by 10 feet, with a corrugated iron gable roof, was constructed near the 19 milepost for the storage of supplies, equipment, and forage, no building being available for the purpose along the entire length of the road. The cost was \$484.61.

Maintenance work during the past spring on the entire 19.5 miles of wagon road comprised thawing ice out of culverts, opening channels under bridges, and repairing damage done to the new work during the break-up. The soil in this region cuts very rapidly when the moss is removed, and it is subjected to the action of running water, and a large part of the corduroy was seriously threatened by cutting ditches. Where this was found to be the case, the inner sides of the ditches were thoroughly revetted with moss and sod covered with earth. It is thought that in the future any damage from this source can be largely eliminated by leaving a wider berm—at least 5 feet—between the ends of the corduroy and the inner edges of the ditches, and this will be done. The cost of this spring work can not be given, as part of the expenditures had not been reported at the close of the period of this report.

Prior to last year the prevailing summer freight rate from Ruby to Long Creek was 7 cents a pound, the freight being hauled over ridges which in wet weather became almost impassable, horses often sinking to their bellies in the mud. At the present time light motor trucks are delivering freight in ton lots at the 20 milepost under favorable weather conditions, for 1½ to 1½ cents a pound, and the rate to Long City when the road is completed will probably not exceed 2 to 2½ cents per pound, the saving resulting directly from the road thus amounting to at least \$70 per ton.

The work of completing the road to Long Creek is now in progress. A further extension from Long Creek to Poorman, a distance of approximately 24 miles, is urgently needed, but its construction will be expensive and can not be undertaken by the board with the funds now available or in prospect.

Route 32B—Long Creek-Cripple Trail (60 miles).—The work of the year on this route embraced the construction of a 25-foot bridge over Ophir Creek, repairing the bridge over Monument Creek, and filling in washouts between the Solatna River and Poorman. The total cost was \$196.

Route 46—Kantishna Trail (75.75 miles).—This is a trail constructed during the past winter from the Thirty-mile Roadhouse, 26 miles from Nenana on the proposed route of the new Government railroad, to the Kantishna mining district. From the initial point to the Toklat River, 26 miles, an old Indian or prospectors' trail was followed. This trail was widened where necessary, and tripods were placed at intervals of 200 feet in open country for the guidance of travel.

From the Toklat River to Diamond City, 37.75 miles, the work was entirely new construction. The trail was cleared for a width of 8 feet through all timbered sections, trees being cut as close to the ground as the depth of snow permitted, and other obstacles to traffic removed. All open country was staked with tripods, and 10 permanent bridges, aggregating 315 feet in length, were constructed.

Between Diamond City and Glacier, the terminus of the route (12 miles), the location follows an old trail, which was widened and straightened where most necessary.

The work was done during February and March of this year under the efficient supervision of Mr. Thomas Lloyd. The total cost was \$4,571.63.

Route 47—Coldfoot-Wiseman Sled Road (11.25 miles).—This is a winter sled road from Coldfoot, the ordinary head of navigation on the Koyukuk River for light-draft boats, to Wiseman, which is the supply point for the Koyukuk mining district. Freight is landed at Coldfoot during the summer and a small amount is transported to Wiseman on small gasoline or poling boats or on horse scows. The greater part of the freight, however, is stored at Coldfoot and hauled to Wiseman and the adjacent producing creeks during the winter.

Construction work was carried on during September and comprised clearing and grubbing over the entire distance, and the construction of 2 foot bridges, with a total length of 445 feet, and 18 wagon bridges, aggregating 384 feet in length.

The total cost of the work was \$5,000, or \$444.44 per mile.

Eagle-Circle Mail Trail.—A total of \$206 was expended on this trail during the year. The work consisted of grading approaches to streams and widening and clearing the trail between mileposts 6 and 10 and between mileposts 15 and 22 north of Eagle.

Bridge over Chena Slough, Fairbanks.—The project for this bridge was described in the annual report for 1916 (p. 15). The superstructure is a 300-foot steel span, with Petit trusses, designed for a uniform live load of 50 pounds per square foot or for two 8-ton motor trucks passing. The abutments are of concrete, each consisting of two columns with stepped reinforced footings, supported on piles. The columns are connected at the top by a reinforced concrete curtain wall. The north approach is a framed trestle 150 feet in length; the south approach, constructed by the city of Fairbanks, is combined earth fill and trestle.

Excavation for the abutments was commenced August 9, 1916, being delayed until that date by the difficulty of securing proper lumber

for the cofferdams, which were constructed of Wakefield sheet piling. Work on the south abutment, which was constructed first, was greatly hampered by a mass of brush and refuse extending to a depth of 15 feet below mean water level, through which the cofferdam and excavation had to be carried. As a consequence of the delays, cold weather set in before the north abutment could be completed, making it necessary to heat the concrete materials and to keep the abutment covered and heated until the concrete had thoroughly set.

The structural steel for the bridge reached Fairbanks on the last boat to arrive there during the open season of 1916, but seven eye-bars were found to have been so badly damaged as to make their use inadvisable. Duplicate bars were ordered immediately, shipped by express to Seattle and thence by freight to Chitina, from which place they were hauled on sleds to Fairbanks, arriving only two days before they were needed in the erection.

Pile falsework was driven, braced, and capped before the freeze up. The usual falsework employed in the interior of Alaska is merely a trestle supported on the ice, but in this case the weight of the bridge and the fact that several sewers discharging hot water have their outlets near the bridge site made the use of piles advisable.

A wooden gantry traveler for erecting the trusses was framed and erected during the latter part of February of this year. The cost of the traveler was considerably increased by the inability of local lumber dealers to furnish timbers of requisite size, which necessitated the use of many built-up members.

The erection of the trusses, starting at the north end, was begun March 1. No unusual difficulties were experienced, although the greater part of the crew had had no previous experience in such work. The bridge was swung March 22 and opened to vehicular traffic on April 19.

The total net cost of the bridge was \$51,489.19. This was much greater than the first estimate, the increase being due to various causes, some of which, such as the necessity for replacing damaged I bars, the difficulty of excavating for the south abutment, etc., have been mentioned above. It was originally intended to construct the bridge during the winter of 1915-16, but the destruction by fire of the almost completed plans in July, 1915, caused the postponement of the project for a year, during which time prices underwent a considerable advance, making the cost of all structural materials greater than had been anticipated.

A detailed report of the cost has not yet been received; the general distribution was as follows:

Material	\$23,190.14
Freight	7,689.88
Equipment	839.67
Engineering, superintendence, and inspection	2,941.81
Labor	15,395.22
Hire and care of animals	1,250.03
Fuel and power	1,032.31
Miscellaneous	662.21
Total	53,001.27
Received from sales	1,512.08
Total net cost	51,489.19

NOME DISTRICT.

(MR. DANIEL A. JONES, Superintendent.)

Route S—Nome-Council Road (approximately 82 miles; 57 constructed).—Maintenance work on the Nome-Fort Davis section included blasting the ice under bridges in the spring and resurfacing 3,300 feet of road with gravel. The Rocker Creek Bridge was repaired by constructing two new crib supports and replacing old stringers.

No expenditure was made on the Fort Davis-Cape Nome section, which, as noted in previous reports, was very badly damaged by the storm of 1913. The Territorial road commission is now engaged upon the reconstruction of this section.

Work on the Cape Nome section, which was reconstructed in 1915 by the Territorial road commission, consisted of removing slides, cleaning ditches, and constructing 1,575 feet of approaches to the new road, at a cost of \$2,826.99.

General maintenance and the construction of 6,045 feet of gravel-surfaced corduroy constituted the year's work on the Solomon-East Fork section. The total expenditure was \$5,041.23.

Maintenance of the Fox River-Council section, which is entirely corduroy, cost \$45.10 per mile.

The maintenance and operation of the Safety Ferry cost \$885.80, of which \$385.80 was expended for new cable and minor repairs to the scow.

The cost of maintaining and operating the Bonanza Ferry was \$537.70; of this amount, \$162.70 was for new cable and repairs to the ferry scow.

Route 13A—Nome-Bessie Road (3.3 miles).—General maintenance on this route, including resurfacing 7,335 linear feet with gravel, cleaning ditches, and opening channels through the ice under bridges during the spring, cost \$696.97 per mile. In addition, 400 cubic yards of material in the fill over Dry Creek, washed out by high water, was replaced at a cost of 51 cents per cubic yard. The maintenance cost for the year was greater than usual, largely because of the heavy rains during the summer of 1916.

During June of this year 1,200 tons of freight were transported over this road, and the daily average freight movement throughout the year was approximately 30 tons.

Route 13B—Bessie-Banner Road (3.5 miles).—The work of the year on this route was confined to surfacing 2.3 miles with gravel, at a cost of \$3,797.07.

Route 13C—Bessie-Little Creek Road (1.25 miles).

Route 13D—Bessie-Dry Creek Road (1.25 miles).

No work was done on these routes during the year.

Route 13E—Dry Creek-Newton Road (0.33 mile).—Repairs to culverts on this road cost \$27.

Route 13F—Nome-Osborne Road (4 miles).—General maintenance work on this route cost \$45.18 per mile.

Route 13G—Grass Gulch Road (1.75 miles).—No work was undertaken on this route during the year.

Route 13H—Center Creek Road (1.37 miles).—The cost of resurfacing 625 feet of this road with gravel was \$386.84.

Route 13I—Nome River Road (5 miles).—The protection of this road during the spring break-up cost \$13.05 per mile. No other work was done during the year.

Route 13J—Wonder-Flat Creek Road (2 miles).—General repairs and maintenance on this route cost \$178.05 per mile.

Route 13K—Bessie-Buster Road (5 miles).—The work of the year on this route consisted of general maintenance and surfacing 1 mile with gravel 12 inches thick, at a cost of \$0.36 per foot.

Route 18—Kaltag-Solomon Trail (2.48 miles).—On the Topkek-Unalaklik section of this trail 2,818 permanent stakes, each 3 inches in diameter at the butt and 9 feet long, were cut and set. In addition the permanent stakes on 79 miles were repaired and reset where necessary and 4½ miles of new trail cleared through timber. The total cost was \$961.85.

Route 21—Unalaklik-St. Michael Trail (approximately 65 miles).—The temporary staking of 18 miles on the ice between St. Michael and Klikitarick cost \$16. The remainder of the work embraced restaking 27 miles with permanent stakes and the construction of a light tram over the Golsovia River, at a total cost of \$381.40.

Route 25A—Cripple River Road (13.5 miles, total A and B).

Route 25B—Penny River Road.

Route 25C—Nome-Wireless Road (0.25 mile).

No work was done on these routes during the year.

Route 25D—Mouth of Center Creek Road (2 miles).—General maintenance and repairs on this road cost \$87.66 per mile.

Route 25E—Submarine Paystreak Road (2.5 miles).—As originally built this road extended from near the mouth of Snake River for a distance of approximately 1 mile along the submarine paystreak. A total of only \$620.84 has been expended on it since its location in 1907, and no work has been done on it for several years. At the present time a new road, following a better location, is being constructed from the Snake River bridge to the submarine paystreak. This road will be designated by the same name and route number as the old road, which has been abandoned.

The work of the year consisted chiefly in the construction of fills leading to the Snake River bridge approaches, containing 1,460 cubic yards of material. A branch road 1,200 feet in length was also constructed from the west approach to a point near the mouth of Snake River. The total cost of all work was \$1,765.07.

Route 25F—Anvil-Glacier Road (3 miles).—General repairs to this route included cleaning ditches and hauling 480 cubic yards of gravel surfacing. The average cost was \$395.85 per mile.

Route 25G—Snake River Extension Road (3 miles).—The work of the year on this route embraced general repairs and the surfacing of 2,380 linear feet of road with gravel. A suspension foot bridge over Snake River at the mouth of Boulder Creek, having a span of 130 feet, and two 18-foot bridges over Sledge Creek were constructed at a cost of \$294.73. The material used was largely obtained from the old Snake River bridge.

Route 25H—Otter Creek Road (1.25 miles).—No work was done on this route during the year.

Route 25—Sinrock Ferry.—The total cost of maintaining and operating this ferry was \$321.90, of which \$71.90 was expended for minor repairs to the scow.

Route 26—Candle-Candle Creek Road (5 miles).—The year's work on this route consisted of cutting and tying 3,382 fifty-pound bundles of willows, which were hauled and distributed along the road during the winter for use in constructing corduroy this year.

Route 27—Deering-Inmachuck Road (25 miles).—General maintenance covering the whole route, together with some new construction on the left bank of the Inmachuck River, eliminating seven crossings of the river, constituted the work of the past year. The center pier of the bridge over the lagoon near Deering had been undermined and was removed and replaced by piles. Eight new culverts were constructed, 0.5 mile of road graded and ditched, and 2,700 feet of corduroy laid and graveled.

Route 28—Dahl Creek-Candle Trail (140 miles).—The repair and replacement, where necessary, of permanent stakes throughout the entire length of the route cost \$1 per mile.

Route 37—Topkok-Candle Trail (141 miles).—Twenty-six miles of this route were restaked with permanent stakes and 3 miles cleared through timber, at a total cost of \$460.

Route 42—St. Michael-Kotlik Trail (approximately 70 miles).—Those portions of this route not on the ice were marked with permanent stakes, 40 to the mile. The work was done by contract and cost \$350.

Route 49—Davidsons Landing-Taylor Creek Road (40 miles; 24 constructed).—This road extends from the head of navigation on Marys River to Taylor Creek, in the Kongarok mining district. Only light construction work was undertaken, covering the first 24 miles of the route, and consisting of clearing out the road, eliminating creek crossings by grading, and laying gravel-surfaced willow corduroy over soft spots. Since the work was done teams have been able to haul loose loads 1,500 pounds greater than the average before the improvement was made.

Marshall Road.—This road when completed will extend from a tributary slough of the Yukon to the placer mines of the Marshall district and will be about 3 miles in length. The work done during the past year consisted of cutting and hauling poles for approximately 2 miles of corduroy. Only a part of the accounts covering this work have been received, and the total cost can not be reported.

This project has been taken over and will be completed this year by the Territorial road commission.

Flagging trails.—Approximately 550 miles of trails, in addition to those permanently marked, were temporarily staked or flagged for the guidance and safety of winter travel. The total cost, including cost of inspection trips by the superintendent of the district, was \$4,225.30.

Snake River Bridge.—The construction of this bridge (see annual report 1916, p. 18) was begun June 17 and completed August 19, 1916. Nearly all of the material used, including piles, lumber, and steel, had to be obtained and shipped from Seattle, largely increasing the cost. The two 100-foot spans are of the combination Pratt truss type. All truss timbers, stringers, and planks are Douglas fir.

The total cost, including the expenditure reported last year, was \$16,949.93, distributed as follows:

Material.....	\$5,046.77
Equipment.....	400.23
Freight on material and equipment.....	3,441.03
Engineering.....	600.00
Labor.....	6,188.95
Hire of animals.....	458.87
Miscellaneous (fuel, telegraph, etc.).....	220.22
Total.....	16,949.93

Of the above amount \$526.50 was expended during the winter in protecting the piers by cutting away the ice and placing riprap around them.

APPENDIX B

LAWS RELATING TO THE CONSTRUCTION OF ROADS IN ALASKA

May 26, 1900. An Act making appropriation for the support of the Regular and Volunteer Army for the fiscal year ending June thirtieth, nineteen hundred and one. (31 Stats., 214).

* * * * *

Transportation of the Army and its supplies; thirty million dollars; Provided, That one hundred thousand dollars of this sum may be used in Alaska, and shall be immediately available, for the construction of military roads and bridges in Alaska.

June 30, 1902. An Act making appropriation for the support of the Army for the fiscal year ending June thirtieth, nineteen hundred and three. (32 Stats., 507).

* * * * *

Transportation of the Army and its supplies; twenty-five million dollars; Provided, That the balance of the appropriation of one hundred thousand dollars made by the Act of May twenty-sixth, nineteen hundred, for construction of military roads and bridges in Alaska remaining unexpended on June thirtieth, nineteen hundred and one, is hereby reappropriated, and made available for such construction; Provided further, That the number of draft animals purchased from this appropriation, added to those now on hand, shall be limited to such numbers as are actually required for the service.

April 23, 1904. An Act making appropriation for the support of the Army for the fiscal year ending June 30, 1905, and for other purposes. (33 Stats. at Large, 271).

* * * * *

For survey and estimate of cost of a wagon road from Valdez to Port [sic] Egbert on the Yukon River, to be made under the direction of the Secretary of War, twenty-five thousand dollars (\$25,000.00) to be immediately available; said survey and estimate, herein provided, shall be submitted to Congress at the earliest practicable day.

For surveying and locating a military trail, under the direction of the Secretary of War, by the shortest and most practicable route, between the Yukon River and Coldfoot, on the Koyukuk River, twenty-five hundred dollars (\$2,500.00) to be immediately available, and a report and estimate upon said trail to be submitted to Congress at the earliest practicable day.

April 27, 1904. An Act to authorize the appointment of road overseers and to create road districts in the District of Alaska and for other purposes. (33 Stats., 391).

* * * * *

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That it shall be the duty of the commissioner in each precinct in the District of Alaska, on the first Monday in the month of April in each year, to appoint a road overseer for the precinct in which he resides, and create a road district in the inhabited part of said precinct, which said district shall not include incorporated cities and towns.

To fill all vacancies in the office of road overseer in his precinct.
To cause a record to be made defining the boundaries of said road district.

Term of Office and Qualifications of Road Overseers.

All road overseers shall hold office for one year and until their successors are appointed and qualified.

Every person appointed to the office of road overseer of any road district shall reside in the road district to which he has been appointed, and shall, within thirty days after he shall have been notified of his appointment, take and subscribe to an oath of office obligating himself to the faithful performance of the duties of his office, and shall forthwith cause such oath to be filed in the office of the commissioner of his precinct, and in case any such road overseer shall become non-resident of his road district, his office shall at once become vacant.

Each road overseer shall, before entering upon the duties of his office, execute a bond to the United States in a sum not less than double the amount of money which will probably come into his hands at any time during his term of office, with two or more sureties, the amount and sufficiency of the bond to be approved by the commissioner of the precinct, conditioned for the faithful discharge of the duties of his office, which bond shall be by him forthwith filed in the office of the commissioner and ex officio recorder. The approval of such bond shall be indorsed thereon by the commissioner.

Duties of Road Overseer.

The duties of road overseer shall be such as may be prescribed by law.

Each road overseer shall keep an accurate account of all money received by virtue of his office and the manner in which the same has been disbursed, and to whom, and shall, on the last Saturday of March in each year, exhibit such account, together with his vouchers, to the commissioner for adjustment and settlement. Such account shall be in writing, verified by affidavit of the overseer that the same is in all respects a full and true account of all money received by him during the full term for which he should make settlement and the amounts expended and the manner in which they were expended.

If any person appointed to the office of road overseer, unless unable from disease or other infirmity to discharge the duties of such

office, shall refuse or neglect to serve therein, he shall be liable to a fine of twenty-five dollars; but no person so appointed who shall have served for a term next preceding such appointment shall be liable to such fine for refusing to serve if he shall have given notice in writing of refusal to the commissioner within twenty days after having been notified of his appointment.

Every road overseer who shall, after the expiration of his term of office, neglect or refuse to deliver on demand to his successor in office, after such successor shall have been duly qualified according to law, all moneys, records, books, papers, or other property appertaining to such office shall be liable to a fine of not less than fifty nor more than five hundred dollars.

Road overseers of the different precincts are authorized, and it is made their duty, to warn out all male persons between eighteen and fifty years of age who have resided thirty days in the District of Alaska, who are capable of performing labor on roads or trails, and who are not a precinct charge, to perform two days' work of eight hours each in locating, constructing, or repairing public roads or trails, under the direction of the road overseer within whose precinct they may respectively reside, or furnish a substitute to do the same, or pay the sum of four dollars per day for two days' labor, and said road overseer shall receipt for the same and shall expend it in location, construction, or repairs on the public roads and trails within his precinct; and any moneys so received and not expended shall be paid over to his successor in office, who shall expend the same as above provided.

The overseer of roads and trails in each precinct shall give notice to persons residing in his precinct liable to or charged with a road or trail tax of the time and place and the kind of work expected to be performed on the road or trail, and may direct what implements such persons shall bring with which to perform such work.

Whenever it shall happen, in consequence of sickness or absence from home, or any other cause, that the two days' work aforesaid shall not be performed within the time specified in this Act, the overseer shall be authorized to require the performance of such work at any time prior to the first day of October then next ensuing; and in case any person shall neglect or refuse to do the two days' work, or furnish a substitute, or pay in money the price of two day's labor, as provided in this Act, he shall be deemed guilty of a misdemeanor and shall be fined in the sum of ten dollars for each day refusing so to work upon conviction before any justice of the peace of the precinct.

If any person shall appear at the proper time and place as directed by the overseer and neglect or refuse to do a reasonable day's work according to his ability, he shall be liable the same as if he had neglected or refused to appear, or furnish a substitute, or pay the sum of money as provided herein.

Under the direction of the overseer, and at his discretion, the above road tax may be performed by one day's work, together with an able-bodied man, a two-horse team with wagon, or a dog team consisting of not less than five dogs and a sleigh, or a reindeer team of not less than two reindeer and sleigh or cart.

It shall be the duty of each road overseer to receipt to each person who performs labor on the public roads and trails of his precinct under the provisions of this Act for the amount of labor so performed, and no person shall be compelled to pay road tax except in one precinct in the District of Alaska during one calendar year.

Each road overseer shall, on or before the first day of April in each year, report to the commissioner of the precinct the names of all persons subject to the two days' road tax for the preceding year, the names of those who have worked out said tax, the names of those who have paid the said tax money, and the names of those delinquent, and also all moneys received by him from all sources, and how expended, and the account of said road overseer of the work performed by himself, which report shall be approved by said commissioner before any final settlement shall be made with such road overseer.

Each and every road overseer who shall neglect or refuse to perform the several duties enjoined upon him by this Act, or who shall, under any pretense whatsoever, give or sign a receipt or certificate for labor performed or money paid, unless the labor shall have been performed or money paid prior to the signing or giving of such receipts or certificates, shall forfeit for every such offense not less than five nor more than fifty dollars, to be recovered by an action before any justice of the peace within the precinct where such overseer may reside, and it is hereby made the duty of every United States attorney or assistant to prosecute all offenses against the provisions of this Act not otherwise provided for.

Per Diem.

Road overseers shall be allowed four dollars per day for all services required by this Act and actually performed in their respective precincts, to be retained out of money paid said road overseers from persons paying money or fines in lieu of two days' labor, upon the certified statement of the overseers, approved by the commissioner of the precinct; Provided, That no overseer shall receive pay for more than ten days in any one year, and not until he has made the return as provided in the preceding section, in duplicate, one copy to be retained by the commissioner and one copy filed with the clerk of the district court in the division in which the said precinct is situated.

Any oath required to be taken by said overseer, acknowledgment of bond, or the filing or recording of any paper or plat authorized by this Act shall be free of cost to said overseer.

Upon application of road overseers, it shall be the duty of the clerk of the district court to furnish copies of this Act and blank forms of notices warning persons to perform road work, receipts for road work, bond, and oath, and for overseer's report to commissioner, the expense of which shall be paid out of the fund for paying the incidental expenses of the court.

The Attorney General of the United States is hereby directed to furnish clerks of the district courts in the different judicial divisions of Alaska a sufficient number of copies of this Act and other road and trail laws that may now be upon the statutes relating to roads and trails in the District of Alaska for use of road overseers in each judicial division.

Repealed by Act December 16, 1930

January 27, 1905. An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the district of Alaska, and for other purposes. (33 Stats., 616).

* * * * *

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That all moneys derived from and collected for liquor licenses, occupation, or trade licenses outside of the incorporated towns in the district of Alaska shall be deposited in the Treasury Department of the United States, there to remain as a separate and distinct fund, to be known as the "Alaska fund" and to be wholly devoted to the purposes hereinafter stated in the District of Alaska. One-fourth of said fund, or so much thereof as may be necessary, shall be devoted to the establishment and maintenance of public schools in said district; five per centum of said fund shall be devoted to the care and maintenance of insane persons in said district, or so much of said five per centum as may be needed; and all the residue of said fund shall be devoted to the construction and maintenance of wagon roads, bridges, and trails in said district.

SEC. 2. That there shall be a board of road commissioners in said district, to be composed of an engineer officer of the United States Army to be detailed and appointed by the Secretary of War, and two other officers of that part of the Army stationed in said district and to be designated by the Secretary of War. The said engineer officer shall, during the term of his said detail and appointment, abide in said district. The said board shall have the power, and it shall be their duty, upon their own motion or upon petition, to locate, lay out, construct, and maintain wagon roads and pack trails from any point on the navigable waters of said district to any town, mining or other industrial camp or settlement, or between any such town, camps or settlements, therein, if in their judgment such roads or trails are needed and will be of permanent value for the development of the district; but no such road or trail shall be constructed to any town, camp, or settlement which is wholly transitory or of no substantial value or importance for mining, trade, agricultural, or manufacturing purposes. The said board shall prepare maps, plans, and specifications of every road or trail they may locate and lay out, and whenever more than five thousand dollars in the aggregate shall have to be expended on the construction of any road or trail, contract for the work shall be let by them to the lowest responsible bidder upon sealed bid, after due notice, under rules and regulations to be prescribed by the Secretary of War. The board may reject any bid if they deem the same unreasonably high or if they find that there is a combination among bidders. In case no responsible and reasonable bid can be secured, then the work may be carried on with material and men procured and hired by the board. The engineer officer of the board shall in all cases supervise the work of construction and see that the same is properly performed. As soon as any road or trail laid out by the board has been constructed and completed they shall examine the same and make a full and detailed report of the work done on the same to the Secretary of War, and in such report they shall state whether the road or trail has been completed conformable to the maps, plans, and specifications of the same. It shall be the duty of said board, as far

as practicable, to keep in proper repair all roads and trails, constructed under their supervision, and the same rules as to the manner in which the work of repair shall be done, whether by contract or otherwise, shall govern as in the case of the original construction of the road or trail. The cost and expenses of laying out, constructing, and repairing such roads and trails shall be paid by the Secretary of the Treasury out of the road and trail portion of said "Alaska fund" upon vouchers approved and certified by said board. The Secretary of the Treasury shall, at the end of each month, send by mail to each of the members of said board a statement of the amount available of said "Alaska fund" for the construction and repair of roads and trails, and no greater liability for construction or repair shall at any time be incurred by said board than the money available therefore at that time in said fund. The members of said board shall, in addition to their salaries, be entitled to receive their actual traveling expenses paid or incurred by them in the performance of their duties as members of the board.

SEC. 3. That the governor of the District of Alaska shall be ex officio superintendent of public instruction in said district, and as such shall have supervision and direction of the public schools in said district and shall prescribe rules and regulations for the examination and qualification of teachers, and shall make an annual report of the condition of the schools in the district to the Secretary of the Interior.

SEC. 4. That the common council of the incorporated towns in said district shall have the power, and it shall be their duty, in their respective towns to establish school districts, to provide the same with suitable schoolhouses, and to maintain public schools therein and to provide the necessary funds for the schools; but such schools when established shall be under the supervision and control of a school board of three members, consisting of a director, a treasurer, and a clerk, to be elected annually by the vote of all adults who are citizens of the United States or who have declared their intention to become such and who are residents of the school district. The members of said board first elected shall hold their offices for the term of two, and three years, respectively, and until their successors are elected and qualified, and one member of such board shall be elected each year thereafter and shall hold his office for a period of three years until his successor is elected and qualified; and they shall each, before entering upon the duties of their office, take an oath in writing to honestly and faithfully discharge the duties of their trust. In case a vacancy in the membership of said board occurs from death, resignation, removal, or other cause, such vacancy may be filled by a special election, upon ten days' notice, called by the remaining members of the board upon the petition of five qualified voters. All money available for school purposes, except for the construction and equipment of schoolhouses and the acquisition of sites for the same, shall be expended under the direction of said board, and the treasurer of said board shall be the custodian of said money, and he shall, before entering upon the duties of his office, give his bond, with sufficient sureties, to the school district, in such sum as the common council may direct, and subject to its approval, but not less than twice the amount that may come into his hands as treasurer, conditioned that he will honestly and faithfully disburse and account for all money that may come into his hands as such treasurer. The said board shall have the power to hire and employ the necessary teachers, to provide for heating and lighting the schoolhouse,

and in general to do and perform everything necessary for the due maintenance of a proper school.

SEC. 5. That the clerk of the district court shall have the power, and it shall be his duty, in the division to which he is appointed, and in which he resides, upon petition as hereinafter specified, to establish by order in writing a school district at any camp, village, or settlement outside of the limits of any incorporated town, but such school district shall not embrace more than forty square miles of territory nor contain less than twenty resident white children between the ages of six and twenty years. The said petition shall specify as near as may be the location and boundary of the proposed school district, the number of people, the number of families, and the number of children between the ages of six and twenty years, resident therein, and such other material facts as tend to show the necessity for the establishment of the school district. Said petition shall be signed by not less than twelve persons of adult age who are citizens of the United States or have declared their intention to become such and who reside within the boundaries of the proposed school district. If the clerk of the court is satisfied that it is necessary and proper to grant such petition, he shall make an order in writing establishing the school district prayed for, describing the same and defining its boundaries, and he shall also in said order appoint three of the petitioners to supervise and give notice of the first election, and shall specify the time and place of the same. The original order shall remain on file in the records of the court, and a copy of the same shall be posted at three public places in the school district at least ten days before the election, and such posting shall be deemed a sufficient notice of such election. All persons qualified to sign said petition shall be qualified to vote at said election. The qualified voters of said school district shall at said election choose by a plurality vote a school board of three members, consisting of a clerk, a treasurer, and a director, who shall, before entering upon the duties of their trust, each take an oath in writing to honorably and faithfully discharge the duties of their office. In case a vacancy in the membership of said board occurs from death, resignation, removal, or other cause, such vacancy may be filled by a special election, upon ten days' notice called by the remaining members of the board upon the petition of five qualified voters. The treasurer shall be the custodian of the monies of the school district, and he shall, before entering upon the duties of his office, give his bond to the school district, with sufficient sureties, to be approved by the clerk of the court, and in such sum as he may direct, but not less than twice the amount of money that may come into his hands as treasurer, conditioned that he, the treasurer, will honestly and faithfully disburse and account for all the money that may come into his hands by virtue of his office. Said board shall have the power to build or rent the necessary schoolhouse or schoolroom, to equip the same with the necessary furniture and fixtures, to provide fuel and light, to hire and employ teachers, and in general to do and perform everything that may be necessary for the maintenance of a public school. The members of said board shall hold office for the term of one year and until their successors are elected and qualified. An annual election shall be held each year, after the first election, for the election of members of said board. As soon as the members of said school board have been elected and qualified, they shall send to the clerk of the court and file in his office a certificate of their

election under the hand and seal of the judges or supervisors of election, their oaths of office, and the bond of the treasurer, and the clerk of the court shall file said papers and carefully keep them as part of the files and records of his office, and he shall at once send to the governor of the District of Alaska a certified copy of said papers, together with a certified copy of the order establishing the school district, and the governor shall duly file and preserve the same. The said board, as soon as they have complied with the requirements aforesaid, shall immediately report in writing to the governor the number of children in their school district between the ages of six and twenty years that intend to attend a public school, and the wages per month for which a teacher can be obtained; and after a school has been opened and maintained they shall, at the end of each school term report to the governor in writing the length of the term, the wages paid the teacher, the total number of pupils in attendance, and the daily average of such attendance at such term. The governor shall assign and set apart to each school district established and organized under the provisions of this section a sum, not less than three hundred dollars nor more than one thousand dollars, in proportion to the number of pupils in the district, for the construction and equipment of a schoolhouse, which sum shall be paid by the Secretary of the Treasury to the treasurer of the school district upon the order and voucher of the governor out of that portion of the said Alaska fund set apart for the establishment and maintenance of public schools. The residue of said portion of said fund, or so much thereof as may be necessary, shall by the governor be apportioned among the several school districts established under the provisions of this section in amounts sufficient for each district to pay the wages of a teacher, together with the expense of fuel and light, for five months' school in each year. And the amounts so apportioned to each school district shall be paid to the treasurer of the district by the Secretary of the Treasury upon the order and voucher of the governor out of the said portion of said fund.

SEC. 6. That the clerks of school districts in the incorporated towns shall, at the end of each school term, report to the governor in writing the length of the term, the wages paid the teacher, the number of pupils in attendance, and the average daily attendance during the term.

SEC. 7. That the schools specified and provided for in this Act shall be devoted to the education of white children and children of mixed blood who lead a civilized life. The education of the Eskimos and Indians in the District of Alaska shall remain under the direction and control of the Secretary of the Interior, and schools for and among the Eskimos and Indians of Alaska shall be provided for by an annual appropriation, and the Eskimo and Indian children of Alaska shall have the same right to be admitted to any Indian boarding school as the Indian children in the States or Territories of the United States.

SEC. 8. That commissioners appointed by the judges of the district court in the District of Alaska, pursuant to existing laws, shall, as ex officio probate judges and in the exercise of their probate jurisdiction, have the power, and it shall be their duty, in their respective districts, to commit, by warrant under their hands and seals, all persons adjudged insane in their districts to the asylum or sanitarium provided for the care and keeping of the insane in their District of Alaska. No person shall be adjudged insane or committed as such, except upon and pursuant

to the following proceedings, to wit: Whenever complaint in writing is made by an adult person to a commissioner that there is an insane person at large in the commissioner's district, the commissioner shall at once cause such insane person to be taken into custody and to be brought before him, and he shall then immediately summon and impanel a jury of six male adults, residents of the district, to inquire, try, and determine whether the person so complained of is really insane. The members of said jury shall, before entering upon the discharge of their duty, each take an oath to diligently inquire, justly try, and a true verdict render, touching the mental condition of the person charged with being insane. Before entering upon such trial the commissioner shall appoint some suitable person to appear for and represent in the proceeding the person complained of as insane, and in case there is a physician or surgeon in the vicinity who can be procured, the commissioner shall cause such surgeon or physician to examine the person alleged to be insane, and after such examination to testify under oath before the jury in respect to the mental condition of said person. The commissioner shall preside at said hearing and trial. All witnesses that may be offered shall be heard and shall be permitted to testify under oath in said matter, and after having heard all the evidence the said jury shall retire to agree upon a verdict, and if the jury unanimously, by their verdict in writing, find that the said person so charged with being insane as aforesaid is really and truly insane and that he ought to be committed to the asylum or sanitarium aforesaid, and the commissioner approved such finding, he shall enter a judgment adjudging the said person to be insane and adjudging that he be at once conveyed to and thereafter properly and safely kept in the said asylum or sanitarium until duly discharged therefrom by law. The commissioner shall thereupon, under his hand and seal, issue his warrant, with a copy of said judgment attached, for the commitment of said insane person to the asylum or sanitarium aforesaid, which warrant shall be delivered to the marshal of the division in which said proceedings are had, and shall direct said marshal to safely keep and deliver said insane person to said asylum or sanitarium, and the said marshal, for the service of process in connection with and the guarding and transportation of the insane, shall be compensated from the same source and in the same manner as in the case of prisoners convicted of crime. The commissioner, the jurymen, and the witnesses in said proceeding shall be entitled to the same compensation and mileage as in civil actions. And all the compensation, mileage, fees, and all other expenses and outlays incident to said proceedings shall be audited and allowed by the district judge of the division in which said proceedings are pending and had, and when so audited and allowed shall be paid by the clerk of the court in such division as the incidental expenses of the court are by him paid and from the same fund.

SEC. 9. That all Acts and parts of Acts inconsistent with this Act are, to the extent of such inconsistency, hereby repealed.

Approved, January 27, 1905.

March 3, 1905. An Act making appropriations to supply deficiencies in the appropriations for the fiscal year ending June 30, 1905, and for prior years, and for other purposes. (33 Stats. at Large, 1225).

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Engineer Department.

Survey of wagon road from Valdez to Fort Egbert, Alaska: For a survey and estimate of cost of a wagon road from Valdez to Fort Egbert, on the Yukon River, to be made under the direction of the Secretary of War, five thousand seven hundred dollars and sixty three cents. (\$5,700.63).

Survey of military trail between Yukon River and Coldfoot, Alaska: For surveying and locating a military trail under the direction of the Secretary of War, by the shortest and most practicable route, between the Yukon River and Coldfoot, on the Koyukuk River, to be immediately available one thousand four hundred and thirty one dollars and fifteen cents. (\$1,431.15).

May 14, 1906. Amendment to Act approved January 27, 1905.
(34 Stats., 192).

* * * * *

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That section one of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes" approved January twenty-seventh, nineteen hundred and five, be, and the same is hereby, amended so as to read as follows:

SEC. 1. That all moneys derived from and collected for liquor licenses, occupation or trade licenses outside of the incorporated towns in the District of Alaska shall be deposited in the Treasury Department of the United States, there to remain as a separate and distinct fund, to be known as the 'Alaska fund' and to be wholly devoted to the purposes hereinafter stated in the District of Alaska. One-fourth of said fund, or so much thereof as may be necessary, shall be devoted to the establishment and maintenance of public schools in said district; five per centum of said fund shall be devoted to the care and maintenance of insane persons in said district, or so much of said five per centum as may be needed; and all the residue of said fund shall be devoted to the construction and maintenance of wagon roads, bridges, and trails in said district; AND PROVIDED FURTHER, That the clerk of the court of each judicial division of said district is authorized, and he is hereby directed, whenever considered necessary, to call upon the United States marshal of said judicial division to aid in the collection of said license moneys by designating regular or special deputies of his office to act as temporary license inspectors, and it shall be the duty of said United States marshal to render such aid; and the said regular or

special deputies, while actually engaged in the performance of this duty, shall receive the same fees and allowances and be paid in the same manner as when performing their regular duties.

SEC. 2. That section two of said Act be, and the same is hereby, amended so as to read as follows:

Sec. 2. That there shall be a board of road commissioners in said district, to be composed of an engineer officer of the United States Army to be detailed and appointed by the Secretary of War, and two other officers of that part of the Army stationed in said district and to be designated by the Secretary of War. The said engineer officer shall, during the term of his said detail and appointment, abide in said district. The said board shall have the power, and it shall be their duty, upon their own motion or upon petition, to locate, lay out, construct, and maintain wagon roads and pack trails from any point on the navigable waters of said district to any town, mining or other industrial camp or settlement, or between any such town, camps, or settlements therein, if in their judgment such roads or trails are needed and will be of permanent value for the development of the district; but no such road or trail shall be constructed to any town, camp, or settlement which is wholly transitory or of no substantial value or importance for mining, trade, agricultural, or manufacturing purposes. The said board shall prepare maps, plans, and specifications of every road or trail they may locate and lay out, and whenever more than twenty thousand dollars, in the aggregate, shall have to be expended upon the actual construction of any road or section of road designed to be permanent, contract for the work shall be let by them to the lowest responsible bidder, upon sealed bids, after due notice, under rules and regulations to be prescribed by the Secretary of War. The board may reject any bid if they deem the same unreasonably high or if they find that there is a combination among bidders. In case no responsible and reasonable bid can be secured, then the work may be carried on with material and men procured and hired by the board. The engineer officer of the board shall in all cases supervise the work of construction and see that the same is properly performed. As soon as any road or trail laid out by the board has been constructed and completed they shall examine the same and make a full and detailed report of the work done on the same to the Secretary of War, and in such report they shall state whether the road or trail has been completed conformably to the maps, plans, and specifications of the same. It shall be the duty of said board, as far as practicable, to keep in proper repair all roads and trails constructed under their supervision, and the same rules as to the manner in which the work of repair shall be done, whether by contract or otherwise, shall govern as in the case of the original construction of the road or trail. The cost and expenses of laying out, constructing, and repairing such roads and trails shall be paid by the Secretary of

the Treasury, through the authorized disbursing officer of the board designated by the Secretary of War, out of the road and trail portion of said 'Alaska fund' upon vouchers approved and certified by said board. The Secretary of the Treasury, shall, at the end of each month, send by mail to each of the members of said board a statement of the amount available of said 'Alaska fund' for the construction and repair of roads and trails, and no greater liability for construction or repair shall at any time be incurred by said board than the money available therefore at the time in said fund. The members of the board shall, in addition to their salaries, be reimbursed in the sums actually paid or incurred by them in traveling expenses in the performance of their duties, and shall be entitled to receive their actual expenses of living while serving as members of said board within the limits of the district and not stationed at a military post.

Approved May 14, 1906.

June 12, 1906. An Act making appropriation for the support of the Army for the fiscal year ending June 30, 1907. (34 Stats. at Large, 254).

* * * * *

For the construction and maintenance of military and post roads, bridges, and trails in the District of Alaska, to be expended under the direction of the Board of Road Commissioners described in section two of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes" approved January 27, 1905, and to be expended conformably to the provisions of said Act, one hundred and fifty thousand dollars. (\$150,000.00).

June 20, 1906. (34 Stats., p. 316).

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Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That the sum of \$35,000 be, and the same is hereby, appropriated, out of any money in the Treasury not otherwise appropriated, for a reconnaissance and preliminary survey of a land route from the navigable waters of the Tanana River, at or near Fairbanks, to the vicinity of Council City, in the Seward Peninsula, Alaska, for a mail and pack trail along such route, such sum to be immediately available, and to be expended under the direction of the Secretary of War; report of said survey and reconnaissance to be made to Congress at the earliest practicable day.

Approved June 20, 1906.

March 2, 1907. (34 Stats. at Large, 1178).

* * * * *

For the construction and maintenance of military and post roads, bridges, and trails in the District of Alaska, to be expended under the direction of the Board of Road Commissioners described in section two of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes" approved January 27, 1905, and to be expended conformably to the provisions of said Act, two hundred and fifty thousand dollars. (\$250,000.00).

May 11, 1908. (11 Stats., 142).

* * * * *

For the construction and maintenance of military and post roads, bridges, and trails in the District of Alaska, to be expended under the direction of the Board of Road Commissioners described in section two of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes" approved January 27, 1905, and to be expended conformably to the provisions of said Act, two hundred and fifty thousand dollars (\$250,000.00) to remain available until the close of fiscal year 1910.

February 6, 1909. Amendment to Act creating Road Commission). (35 Stats. at Large, 601).

* * * * *

So much of the Act approved January 27, 1905, entitled "An Act to provide for the construction and maintenance of roads, establishment and maintenance of schools, and care and support of insane persons in the District of Alaska, and for other purposes," as provides that five per centum of the license moneys collected outside of incorporated towns in the District of Alaska shall be devoted to the care and maintenance of such insane persons is hereby repealed, and such five per centum, or so much thereof as may be necessary, shall hereafter be applied to and used for the establishment and maintenance of public schools in said district, under the supervision of the governor.

March 3, 1909. (12 Stats., 148).

For the construction and maintenance of military and post roads, bridges, and trails in the District of Alaska, to be expended under the

direction of the Board of Road Commissioners described in section two of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes" approved January 27, 1905, and to be expended conformably to the provisions of said Act, three hundred and fifty thousand dollars (\$350,000.00) to remain available until the close of fiscal year 1911.

 March 23, 1910. (13 Stats., 302).

* * * * *

For the construction and maintenance of military and post roads, bridges, and trails in the District of Alaska, to be expended under the direction of the Board of Road Commissioners described in section two of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes" approved January 27, 1905, and to be expended conformably to the provisions of said Act, one hundred thousand dollars (\$100,000.00), to remain available until the close of fiscal year ending June thirtieth, nineteen hundred and twelve.

 March 3, 1911. (36 Stats., 1052).

* * * * *

Same wording as act of June 12, 1906 (34 Stats., 254) except beginning with amount appropriated.

. . . one hundred and fifty thousand dollars (\$150,000.00) to remain available until the close of the fiscal year ending June thirtieth, nineteen hundred and thirteen (1913); Provided, That hereafter the Secretary of War may, in his discretion, assign suitable retired officers of the Army to active duty as members of the Board of Road Commissioners for Alaska, and in the case of any officer so assigned the provisions of so much of the Act of Congress approved April twenty-third, nineteen hundred and four, entitled "An Act making appropriations for the support of the Army for the fiscal year ending June thirtieth, nineteen hundred and five, and for other purposes" as relates to the assignment of retired officers to active duty shall apply.

The above extended to Alaska an act of April 23, 1904 (33 Stats., 264) which provided that "The Secretary of War may assign retired officers of the Army, with their consent, to active duty . . . and such officers while so assigned, shall receive the full pay and allowances of their respective grades.

War Department Act approved August 24, 1912.

* * * * *

Construction and maintenance of military and post roads, bridges, and trails, Alaska: For the construction, repair, and maintenance of military and post roads, bridges, and trails in the District of Alaska, to be expended under the direction of the Board of Road Commissioners described in section two of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes," approved January twenty-seventh, nineteen hundred and five, as amended by the Act approved May fourteenth, nineteen hundred and six, and to be expended conformably to the provisions of said Act as amended, one hundred and twenty-five thousand dollars (\$125,000.00).

War Department Act approved March 2, 1913.

* * * * *

Construction and maintenance of military and post roads, bridges, and trails, Alaska: For the construction, repair, and maintenance of military and post roads, bridges, and trails in the Territory of Alaska, to be expended under the direction of the Board of Road Commissioners described in section two of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes," approved January twenty-seventh, nineteen hundred and five, as amended by the Act approved May fourteenth, nineteen hundred and six, and to be expended conformably to the provisions of said Act as amended \$155,000; Provided, That not to exceed \$55,000 of this amount may be used by the Board of Road Commissioners for Alaska for the protection of the Signal Corps Building and terminal grounds of the Alaska Military Cable and Telegraph System.

March 3, 1913 (37 Stats., 728). An Act to provide assistance to persons in Alaska who are indigent and incapacitated through nonage, old age, sickness, or accident, and for other purposes.

* * * * *

Be it enacted by the Senate and House or Representatives of the United States of America in Congress assembled. That section one of an Act entitled "An Act to provide for the construction and maintenance of roads, the establishment and maintenance of schools, and the care and support of insane persons in the District of Alaska, and for other purposes" approved January twenty-seventh, nineteen hundred and five, as amended by an Act approved May fourteenth, nineteen hundred and six, and as further amended by an Act approved February sixth, nineteen hundred and nine, be, and the same is hereby, amended as to read as follows: