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BOOK NO. 4
of 9

"ANNUAL REPORT of the ALASKA ROAD COMMISSION, 1928"

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U.S. DEPARTMENT of WAR

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1928

EXTRACT

REPORT UPON THE CONSTRUCTION AND
MAINTENANCE OF ROADS, BRIDGES,
AND TRAILS, ALASKA

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

PART I - 1928



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1928

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UNITED STATES
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Engineer officer: Maj. James G. Steese, to July 11, 1927, and Maj. Douglas H. Gillette, from July 12, 1927, to date.

Secretary and disbursing officer: First Lieut. John R. Noyes, Corps of Engineers, United States Army, to March 31, 1928, and Second Lieut. Emerson L. Cummings, Corps of Engineers, United States Army, April 1, 1928, to date.

Military assistants, under the immediate orders of the president of the board: Second Lieut. Arleigh T. Bell, Corps of Engineers, United States Army, to September 28, 1927; Second Lieut. Frank A. Pettit, Corps of Engineers, United States Army, to March 27, 1928; Second Lieut. Emerson C. Itschner, Corps of Engineers, United States Army, August 22, 1927, to date; Second Lieut. Emerson L. Cummings, August 22, 1927, to March 31, 1928; First Lieut. John R. Noyes, April 1, 1928, to date; and Second Lieut. Philip R. Garges, Corps of Engineers, United States Army, April 4, 1928, to date.

Organization and duties.—The act of Congress approved January 27, 1905, "To provide for the construction and maintenance of roads * * * in the District of Alaska, and for other purposes," as amended and supplemented, prescribes in part as follows:

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 Territory 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 Territory of Alaska * * * and all the residue (65 per cent of total fund) of said fund shall be devoted to the construction and maintenance of wagon roads, bridges, and trails in said Territory * * *.

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 towns, 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. * * * 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. * * * 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 expense 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. * * *. (Act of January 27, 1905, 33 Stat. 610, as amended by acts of May 14, 1906, 34 Stat. 192, and March 3, 1913, 37 Stat. 728.)

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. (Act of March 3, 1911, 30 Stat. 1052.)

[EXTRACT FROM THE ANNUAL REPORT OF THE CHIEF OF ENGINEERS
TO THE SECRETARY OF WAR]

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, October 2, 1928.

BOARD OF ROAD COMMISSIONERS FOR ALASKA

OFFICERS OF THE BOARD

President: Maj. James G. Steese, United States Army, retired, to October 15, 1927; Maj. Douglas H. Gillette, Corps of Engineers, United States Army, October 16, 1927, to November 8, 1927; Maj. Malcolm Elliott, Corps of Engineers, United States Army, November 9, 1927, to date.

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Provided, That hereafter, so long as the construction and maintenance of "military and post" roads in Alaska, and of other roads, bridges, and trails in that Territory shall remain under the direction of the Secretary of War, he be authorized to submit such estimates for the consideration of Congress as are in his judgment necessary for a proper prosecution of the work. (Act of July 9, 1918, 40 Stat. 843.) Hereafter when an appropriation for this purpose for any fiscal year shall not have been made prior to the 1st day of March preceding the beginning of such fiscal year, the Secretary of War may authorize the board of road commissioners to incur obligations for this purpose of not to exceed 75 per centum of the appropriation for this purpose for the fiscal year then current, payment of these obligations to be made from the appropriation for the new fiscal year when it becomes available. (Act of February 12, 1925, 43 Stat. 930.)

Provided, That the Secretary of War is hereby authorized to receive from the Territory of Alaska, or other source, such funds as may be contributed by them to be expended in connection with funds appropriated by the United States for any authorized work of construction, repair, and maintenance of roads, bridges, ferries, trails, and related works in the Territory of Alaska, and to cause such funds to be deposited to the credit of the Treasurer of the United States, and to expend the same in accordance with the purpose for which they were contributed. (Act of June 30, 1921, 42 Stat. 90.)

Construction and maintenance of roads, bridges, and trails, Alaska.—For the construction, repair, and maintenance of roads, tramways, ferries, bridges, and trails, Territory of Alaska, to be expended under the direction of the board of road commissioners described in section 2 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, as amended by the act approved May 14, 1906, and to be expended conformably to the provisions of said act as amended, \$325,000, to be immediately available. (Act of March 23, 1928.)

The board was organized May 15, 1905. War Department orders of February 15, 1913, relative to the work of the board, prescribe that the senior officer on duty, designated as president, shall have general charge of the operation, that the Engineer officer shall supervise the work of construction in the field as provided by law, and that the third officer shall act as disbursing officer of the board.

From its organization until December 29, 1917, the board reported direct to the War Department through The Adjutant General. On that date orders were issued by the Secretary of War placing the work under the general supervision of the Chief of Engineers.

Offices of the board.—The principal office of the board is at Juneau, Alaska. Suboffices are maintained, when required by active operations, at Valdez, Chitina, Fairbanks, Eagle, Anchorage, Seward, Takotna, and Nome, Alaska; Seattle, Wash.; and Washington, D. C.

Location and description.—The work thus far accomplished includes the construction of 1,523 $\frac{1}{4}$ miles of wagon road, 100 miles of tramroad, 1,375 $\frac{1}{4}$ miles of sled road, 7,044 $\frac{1}{2}$ miles of permanent trail, and 712 miles of temporary flagged trail, a total of 10,755 miles.

The Territory has an area of 590,880 square miles, which is more than twelve times the size of the State of New York, or practically one-fifth the size of the United States proper. At its southern point it is 700 miles from the northwest point of the State of Washington by the usually traveled route. Thence the southeastern Alaska Archipelago and a strip of mainland lying west of the Canadian boundary extend northwesterly for about 520 miles to the major portion of the Territory, which lies west of the one hundred and forty-first meridian and has a dimension of approximately 900 miles north and

south and 700 miles east and west, with the Alaska Peninsula and Aleutian Islands reaching out from the southwestern portion nearly 2,500 miles toward Siberia.

The topography of Alaska varies from rolling to extremely rugged, with little level area. The seaward slope, as far west as Cook Inlet, is especially rugged and subject to a heavy rain and snow fall.

The timber along the coast attains a dense growth, but in the interior is found only along the stream valleys. Spruce and hemlock form the greatest part of the timber on the coast. Hemlock is not found in the interior.

On the north slope of the Alaska range and on interior river valleys considerable areas are found frozen permanently to bedrock. The climate and topography throughout are such that in the summer time passage overland is difficult. On the seaward slope the heavy rainfall upon the blanket of decayed vegetation creates a footing almost impassable. In the interior the surface thawing of the bed of frozen gravel makes a widespread and difficult morass.

Original condition.—Prior to the organization of the Board of Road Commissioners for Alaska there were in the whole of the Territory less than a dozen miles of what might be called wagon road, with a few hundred miles of pioneer trail, mostly constructed by expeditions under the War Department. Travel was largely confined to the open waterways in summer and to their frozen courses overland in winter. When mining machinery and other supplies were to be transported from the coast or river landing they were in most cases hauled over the snow during the winter, with some preliminary clearing of the route when necessary. Travel across country in summer, generally speaking, was possible only on foot or with pack horses. It was difficult always, and frequently dangerous, on account of the numerous swift and deep streams, fed by the ice-cold and silt-laden waters of mountain glaciers.

Previous projects.—See description in Annual Report of the Chief of Engineers for 1923, beginning on page 2086. A new program of operations was recommended in the Annual Report of the Chief of Engineers, 1920, pages 61 to 65. The amounts expended on previous projects prior to June 30, 1921, were \$3,727,249.69 for new work and \$2,276,812.27 for maintenance, a total of \$6,004,061.96.

Existing project.—A new program of operations, prepared by the board of road commissioners in cooperation with the Governor of Alaska, the Territorial Road Commission, and other interested Federal and Territorial officials, was submitted in the annual report of the board for 1920. It proposes three classes of work: First, the construction of about 700 miles of arterial or feeder highways, mainly following old routes (estimated cost, \$7,000,000); second, the construction of development roads to be constructed from time to time on locations left for future determination (estimated cost, \$1,000,000); third, the maintenance of existing road and trail system (estimated cost for the 10-year period, \$2,000,000). Total estimated cost, \$10,000,000.

The total appropriations for the first five years were less than half the estimates, and about three-fourths of the available funds were required for maintenance and repair. Construction should be speeded up so as to get the maximum benefit from the work already

accomplished, and the 1920 program was, therefore, revised in 1924. The appropriations recommended for the second five years of the 10-year period are as follows:

(a) For maintenance and improvement of existing routes to the same standard throughout, 9,736 miles, at \$870,000 per year.....	\$1,350,000
(b) For completion of projects already undertaken.....	1,735,000
(c) For completion of projects already approved but not yet undertaken.....	1,780,000
(d) For completion of projects likely to arise with development during the 5 years.....	1,135,000
Total for 5 years.....	9,000,000

Federal appropriations required each year of 5-year period of road and trail development

1924 PROGRAM

Fiscal year	Working season	(a) Maintenance, existing routes	(b) Completion, approved projects already under way	(c) Construction, approved projects not yet under way	(d) Construction, new projects likely to develop	Total estimated	Amount actually appropriated
1927.....	1926	\$950,000	\$510,000	\$290,000		\$1,750,000	\$900,000
1928.....	1927	850,000	475,000	575,000	\$100,000	2,000,000	1,000,000
1929.....	1928	850,000	400,000	550,000	300,000	2,000,000	825,000
1930.....	1929	850,000	250,000	300,000	350,000	1,750,000	
1931.....	1930	850,000	100,000	65,000	485,000	1,500,000	
Total.....		4,350,000	1,735,000	1,780,000	1,135,000	9,000,000	2,725,000

For latest published maps see map following page 104, Part II, of the annual report of the Alaska Road Commission, fiscal year 1926, and also a wall map of Alaska published by the board of road commissioners, 1923.

Recommended modifications of project.—None.

References to published articles not previously reported.—Highway Development in Alaska, Commerce Reports, November 14, 1927, pages 379-381, illustrated by Maj. Douglas H. Gillette, Corps of Engineers, United States Army.

Local cooperation.—For description of development of local cooperation, authorized by the act of June 30, 1921, previously quoted, see Annual Report of the Chief of Engineers for 1924, beginning on page 2071.

Under the provisions of section 17 of the Territorial road law of April 21, 1919, Mr. Anton Eide, assistant superintendent of the board for southwestern Alaska, acted as chairman and secretary of the Territorial division road commission for the third division. Similarly, Mr. Hawley W. Sterling, superintendent of the board for the Fairbanks district, acted as chairman and secretary of the fourth divisional road commission. No Territorial road organization has been maintained since March 31, 1921.

During the fiscal year the board supervised the expenditure of \$13,975.34 by the chairman of the Territorial road commission for the third division and \$17,570.41 by the chairman of the Territorial road commission for the fourth division.

During the fiscal year it has expended directly \$17,469.56 for shelter cabins, \$127,986.65 for roads, \$21,646.83 for aviation fields, \$6,364.05

for the Valdez Dike, \$565 for marking Gastineau Channel Bar, and \$6,365.86 for telephone lines from funds contributed by the Territory, and \$17,689.15 contributed by others.

For the working season of 1928 the Territorial board has allotted to the Department of Agriculture \$53,500 and to the Federal board the following amounts:

Cooperative projects.....	\$130,385.00
Shelter cabins.....	12,530.44
Aviation fields.....	35,400.63
Telephone lines.....	3,101.74
Nome Harbor.....	2,500.00
Valdez Dike.....	3,635.95
Lowell Creek.....	10,000.00
Total.....	203,643.76
Chairman-fourth division.....	2,000.00

Grand total..... 205,643.76

These funds are held subject to the call of the Federal board. The divisional funds are disbursed through local banks, but all vouchers are audited by the Federal board under the same restrictions that apply to Federal vouchers before being certified to the Territorial treasurer for payment.

Cooperation with the Territory has been continued in connection with the purchase, rehabilitation, and operation of two tramroads, one extending from Nome to Shelton on the Seward Peninsula, a distance of about 87 miles, and the other situated in the Tolovana district about 50 miles northwesterly from Fairbanks and extending from the town of Brooks about 13 miles southerly to the head of navigation on the Tolovana River.

The Nome-Shelton tramroad was purchased on October 3, 1922, for \$24,014. During the fiscal year \$10,184 was spent on its rehabilitation.

The Tolovana tramroad was purchased on June 11, 1924, for \$6,425. During the fiscal year \$12,263 was spent on its rehabilitation.

During the year the board assumed responsibility for the construction and maintenance of 48 aviation fields and the repair and maintenance of 736 miles of telephone lines for the Territory.

The 1919 Territorial road act released cooperative national forest funds of the Department of Agriculture which had been accumulating for several years. Until July 1, 1920, Maj. William H. Waugh, engineer, United States Army, a former engineer of the Bureau of Public Roads and up to that date a member of the Board of Road Commissioners for Alaska, served also as the representative of the Department of Agriculture in charge of national-forest road construction.

On July 1, 1920, the Department of Agriculture created a separate organization to handle its work and took over a few of the board's projects. The department funds were inadequate to handle all of the projects in the national forests that were under construction under the board.

When greatly increased funds for the national forests became available in 1922 the board offered its services to handle all forest-road construction in accordance with the requirements of the Forest Service, but the Department of Agriculture decided to increase its

own organization. Since May 1, 1922, it has assumed responsibility for all former projects of the board within or partly within the national forests. The funds of this board formerly absorbed in these projects are thereby available for use in other parts of the Territory.

The general road and trail system of the board ties into the Alaska Railroad, operated by the Secretary of the Interior, at 27 different stations. These highway and trail feeders to the Government railroad are an important factor in increasing business for the railroad, and thereby reducing its present operating deficit.

Since April 1, 1922, the board, under an agreement with the Secretary of the Interior, has handled road and trail work in the Territory for the National Park Service, including the construction and maintenance of the Mount McKinley National Park Highway, authorized by the act of Congress approved April 9, 1924.

Consolidation of road work under the board.—From the foregoing it will be noted that all road and trail work in the Territory of Alaska, including work supported by appropriations of the Territory, of the War Department, and of the Department of the Interior, but excluding the former projects of the board in the national forests now supported by appropriations of the Department of Agriculture, is consolidated under the direction of the board.

Effect of improvement.—The roads and trails constructed by the board have not only opened up to development nearly all sections of the Territory but have effected large savings in freight charges. The major portion of this freight would not have been transported without the roads, and the indirect loss that would have been occasioned by the restriction on output and development if the roads did not exist can not be estimated.

The use of automobiles is increasing rapidly. Approximately 90 per cent of the traffic on the main wagon roads is handled by motor, which has greatly increased the cost of road maintenance. The use of tractors for drawing freight, particularly on the sled roads of the interior, is a valuable new development.

Operations and results during fiscal year.—The work in the last fiscal year was largely directed to extending the general rehabilitation begun in 1920 to trails and roads in remote portions of the Territory. This gradual rehabilitation started on the more important projects and has now reached trails extending to all inhabited parts of the Territory.

The work accomplished during the fiscal year may be summarized as follows:

New construction: 67¼ miles wagon road, 96 miles sled road, 171½ miles trail, 240 linear feet of bridges of 60-foot span and over, 20 airplane landing fields, and 32 shelter cabins.

Improvement: 80 miles wagon road reconstructed, 83¼ miles wagon road graveled, 2 miles Tolovana tramway rebuilt, and numerous small bridges and culverts rebuilt.

Maintenance: 1,069½ miles wagon road, 98 miles tramway, 826 miles sled road, 4,857 miles permanent trail, 308 miles temporary flagged trail, 736 miles telephone lines, 10 airplane landing fields, and 18 shelter cabins. Total for all classes of work, 7,658½ miles, consisting of 1,300 miles of wagon road, 100 miles of tramway, 922 miles

of sled road, 5,028½ miles of permanent trail, and 308 miles of temporary flagged trail.

The more important roads upon which new construction was performed were the McCarthy-Nizina, Chatanika-Circle, Mount McKinley National Park, Gulkana-Chistochina, Long-Poorman, Ophir-Takotna, Wiseman-Nolan, Wiseman-Hammond, Kodiak-Abbotts, Homer Spit, and Kotsina. The more important structures upon which new construction or extensive repairs were performed included bridges across Valdez Glacier Stream, Stewart Creek, Tonsina, Tazlina, McCarthy Creek, Little Susitna, Buskin River, and Indian River.

The important Richardson Highway, which was reopened in 1921, was maintained open during the entire season. Improvement to new standard on the 3-year program for completion was continued and at least one-third of this program was accomplished during the year. As a result of the rapid improvement, travel has continued to increase over this route. During the 1928 season tourist travel began in June.

Construction of the extension of the Richardson Highway from Chatanika to Circle on the 3-year program was continued. Well over one-third of this program was accomplished during the year.

A late spring in 1927 somewhat retarded opening up work. An exceptionally dry summer, however, made it possible to catch up with the program, and satisfactory progress was made.

The total expenditures during the fiscal year amounted to \$1,253,663.18, of which \$430,923.16 was for new construction and \$822,745.02 was for maintenance and improvement.

Condition at end of fiscal year.—The work of maintenance and rehabilitation has been pushed, and the roads and trails under the jurisdiction of the board are in better shape than ever before. Work was performed upon 7,658½ miles of the system during the fiscal year.

The 410-mile Valdez-Chitina-Fairbanks road received special attention. This season should see this important overland route completed to a fairly uniform standard and given a gravel surface practically throughout. Over 120 miles of the 165-mile extension from Fairbanks to Circle, on the upper Yukon, are now passable for automobiles and the entire route is passable for wagons.

The total expenditures to the end of the fiscal year, June 30, 1928, amounted to \$12,258,369.83, not including outstanding liabilities or contributed funds, of which \$6,948,803.56 was expended for new construction and \$5,309,566.27 for maintenance and improvement.

Proposed operations.—Eight hundred and twenty-five thousand dollars was provided by the act of March 23, 1928. These funds will be expended on maintenance and some improvement of the existing system. Preliminary construction will be completed on the Fairbanks-Circle project but little other new work can be accomplished. Unless much greater annual appropriations are made, little can be done to meet the pressing need for improvements and extensions of the system, especially in providing urgently needed highway and trail feeders to the Government railroad (the Alaska Railroad) now completed. For the fiscal year 1928 Congress provided for a maintenance and operation deficit on the Alaska Railroad of approximately \$800,000.

The annual maintenance of the road and trail system after completion, as nearly as can be estimated at the present time, will cost about \$550,000.

Amount that can be profitably expended during the fiscal year ending June 30, 1930.—An appropriation of \$2,000,000 can be profitably expended on the work during the fiscal year ending June 30, 1930. This sum is based on the 1924 program. The estimate therein for the fiscal year 1930 was \$1,750,000, but the total of the appropriations for the fiscal years 1927, 1928, and 1929 was \$3,025,000 less than the amounts asked in the 1924 program for those years. More money for the fiscal year 1930 is therefore now required in order to accomplish the program of the existing estimate.

These funds will be distributed approximately as follows:

District	Maintenance of existing projects						
	Mileage of existing system			(a) Repair and improvement	Average per mile		
	Sled roads	Roads	Trails		Roads	Sled roads	Trails
Southeastern.....	68%		20	33,475	500		10
Bethel.....		26	938	8,300		40	8
Baria.....	20	174	383	91,000	450	30	7
Valdez.....	105%			84,200	800		
Chitina.....	219		433	113,100	500		10
Fairbanks.....	601	679	1,132	313,225	520	20	5
Southwestern.....	221	102	426	85,400	350	20	5
Kuskokwim.....	81	53	1,175	40,550	400	20	5
Nome.....	270	50	1,144	93,850	280	30	5
Total.....	1,623	1,375	7,766	850,000	480	22	6

District	New construction				Grand total of estimates (a), (b), (c), and (d)
	(b) Approved projects already under way	(c) Approved projects not yet started	(d) New projects likely to develop	Total (b), (c), and (d)	
Southeastern.....			\$20,000	\$20,000	\$53,475
Bethel.....			20,000	20,000	23,000
Engle.....	\$40,000			40,000	61,000
Valdez.....			25,000	25,000	169,200
Chitina.....	80,000	\$100,000	110,000	290,000	433,100
Fairbanks.....	200,000	130,000		330,000	671,225
Southwestern.....	150,000	100,000		250,000	363,400
Kuskokwim.....			25,000	25,000	68,550
Nome.....		120,000		120,000	213,850
Total.....	600,000	450,000	200,000	1,150,000	2,000,000

1 Includes 712 miles temporary flagged trails.

COMMERCIAL STATISTICS

Total commerce of Alaska for the calendar year 1927:

IMPORTS

Merchandise from the United States.....	\$35,004,008
Merchandise from foreign ports.....	766,802
Silver and gold from foreign ports.....	6,060
Total imports.....	36,376,870

EXPORTS

Merchandise to the United States.....	\$51,323,950
Merchandise, gold, and silver to foreign ports.....	483,651
Domestic gold and silver to the United States.....	5,744,838
Foreign gold and silver to the United States.....	9,180

Total exports..... 57,561,619

Grand total, exports and imports..... 93,937,989

This is a decrease of \$19,657,696, or 17 per cent, under the corresponding figure for 1926. This decrease was almost entirely due to reduction in the exports of canned salmon, caused by the short run of fish last season and the resulting small pack. Imports show an increase of \$4,215,330, or 13 per cent, over the corresponding figure for 1926.

The value of Alaska's mineral output in 1927 was \$14,145,000, as compared with \$17,664,800 in 1926.

Minerals are being produced in the following order of value: Copper, gold, coal, silver, lead, petroleum, marble, tin, and platinum.

While the total value of the mineral output for 1927 shows a marked decrease compared to the preceding year, this decrease in value is by no means to be attributed solely to decreased mining activity. The most important reduction is in the value of copper produced. The decrease in the market price of this metal alone would account for a decrease in value of \$500,000. This decrease in the market price also indirectly affects the curtailment of production.

There are still large areas in Alaska that have not been adequately prospected, and many promising properties are now lying idle because of lack of capital for the necessary equipment. The shortage of enterprising prospectors is a serious drawback that has resulted because wages for comparable work are actually lower in Alaska than in the States, though expenses are higher. As a consequence Alaska does not attract or hold the class of prospectors it formerly did.

Quoting from Dr. A. H. Brooks, late chief Alaskan geologist of the United States Geological Survey:

The Alaska gold miner shares with his colleagues in the rest of the world the disability produced by the disrupted economic conditions, which cause very high operation costs, while the value of his produce remains fixed. Were it not for the improvement in transportation furnished by the railroads and wagon roads, that in certain districts have reduced costs, Alaska gold output would have been far less than it has been.

The production of coal showed a slight increase in 1927 over that of the preceding year. The output was furnished mainly by the Evan Jones, Premier, and Alaska-Matanuska mines in the Matanuska region and the Suntrana and the Healy River field.

In 1927, as in the past, all the petroleum produced in Alaska was obtained from about a dozen small wells in the Katalla field, on the only patented tract of oil land in the Territory. These wells and a small refinery are operated by the Chilkat Oil Co., which sells its gasoline and distillate in the local market. Drilling in the Yakutatga

region by the General Petroleum Co. was discontinued after the hole had reached a depth of 2,005 feet.

The 1927 production of canned salmon was the smallest for years, being 46 per cent less than the 1926 production and 19 per cent less than the previous five-year average. This was due entirely to short runs of fish and is considered as a temporary fluctuation comparable to that which takes place in fishing activities everywhere from time to time.

The relative value of the chief fish products exported in 1927 is as follows: Canned salmon, fresh and frozen halibut, cured or preserved salmon, cured or preserved herring, fish oil, fresh or frozen salmon, fish meal, cured or preserved cod, shrimps, and clams.

Additional duties of the board.—The president of the board is also district engineer for the Juneau, Alaska, river and harbor district. The other two members of the board are placed under the immediate orders of the district engineer and the secretary and disbursing officer of the board is disbursing officer for the district.

The president of the board, in addition to his other duties, has under the provisions of acts of Congress approved June 17, 1910, and June 15, 1917, been detailed for consultation or to superintend the construction or repair of any aid to navigation authorized by Congress in the sixteenth (includes Territory of Alaska) lighthouse district and reported by letter to the Secretary of Commerce.

By informal agreement with the Territorial board of road commissioners this board has agreed, under the terms of the Territorial act of April 21, 1919, to permit its assistant superintendent for the southwestern district and its superintendent for the Fairbanks district to be appointed chairmen and secretaries of the third and fourth Territorial road districts, respectively, to supervise their operations and to certify vouchers to the Territorial treasurer for payment, following the same general procedure as for Federal vouchers. Expenditures, \$31,545.75.

Effective November 14, 1921, the president of the board was appointed consulting engineer for the Territory and assumed direct charge of all Territorial public works. In May, 1923, he was appointed director of public works for the Territory. Expenditures, \$198,089.34.

By informal arrangement, effective April 1, 1922, the president of the board has agreed to act for the National Park Service, Department of the Interior, on certain matters relating to the improvement of the Sitka National Monument and the development of Mount McKinley National Park. Expenditures, \$60,706.76.

At the request of the Quartermaster General of the Army, the board has agreed to assume charge of the administration of the Sitka National Cemetery, created by Executive order of June 12, 1924. Expenditures, \$792.83.

By direction of the Secretary of War the board has undertaken the regulation of Lowell Creek, Alaska, for the protection of Government property adjacent thereto, as provided in act of Congress approved March 23, 1928. Necessary surveys and plans have been made and contract awarded.

Financial summary

Amount expended on all projects to June 30, 1928, including receipts from sales, etc.:		
During fiscal years 1905-1920.....	\$5,231,085.63	
During fiscal years 1921-1927.....	5,968,705.36	
During fiscal year 1928.....	1,055,578.84	\$12,258,869.83
Alaska special fund, 1920.....	101,184.56	
Alaska special fund, 1921-1927.....	724,363.87	
Alaska special fund, 1928 (exclusive of reimbursements, \$3,296.69).....	198,089.34	1,023,637.77
		<u>13,282,007.60</u>
Total for new work.....	7,459,865.98	
Total for maintenance and improvement.....	5,822,141.62	
Total expended.....		13,282,007.60
Balance unexpended.....		941,707.52
Grand total, to be accounted for.....		<u>14,223,715.12</u>

Appropriations to June 30, 1928:

Construction and maintenance of military and post roads, bridges, and trails, Alaska.....	9,350,000.00
Wagon roads, bridges, and trails, Alaska fund.....	9,220,050.16
Construction of wharf at Juneau.....	22,500.00
Flood control of Lowell Creek.....	100,000.00
Contributions for flood control of Lowell Creek.....	25,000.00
Increase of compensation, War Department.....	95,059.50
National cemeteries.....	2,202.17
Roads and trails, national parks.....	206,000.00
Funds contributed by Territory of Alaska and others for public roads, bridges, trails, and ferries, Alaska special fund.....	1,030,748.18
Refunds to War Department appropriations.....	19,262.52
Sales, refunds, etc., Alaska fund to June 30, 1920.....	50,910.77
Sales, refunds, etc., Alaska fund since June 30, 1920.....	68,884.02
Sales, refunds, etc., to accrue to Alaska fund, June 30, 1928.....	8,372.11
Refunds to increase of compensation.....	16.95
Refunds to roads and trails, national parks.....	20.04
Refunds to contributed funds.....	10,481.61
Reimbursement from Navy Department.....	3,076.10
Total.....	<u>14,223,715.12</u>

Fiscal year ending June 30.	1924	1925	1926	1927	1928
Expended for new work ¹	\$490,300.53	\$728,040.04	\$825,045.36	\$700,792.40	\$439,923.10
Expended for maintenance and improvement.....	446,747.12	410,307.00	483,272.31	510,374.43	822,745.02
Total expended (not).....	936,107.65	1,138,347.04	1,311,317.60	1,217,166.89	1,262,668.18
Appropriated by War Department acts.....	725,000.00	955,000.00	600,000.00	1,022,500.00	825,000.00
Allotted from Alaska fund.....	115,603.29	123,871.33	137,431.00	142,095.28	73,653.04
Contributed by Territory of Alaska and others.....	110,805.35	70,861.57	136,318.11 ¹	93,772.30	210,352.74
Flood control of Lowell Creek.....					100,000.00
Funds contributed for flood control of Lowell Creek.....					25,000.00
National cemeteries.....		300.00	302.17	800.00	800.00
Roads and trails, national parks.....		80,000.00	50,000.00	16,000.00	60,000.00
Increase of compensation, War Department.....	68,068.95	1,835.54			
Total.....	1,011,227.50	1,210,868.44	1,224,051.94	1,275,077.67	1,205,308.38

¹ From 1921 to 1927, inclusive, the figures shown include certain improvements classed as "New work," which in 1928 are included under "Maintenance and improvement."

July 1, 1927, available balance	\$888,399.68
Amount appropriated by War Department, act approved Mar. 23, 1928	825,000.00
Amount appropriated by War Department, act approved Mar. 23, 1928, for flood control, Lowell Creek, Alaska	100,000.00
Contribution for flood control, Lowell Creek, Alaska	25,000.00
Amount accrued to Alaska fund during fiscal year 1928	73,653.64
Amount contributed by Territory of Alaska and others	210,852.74
Refunds, all appropriations	61.16
Receipts from sales, etc., during fiscal year 1928	11,608.48
National cemeteries, 1928	800.00
Roads and trails, national parks, 1928-29	60,000.00
Total resources	2,195,375.70
June 30, 1928, amount expended during fiscal year, including receipts from sales, etc.:	
New construction	\$430,923.16
Maintenance and improvement	822,745.02
	1,253,668.18
July 1, 1928, balance unexpended	941,707.52
July 1, 1928, outstanding liabilities	358,944.80
July 1, 1928, balance unobligated	582,762.72
Amount available from War Department, act approved Mar. 23, 1928	727,577.27
Amount available from War Department, act approved Mar. 23, 1928, for flood control, Lowell Creek, Alaska	100,000.00
Contribution for flood control, Lowell Creek, Alaska	25,000.00
Amount available from Alaska fund on June 30, 1928	55,517.80
Wharf, Juneau, Alaska	7,641.15
Sales to accrue to Alaska fund on June 30, 1928	8,372.11
National cemeteries	7.17
Amount available from funds contributed on June 30, 1928	17,592.02
Amount available for fiscal year ending June 30, 1929	941,707.52
Amount (estimated) required to be appropriated for completion of existing projects	1,275,000.00
Amount that can be profitably expended in fiscal year ending June 30, 1930:	
New construction	1,150,000.00
Maintenance and improvement	850,000.00
Total	2,000,000.00

APPROPRIATIONS

1. Construction and maintenance of military and post roads, bridges, and trails, Alaska:	
Total amount appropriated to June 30, 1929 (see detailed statement on p. 2105, Annual Report of the Chief of Engineers, 1929)	\$3,370,000.00
Act of—	
June 30, 1900	* 85,000.00
June 30, 1921	425,000.00
June 30, 1922	465,000.00
Mar. 2, 1923	* 650,600.00
June 7, 1924	725,000.00

* Exclusive of available funds.

* For Fairbanks-Council survey.

* Includes \$800 for survey of Juneau wharf.

3. Construction and maintenance of military and post roads, etc.—Continued.

Act of—		
Dec. 6, 1924	\$55,000.00	
Feb. 12, 1925	900,000.00	
Apr. 15, 1926	900,000.00	
Feb. 23, 1927	* 1,022,500.00	
Mar. 23, 1928	825,000.00	
Mar. 23, 1928, flood control, Lowell Creek	100,000.00	
Total		\$9,473,100.00
2. Construction and maintenance of wagon roads, bridges, and trails, Alaska fund, act of Congress approved Jan. 27, 1903, as amended by an act approved May 14, 1906:		
Total receipts to June 30, 1929 (see detailed statement on p. 2106, Annual Report of the Chief of Engineers, 1929)	2,128,569.89	
Fiscal year—		
1920 (supplementary)	153,805.19	
1921	98,487.82	
1922	135,975.05	
1923	119,227.10	
1924	115,803.20	
1925	123,871.33	
1926	137,431.66	
1927	142,905.28	
1928	73,653.64	
Total		3,220,680.16
3. Increase of compensation, War Department:		
Fiscal year—		
1918	145.20	
1919	—	
1920	—	
1921	940.00	
1922	4,322.09	
1923	32,846.67	
1924	56,805.54	
		95,059.50
4. National cemeteries:		
Fiscal year—		
1925	302.17	
1926	300.00	
1927	800.00	
1928	800.00	
		2,202.17
5. Roads and trails, national parks:		
Act of—		
Mar. 3, 1925	\$80,000.00	
May 10, 1926	50,000.00	
Jan. 12, 1927	16,000.00	
Mar. 7, 1928	60,000.00	
Total		206,000.00
Total Federal appropriations		13,000,041.83

* Deficiency to cover increase of compensation, 1925.

* Includes \$22,500 for Juneau wharf.

CONTRIBUTED FUNDS

[Act of Congress approved June 30, 1921, Alaska special fund]

1. By the Territory of Alaska:

Fiscal year—

1920.....	\$115,517.94
1921.....	113,746.61
1922.....	54,737.23
1923.....	112,012.88
1924.....	106,325.33
1925.....	78,978.45
1926.....	133,499.16
1927.....	88,015.76
1928.....	191,363.59

Total.....	\$994,196.06
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2. By others:

Fiscal year—

1922.....	1,083.77
1923.....	1,379.54
1924.....	4,540.00
1925.....	883.12
1926.....	2,819.01
1927.....	5,756.63
1928.....	19,489.15

Total.....	30,551.22
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3. Funds contributed for the control of Lowell
Creek, Alaska

25,000.00

Total.....	25,000.00
Total, contributed funds.....	1,055,748.18

Grand total, all funds.....	14,061,790.01
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ANNUAL REPORT OF THE ALASKA ROAD COMMISSION
FISCAL YEAR 1928

REPORT UPON THE CONSTRUCTION AND
MAINTENANCE OF MILITARY AND POST
ROADS, BRIDGES AND TRAILS, AND OF
OTHER ROADS, TRAMWAYS, FERRIES,
BRIDGES, TRAILS, AND RELATED WORKS
IN THE TERRITORY OF ALASKA

TWENTY-FOURTH ANNUAL
REPORT

1928

PART III
OPERATIONS

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

JUNEAU, ALASKA

1928

ANNUAL REPORT OF THE ALASKA ROAD COMMISSION
FISCAL YEAR 1928

REPORT UPON THE CONSTRUCTION AND
MAINTENANCE OF MILITARY AND POST
ROADS, BRIDGES AND TRAILS; AND OF
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TWENTY-FOURTH ANNUAL
REPORT

1928

PART II
OPERATIONS

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

JUNEAU, ALASKA

1928

Alaska Road Commission,

Juneau, Alaska, October 1, 1928.

The Honorable, The Secretary of War
(Through The Chief of Engineers, United States Army)
Washington, D. C.

Sir:

In compliance with the provisions of Sec. 2 of an Act of Congress approved January 27, 1906, as amended by Act approved May 14, 1906, I have the honor to submit the attached report of the operations of the Board of Road Commissioners for Alaska for the fiscal year ending June 30, 1928:

General Jas. G. Steese was relieved as President of the Commission, effective October 16, 1927.

Major Douglas H. Gillette, Corps of Engineers, reported for duty July 12, 1927, and served as Chief Engineer until October 16, 1927, when he was appointed President of the Commission serving until November 8, 1927. Since that date he has served as Chief Engineer.

The undersigned assumed duty as President of the Commission on November 9, 1927.

First Lieut. John R. Noyes, Corps of Engineers, assumed the duties of Secretary and Disbursing Officer on July 1, 1927. Second Lieut. Emerson L. Cummings, Corps of Engineers, reported for duty on August 22, 1927, and succeeded Lieut. Noyes as Secretary and Disbursing Officer on April 1, 1928. Lieut. Noyes was then assigned other duty with the Board.

Second Lieut. Emerson C. Itschner, Corps of Engineers, reported for duty August 22, 1927 and Second Lieut. Philip R. Garges, Corps of Engineers, reported for duty April 4, 1928. They have remained on duty throughout the remainder of the year.

Second Lieut. Arleigh T. Bell, Corps of Engineers, remained on duty with the Commission to include September 28, 1927 and Second Lieut. Frank A. Pettit to include March 27, 1928.

The relief of General Steese closes a period of eight years of most valuable work. The sound judgment, intelligent foresight, tact and initiative displayed by General Steese in the conduct of the work, pursuant to his well balanced and practicable program, have been productive of invaluable and far-reaching benefits to the people of the Territory of Alaska.

The completion of the above program which is concurred in by the present Board requires only additional funds for construction.

The duties of this Commission, whose members also serve on river and harbor work under the Chief of Engineers, have required close cooperation with Territorial and Federal agencies. This cooperation has been accomplished without friction and has resulted in efficient execution of public works and economical expenditures of Federal and Territorial Funds. These desirable results are attributable in part to the authority vested in the Commission by law to handle its business "of its own motion" and make decisions in Alaska.

The accomplishments during the past year are shown in the report.

Respectfully,

MALCOLM ELLIOTT,

Major, Corps of Engineers, U. S. Army,
President.

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Suspension bridge, Kotsina River Pack Trail	" "
Kiwalik shelter cabin, Unalakleet-Kotzebue Mail Trail	" "
Bridge over Chena Slough, Fairbanks, span 300 feet	" "
Yukon Highway at Mile 35	" "
Pack train on "Goat-Trail"	" "
Cable car at Fish Point, Klehini River	" "

REPORT UPON THE CONSTRUCTION AND MAINTENANCE OF MILITARY AND POST ROADS, BRIDGES, AND TRAILS, ALASKA; and of other Roads, Tramways, Ferries, Bridges, Trails and Related Works in the Territory of Alaska.

REPORT OF THE BOARD OF ROAD COMMISSIONERS FOR ALASKA.

Malcolm Elliott.....President.
 D. H. Gillette.....Engineer Officer.
 E. L. Cummings.....Secretary and Disbursing Officer.

For description of Project Under This Commission see Part I of this Report, contained in Annual Report of the Chief of Engineers, United States Army.

STATUTORY AUTHORITY.

For a statement of the statutory authority under which the Commission operates, see Part II, Annual Report for 1926, beginning on page 7.

CURRENT APPROPRIATION.

Construction and Maintenance of Roads, Bridges, and Trails, Alaska: For the construction, repair, and maintenance of roads, tramways, ferries, bridges, and trails, Territory of Alaska, to be expended under the direction of the Board of Road Commissioners described in Section 2 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, as amended by the Act approved May 14, 1906, and to be expended conformably to the provisions of said Act as amended \$825,000 to be immediately available. (Act of March 23, 1928.)

OPERATIONS DURING THE FISCAL YEAR.

The work during the fiscal year ending June 30, 1928, was executed under appropriations for "Construction and maintenance of roads, bridges, and trails, Alaska, 1927-1928" approved February 23, 1927 and "1928-1929" approved March 23, 1928, and from receipts from the "Alaska Fund" act of Congress approved January 27, 1905, as amended by Act approved May 14, 1906. Work was also done

which was covered by funds contributed by the Territory of Alaska, the National Park Service and others, Act of Congress approved June 30, 1921.

The work in the last fiscal year was largely directed to extending the general rehabilitation begun in 1920 to trails and roads in remote portions of the Territory. This gradual rehabilitation started on the more important projects and has now reached trails extending to all inhabited parts of the Territory.

The work accomplished during the fiscal year may be summarized as follows:

New construction: 67½ miles wagon road, 96 miles sled road, 171½ miles trail, 240 linear feet of bridges of 60-foot span and over, 20 airplane landing fields and 32 shelter cabins.

Improvement: 80 miles wagon road reconstructed, 83¼ miles wagon road graveled, 2 miles Tolovana tramway rebuilt and numerous small bridges and culverts rebuilt.

Maintenance: 1,069½ miles wagon road, 98 miles tramway, 826 miles sled road, 4,857 miles permanent trail, 308 miles temporary flagged trail, 736 miles telephone lines, 10 airplane landing fields and 18 shelter cabins. Total for all classes of work, 7,658½ miles, consisting of 1,800 miles of wagon road, 100 miles of tramway, 922 miles of sled road, 5,028½ miles of permanent trail, and 308 miles of temporary flagged trail.

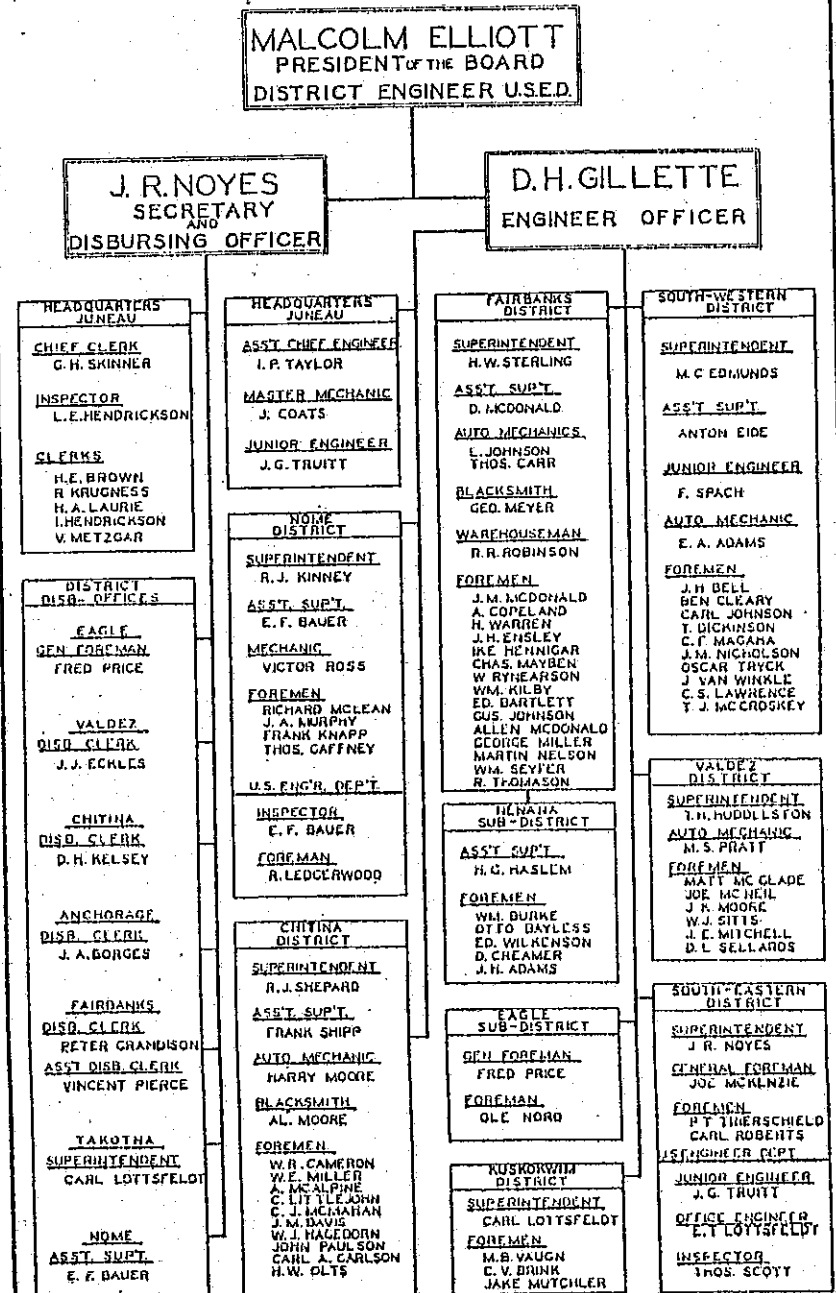
The more important roads upon which new construction was performed were the McCarthy-Nizina, Chatanika-Circle, Mount McKinley National Park, Gulkana, Chistochina, Long-Poorman, Ophir-Takotna, Wiseman-Nolan, Wiseman-Hammond, Kodiak-Alberts, Homer Spit, and Kotsina. The extensive bridge program inaugurated in previous years was continued. The more important structures upon which new construction or extensive repairs were performed included bridges across Valdez Glacier Stream, Stewart Creek, Tonsina, Pazlina, McCarthy Creek, Little Susitna, Buskin River and Indian River.

The important Richardson Highway, which was reopened in 1921, was maintained open during the entire season. Improvement to new standard on the three-year program for completion was continued and at least one-third of this program was accomplished during the year. As a result of the rapid improvement, travel both local and tourist has continued to increase over this route. During the 1928 season tourist travel began in June.

The extension of the Richardson Highway from Chatanika to Circle was continued on the three-year program to open for through traffic. Construction was well advanced and one more season should complete the work outlined in the program.

ORGANIZATION CHART

ALASKA ROAD COMMISSION AND U.S. ENGINEER DEPARTMENT
WORKING SEASON, 1927.



- 2 Auto Trucks, Dodge.
- 98 Auto Trucks, Ford.
- 63 Auto Trucks, G. M. C.
- 4 Auto Trucks, Packard.
- 1 Auto Truck, Pierce Arrow.
- 5 Auto Trucks, White.
- 1 Boiler, Piledriver.
- 2 Cars, Gasoline section.
- 4 Cars, Roller bearing push.
- 2 Compressors, air.
- 2 Crushers, stone.
- 1 Drum, hoisting.
- 31 Drags, road.
- 1 Drag, planer.
- 2 Drag Lines, gasoline.
- 2 Derricks, motor.
- 2 Ditchers, road.
- 1 Engine, donkey.
- 7 Engines, hoisting.
- 24 Graders, road, tractor drawn.
- 25 Graders, road, horse drawn.
- 14 Graders, power.
- 1 Holst, Allison.
- 6 Jackhammers.
- 4 Levels, surveying.
- 1 Loader, bucket, power driven.
- 1 Loader, belt conveyor, portable.
- 1 Locomotive, Fordson.
- 3 Machines, mowing, horse drawn.
- 4 Machines, mowing, tractor attachment.
- 4 Maintainers, tractor drawn.
- 6 Piledrivers.
- 65 Plows.
- 1 Plow, snow, lateral rotary type.
- 8 Rollers, road.
- 3 Saws, power driven.
- 1 Sawmill, portable.
- 1 Scarifier.
- 107 Scrapers, slip.
- 10 Scrapers, wheel.
- 1 Scraper, selfloading, tractor drawn.
- 20 Scrapers, Fresno.
- 4 Scrapers, Fresno, tractor drawn.
- 1 Shovel, $\frac{3}{4}$ -yd., steam.
- 6 Shovels, $\frac{1}{2}$ -yd., gasoline.
- 44 Sleds, bob.
- 18 Tractors, Best 30.

- 1 Tractor, Best 60.
- 6 Tractors, Holt.
- 1 Tractor, Case.
- 6 Tractors, Fordson, crawler track.
- 11 Tractors, Fordson.
- 34 Trailers, Highway.
- 7 Transits, surveying.
- 86 Wagons.
- 1 Welding Outfit.
- 5 Winches, hand.

PROGRESS OF THE WORK.

The high scale of wages and supplies in the Territory is a large element in the cost of this work. The rate paid for labor varies from \$3.50 to \$6 per day with board for common labor. The cost of subsistence and forage is also correspondingly high. Besides these high costs, the nature of the work in Alaska adds to the cost in a way to make comparisons with road work in the United States difficult. In the roads built here the cruising, clearing, grubbing and construction of the road includes all work done upon the roads in the settled parts of the United States from pioneer days. Even with this the mileage cost of our roads can be looked upon with a great deal of gratification.

In the classification of the Commission, wagon roads are any roads cleared, grubbed, ditched, graded, and drained sufficiently to accommodate wagon traffic. Light motor vehicles are now using these roads in increasing numbers. This requires a gravel surface at an increased first cost, but with an eventual saving in annual maintenance charges.

Sled roads are cleared and grubbed like wagon roads, but not graded. They are drained only sufficiently to prevent their destruction by the summer rains. Their wearing surface is of snow. Double bob-sleds, drawn by two, four or more horses haul heavy loads over these roads as well as over the wagon roads in winter time. During the past few seasons, caterpillar tractors have been successfully used during the winter time, and such traffic is expected to increase.

Trails include any construction less than the above, suitable for dog-sleds or single horse-drawn double-ender in winter and pack trains in summer. Except where frozen river surfaces are used some work is always necessary to permit the use of dog teams.

Flagged Trails represent cut-offs across frozen lakes, arms of the sea, etc. The marks are necessary to prevent travelers from getting lost in bad weather.

Since assuming charge at the beginning of the 1920 working season, the reorganized Commission has been engaged in overhaul.

ing the entire road and trail situation, rehabilitating or abandoning the projects which have fallen into disrepair or disuse, drawing up a progressive and comprehensive plan of operations covering a period of years, and extending the road and trail system to meet actual needs.

The total mileage of roads and trails constructed by the Commission during its first sixteen years of existence (1905-1920) aggregated 5602 miles, consisting of 1,031 miles of wagon road, 636 miles of sled road, and 3,223 miles of trail, and some 712 miles of temporary flagged trail.

Not all this mileage had been maintained year by year, some had been in disuse or practically impassable for many years and a small mileage had been superseded by other routes or methods of transportation as will appear more in detail below.

The specific routes included in this 5,602 miles are enumerated in Tables I and IV, Annual Report for 1921. The following table summarizes the status of the work of investigation and rehabilitation begun eight years ago and now practically completed.

STATUS	MILEAGE					
	Wagon Road	Sled Road	Trail	Total	Flagged	Grand Total
1920 Report:	1031	636	3223	4890	712	5602
ADDITIONS:						
New Mileage	682 1/4*	809 1/4	4972 1/2	6464 1/2		6464 1/2
Reclassified	161	249 1/2	80	480 1/2		480 1/2
GRAND TOTAL	1874 1/4*	1685 1/4	8275 1/2	11835	712	12547
DEDUCTIONS:						
Transferred to other Bureaus	116 1/2	9	46 1/2	171 1/2		171 1/2
Reclassified	33 1/2	173 1/2	273 1/2	480 1/2		480 1/2
Abandoned or dropped account duplication of routes	100 1/2	127 1/2	912	1140 1/2		1140 1/2
NET TOTAL	1623 1/4*	1375 1/4	7044 1/2	10043	712	10755
Territorial Work 1928	99 1/2			99 1/2		99 1/2
No Work 1928	127 1/2	463 1/2	2016	2592 1/2	404	2996 1/2
A. R. C. Work 1928	1400*	922	5028 1/2	7350 1/2	308	7658 1/2

From the above table it will be noted that the present system aggregates 10,755 miles, consisting of 1,523 1/4 miles of wagon road, 100 miles of tramroad, 1,375 1/4 miles of sled road, 7,044 1/2 miles of trail and 712 miles of temporary flagged trail. The net gain in mileage for the seven year period has been 5,153 miles, including 492 1/4 miles of wagon road, 100 miles of tramroad, 739 1/4 miles of sled road, and 3,821 1/2 miles of trail.

During the past fiscal year the expenditures were distributed over the following mileage:

DISTRICT	Wagon Road	Sled Road	Trails	Flagged Trails	Total
Southeastern Alaska	57 1/2	5	249		311 1/2
Etah	24	110	710		844
Bethel	100				100
Valdez	233		68		301
Chitna	389 1/2	182	386		957 1/2
Fairbanks	121 1/2	387 1/2	662		1171 1/2
Nenana	178 1/2	154 1/2	267 1/2		596 1/2
Southwestern Alaska	49	99	685		833
Kuskokwim	246 1/2	23	2091	308	2668 1/2
None					
TOTALS	1400	922	5028 1/2	308	7658 1/2

The Commission has expended the following funds since the beginning of road and trail development in the Territory:

F.Y.	W.D. Acts	Alaska Fund	Other Funds*	Total
1905		\$ 28,000.00		\$ 28,000.00(a)
1906	118,172.09	57,420.77		175,592.86(a)
1907	197,930.91	148,814.79		346,745.70(b)
1908	244,857.18	120,772.72		365,629.90(b)
1909	236,674.97	146,971.92		383,646.89(b)
1910	237,498.50	102,898.29		340,396.79(b)
1911	100,000.00	166,777.95		266,777.95
1912	150,103.58	167,302.40		317,406.07
1913		17,052.23(c)		17,052.23
1914	125,010.91	228,117.50		353,128.47
1915	153,174.43	170,688.87		323,863.30
1916	126,852.28	157,915.84		284,768.12
1917	165,011.73	136,768.89		300,780.62
1918	600,031.75	76,716.15		676,747.90
1919	326,060.60	272,020.18	145.20	598,185.98
1920	246,651.95	52,372.31		299,024.26
1921	132,426.73	124,992.96	101,184.56	358,604.25
1922	350,000.00	218,247.21	98,561.98	666,799.19
1923	426,807.34	173,029.19	83,411.16	683,247.68
1924	565,613.07	34,398.23	150,070.59	740,082.49
1925	730,423.17	67,683.67	138,000.81	936,107.65
1926	775,665.02	168,518.04	194,164.61	1,138,347.66
1927	1,013,577.53	115,635.11	182,705.05	1,311,917.69
1928	889,443.65	207,809.20	119,814.04	1,217,166.89
1928	860,192.90	134,693.11	266,882.17	1,254,668.18
TOTALS	\$8,661,120.29	\$3,293,957.16	\$1,320,930.76	\$13,282,007.60

(a)—To October 31st.
(b)—To September 30th.
(c)—U. S. Treasury Adjustment.

*Other Funds—includes the following expenditures from other appropriations.

F.Y.	Increase of Compensation	Quartermaster General	Funds Contributed	National Park Service
1918	\$ 145.20			
1920			\$ 101,184.56	
1921	940.00		97,611.98	
1922	4,322.09		79,089.06	
1923	28,857.72		121,212.87	
1924	46,676.36		92,325.45	
1925	16,136.08	300.00	98,708.63	80,020.00
1926		290.17	132,414.88	50,000.00
1927		\$12.00	103,001.10	15,000.94
1928		792.83	198,689.34	60,000.00
TOTALS	\$95,076.46	\$2,195.00	\$1,023,637.77	\$206,020.94

Total War Department Appropriations \$ 9,473,100.00
Balance unexpended July 1, 1928 836,218.42

Amount expended \$ 8,637,881.56
Add Navy Department reimbursement \$ 3,976.19
Add repayments and voucher corrections, 1920 420.82
Add repayments and voucher corrections, 1921-1928 18,841.70 23,238.71

Total Expenditures \$ 8,661,120.29

Total Alaska Fund	\$ 3,229,630.16	
Balance unexpended July 1, 1928	55,517.80	
Amount expended		\$ 3,174,162.36
Add Receipts from sales, 1905-20	\$49,448.09	
Add Voucher Corrections, 1905-30	1,462.68	
Add Sales, refunds, etc. 1921-28	68,884.02	119,794.79
Total Expenditures		\$ 3,293,957.15

These expenditures are summarized as follows:

FEDERAL APPROPRIATIONS:

Alaska Fund, 1905-1920	\$ 2,157,491.19
War Dept. Acts, 1905-1920	3,059,397.01
Increase of Compensation, 1918-1920	145.20
U. S. Treasury Adjustment, 1912	17,052.23
Alaska Fund, 1921-1928	1,119,413.73
War Dept. Acts, 1921-1928	5,601,723.23
Increase of Compensation, 1921-1925	94,941.25
Quartermaster General, 1925-1928	2,195.00
National Park Service, 1925-1928	206,020.94
Total	\$12,258,369.83

CONTRIBUTED FUNDS:

Territory of Alaska, 1920	\$ 101,184.56
Territory of Alaska, 1921-1928	887,701.99
Miscellaneous, 1922-1928	34,751.22
Total	\$ 1,023,637.77
Grand Total	\$13,282,007.60

In addition to the above funds, disbursed through the U. S. Treasury, the Commission has supervised the expenditure of the following funds disbursed by other agencies for road and trail development:

Road tax, labor, and miscellaneous contributions, 1905-1920	\$ 200,000.00
Department of Agriculture, 1920	202,702.67
Quartermaster General, 1901-1902	100,000.00*
Chief of Engineers, 1904-1905	34,631.73*
Territorial Funds and Forest Revenues Prior to 1921	684,239.64**
Territorial Divisional Commissioners, 1921-1927	161,439.95
Territorial Divisional Commissioners, 1927	31,545.75
Seward Peninsula Tramway, 1923	24,014.00
Tolovam Tramway, 1924	6,425.00
Mt. McKinley National Park, 1924	700.25
Katag Postage Survey, 1925	312.72
Miscellaneous, 1925-27	11,494.25
Miscellaneous, 1923	3,795.00
Total	\$1,461,301.01

*Expended prior to organization of the Alaska Road Commission.

**Expended prior to supervision by the Alaska Road Commission.

COST OF MAINTENANCE.

The annual cost of maintenance of routes in Alaska varies considerably with the locality, the range of climate being greater than that of the United States, and the cost of labor varying greatly. The experience of this Commission indicates that for all Alaska proper, average maintenance costs, including a fair allowance for floods, etc., are about as indicated in table following:

Classification	Mileage	Annual Maintenance per mile	Total
Wagon Roads	1,623 1/4	\$300	\$486,975
Sled Roads	1,375 1/2	25	34,381
Trails	7,044 1/2	10	70,445
Flagged Trails	712	3	2,136
Totals	10,755	\$56.22	\$593,937

The above does not provide for any improvements or extensions. The intermediate, or interior, sections of many of the through routes need improvement to the same standard as the rest so that the entire route may be used throughout by the same traffic without the necessity of breaking loads. A certain amount of new work on extensions must be provided for each year to keep pace with developments. This has only been possible up to the present time at the expense of needed maintenance work.

INSPECTION.

The magnitude of the task and extent of territory covered by the wide-flung activities of this Commission may be realized from the fact that it would take two years of continuous traveling on the ground with the best facilities available for a single individual to make a complete inspection of the entire mileage for which the Commission is responsible.

The most comprehensive inspection of the resources, routes of communication, government and territorial establishments and aviation fields ever made in the territory during one continuous trip was made in June, 1928, by Hon. George A. Parks, Governor of Alaska, Maj. Malcolm Elliott, President of the Alaska Road Commission and Mr. R. J. Sommers, Territorial Highway Engineer. The scope of the trip is shown on the map accompanying this report, from which it is seen that during a trip aggregating 4500 miles over 2000 miles were covered by plane. Only by the use of aviation was it possible to cover so great a distance in so short a time.

Actually the President and the Engineer Officer spend about 80% of their time in the field. They have visited every district and have inspected most of the sub-projects a number of times.

FEDERAL AID.

The provisions of the Federal Aid Road Acts do not apply to the Territory of Alaska. The original Federal Aid Road Act was approved July 11, 1916, and was amended by the Act approved February 28, 1919. The Federal Highway Act of November 9, 1921 as supplemented and amended, is now the basic law governing Federal aid road work.

The extension of the Federal Aid Road Acts to Alaska has been proposed. In view of the fact that nearly 12 years before the Federal aid idea was adopted, the Alaska Road Commission had been

created by Congress in 1905 to meet the special conditions in Alaska, had the work well in hand; and in view of the further fact that the theory, specifications, methods, etc., of the Federal aid do not meet the conditions in the Territory, Congress has instead increased the powers and appropriations of the Alaska Road Commission.

DEPARTMENT OF AGRICULTURE.

The National Forests, administered by the U. S. Forest Service, are provided with a road system the work on which is done by the U. S. Bureau of Public Roads. The territory served by this organization, comprising about 5% of the area of the Territory, lies mostly in Southeastern Alaska and could not be tied in with the rest of the Territory by a road system. The work of the two road building agencies is thus entirely distinct and no overlapping of work or effort is possible.

TERRITORIAL ROAD LEGISLATION.

For a resume of Territorial Road legislation, see Part II, Annual Report for 1924, beginning on page 17.

The following Territorial funds have been appropriated and expended to March 31, 1928.

APPROPRIATIONS:

Forest Revenues to June 30, 1927	\$ 267,150.77
April 30, 1927, Shelter Cabins	20,000.00
May 3, 1917, Roads, Bridges, Trails and Ferries	400,000.00
May 3, 1917, Nizina Bridge	25,000.00
May 1, 1919, Shelter Cabins	5,000.00
May 1, 1919, Roads, etc.	375,000.00
May 5, 1921, Nizina River Bridge	25,000.00
May 5, 1921, Seward Peninsula Railway	21,014.00
May 7, 1921, Shelter Cabins	10,000.00
May 7, 1921, Roads, etc.	240,000.00
May 3, 1923, Tolovana Tram	6,425.00
May 4, 1923, Roads, etc.	240,000.00
May 4, 1923, Shelter Cabins	15,000.00
May 5, 1923, Kaltag Portage Survey	312.72
April 30, 1925, Roads, etc.	260,000.00
April 30, 1925, Shelter Cabins	20,000.00
April 30, 1925, Telephone Lines	3,939.20
April 30, 1925, Pioneer Cem. Road	3,341.02
Deposits from sales, 1926	415.00
May 2, 1927, Telephone Lines	4,000.00
May 5, 1927, Roads, etc.	400,000.00
May 5, 1927, Shelter Cabins	40,000.00
Total appropriated to March 31, 1928	\$2,444,657.71

EXPENDITURES:

Expended by Territory prior to April 1, 1921	\$ 684,230.64
Expended by Territory, April 1, 1921 to March 31, 1928	26,289.71
Supervised by A. R. C. 1921-1928	223,737.42
Cooperative with A. R. C. 1920-1928	878,819.94
Cooperative with Forest Service 1920-1928	240,670.22
Total expended to March 31, 1928	\$2,153,756.93
Balance, April 1, 1928	290,900.78
Total	\$2,444,657.71

TERRITORIAL BOARD.

The Territorial Board of Road Commissioners, as now constituted, is composed of the following:

Geo. A. Parks, Governor of the Territory.....	Chairman.
Karl Thelle, Secretary of the Territory.....	Secretary.
Waistein G. Smith, Territorial Treasurer.....	Member.
Robert J. Sommers.....	Territorial Highway Engineer.

LOCAL COOPERATION.

For a résumé of past cooperative agreements, see Part II, Annual Report for 1924, beginning on page 20.

Under the authority of the Territorial Cooperative Road Act, approved April 21, 1919, and the Act of Congress approved June 30, 1921, the Commission made additional cooperative agreements for the prosecution of work supported in part by federal funds and in part by funds appropriated by the Territorial Legislature. In the first and second divisions, Southeastern and Western Alaska, respectively, no divisional chairmen were appointed during the past year, all available funds being allotted to cooperative projects. In the other two divisions, superintendents of the Commission were appointed chairmen of the respective Territorial commissions.

The President of the Commission continued to supervise certain public works for the Territory and the work of the Divisional Chairmen as well as the other work supported by appropriations of the Territorial Legislature. No Territorial road building organization has been maintained since March 1, 1921.

The following general road funds were expended on territorial projects during the fiscal year:

Cooperative Projects:	
Alaska Road Commission Funds	\$135,917.44
Territorial Funds	125,186.65
Miscellaneous Contributions	17,689.16
Total	\$281,793.24
Divisional Projects:	
Chairman, Third Division	\$ 13,975.34
Chairman, Fourth Division	17,570.41
Total	\$ 31,545.75
Special Projects:	
Shelter Cabins, Territory, 2nd Division	\$ 5,787.42
3rd Division	3,398.00
4th Division	8,284.14
Aviation Fields, Territory, 2nd Division	1,455.35
3rd Division	6,741.87
4th Division	14,449.11
Telephone Lines, Territory	6,365.86
Nome Harbor, Territory	2,500.00
Valdez Dyke, Territory	6,304.05
Gastineau Bar, Territory	305.00
Seward Peninsula Tramway, A. R. C. Funds	10,184.00
Tolovana Tramroad, A. R. C. Funds	12,263.00
Nizina Bridge, A. R. C. Funds	3,048.33
Total	\$ 80,206.68
Grand Total	\$393,545.67

For the working season of 1928 (fiscal year 1929) the Territorial Board has allotted to the Department of Agriculture \$53,500 and to the Alaska Road Commission the following amounts:

Cooperative Projects	\$136,385.00
Shelter Cabins	12,530.44
Aviation Fields	37,490.63
Telephone Lines	3,191.74
Nome Harbor	2,500.00
Valdez Dyke	3,635.95
Lowell Creek	10,000.00
Total	\$205,643.76

Of the above amounts \$635.00 for cooperative road projects, \$3,990.63 for aviation fields, \$7,530.44 for shelter cabins and \$3,635.95 for the Valdez Dyke have been deposited. The balance is held subject to the call of the commission. The existing balance of \$17,592.02 in contributed funds includes \$800 contributed by the city of Valdez for an aviation field and \$1,000 by Otto Halla for a road near Nome.

The cooperative Road Act has worked satisfactorily under the conditions imposed. Certainly, the amount of road work accomplished for the money expended has been far in excess of what would have been possible under separate organizations. Had the Territory attempted to expend its \$80,000 per division under an independent organization, nearly one-fourth of the available funds would have gone into overhead, salary and expenses of a divisional chairman and clerk, rent, light, etc. All of this service was furnished free by the Alaska Road Commission and at no additional cost to itself. In addition, the extensive plant and mechanical equipment of the Alaska Road Commission, representing a capital investment of over \$500,000, were furnished where available in the Territorial work without charge except for fuel and ordinary running expenses. Due to the extensive organization of the Alaska Road Commission, it has also been possible to apply Territorial money to outlying projects where the maintenance of an independent organization would have been impossible or prohibitive in cost. Finally, all available money is lumped together and expended upon a comprehensive system with a continuity in plans and a consistency in operations over an extended period of years.

The Alaska Road Commission, also, is a gainer under the Cooperative Road Act. By having greater funds available, it is able to consolidate purchases and supplies and thus to secure better prices. Conflicts in plans and complications in operations are avoided. By having funds becoming available all the year round, the difficulties resulting from fiscal year appropriations beginning or terminating about the middle of the open working season are minimized, and the entire organization and conduct of operations, are rendered more flexible.

CONSOLIDATION OF WORK UNDER THE COMMISSION.

The following additional duties have been imposed upon the members of the Commission by appropriate authority:

- (a) Effective April 1st, 1921, the Juneau, Alaska engineer district was created by G. O. No. 1, War Department, Office of the Chief Engineers, Washington, February 21, 1921. The President of the Commission, in addition to his other duties, was appointed District Engineer; the other two members of the Commission were placed under the immediate orders of the District Engineer and the Secretary and Disbursing Officer of the Commission was, in addition, designated as Disbursing Officer for the district. The Alaska district does not form a part of the Northern Pacific Division; the District Engineer reports direct to the Chief of Engineers. Detailed report of the operations of the Alaska District will be found in the Annual Report, C. of E.
- (b) By par. 3, S. O. No. 50-0, War Department, Washington, D. C., March 9, 1921, and under the provisions of Acts of Congress approved June 17, 1910, and June 15, 1917, the District Engineer who is also President of the Commission, in addition to his other duties, has been detailed for consultation or to superintend the construction or repair of any aid to navigation authorized by Congress, in the Sixteenth Lighthouse District (includes the Territory of Alaska). The principal work under this assignment now in progress is supervision of the construction by contract of beacon foundations in Wrangell Narrows.
- (c) At the request of the Territorial government the President of the Commission supervises various Territorial public works such as roads, aviation fields, shelter cabins, telephone lines, etc.
- (d) By informal arrangement, effective April 1, 1922, the President of the Commission agreed to act for the National Park Service, Department of the Interior, on certain matters relating to the improvement of the Sitka National Monument and the development of Mount McKinley National Park.
- (e) At the request of the Secretary of the Interior, the Commission made a survey and submitted a special report upon the control of Lowell Creek, Seward, Alaska, to protect government property in the vicinity from damage due to floods. By the act approved February 9, 1927, this flood control work was assigned to the Secretary of War who has desig-

uated the Alaska Road Commission as the agency to carry out the work. This work is in progress.

- (f) At the request of the Quartermaster General of the Army, the Commission disburses funds and generally supervises the administration of the Sitka National Cemetery created by Executive Order of June 12, 1924.
- (g) At the request of the commanding officer, Chilkoot Barracks, the Alaska Road Commission investigated the reservoir at the barracks and upon request of the Commanding General, 9th Corps Area, is supervising the necessary repairs.

CONSOLIDATED ENGINEERING ORGANIZATION.

The practical result of the foregoing orders has been the development, without legislation, but through executive order or inter-departmental or inter-bureau agreement, of a practical working arrangement through which the facilities of all the services involved are used interchangeably, but a careful account is kept so that each appropriation is eventually expended for the purpose intended by Congress and no appropriation is either increased or diminished by such interchange of working funds or facilities. Separate accounts and reports are rendered to the departments under the direction of which the work is performed.

The result has been an immediate speeding up of development work upon a unified plan based upon a careful survey of the situation, a thorough knowledge of the entire Territory and its problems, and a coordination of all the various conflicting interests after full hearings before all parties at issue. Instead of interminable references between different bureaus which formerly sometimes required papers to travel to Washington and back several times, matters are handled promptly upon the ground, or where the approval of Washington is required, such approval has usually been obtained by a single telegram covering the various angles or the views of the bureaus concerned.

The following are the current activities under consolidated engineering direction:

The construction, repair, and maintenance of federal roads, tramways, ferries, bridges, trails, and related works, now aggregating over 10,000 miles, and extending from open-all-the-year-round south coast ports to all inhabited parts of the Territory; Territorial roads, bridges, ferries, aviation fields, telephone lines and trails throughout the Territory, covered by cooperative agreements; shelter cabins; Nizina River Bridge; Nome-Shelton Tramway (87 miles

operated by cars drawn by motors or by dogs); Tolovana Tramway; Valdez Dyke; Yukon-Kuskokwim Portage.

Improvement of Nome Harbor; Improvement of Wrangell Harbor; Improvement of Wrangell Narrows; Improvement of the Tolovana River; the preliminary examination or survey of Ketchikan Creek, Port Alexander, Resurrection Bay, Sitka Harbor, Dry Pass, Gastineau Channel, Cordova Harbor, Anchorage Harbor, and Nome Harbor; the investigation of port facilities; the construction of a Government wharf at Juneau; the issuance of permits for fish traps and other structures in the navigable waters along the Territory's 26,000-mile coast line; miscellaneous inspections, public hearings and contingencies of Rivers and Harbors; Improvement of Sitka National Monument; development of Mt. McKinley National Park; Improvement Chilkoot Barracks Water Supply; administration of Sitka National Cemetery; control of Lowell Creek; Maintenance of aids to navigation in Nome Harbor, Safety Harbor and Gastineau Channel Bar; and the construction of beacons in Wrangell Narrows.

ALASKA TRANSPORTATION PROBLEMS.

In order that the difficulties of transportation within Alaska may be fully appreciated it is necessary for one to visit the Territory and to traverse parts of it not yet provided with roads or trails. To one gifted with a good imagination the following brief description will indicate the difficulties in part.

Alaska is a frontier country of vast area, about one-fifth that of the United States proper. With its population of about 30,000 whites and an equal number of natives it is in about the same stage of development as was our great western frontier at the time just preceding the Civil War. There are many reasons why Alaska will not develop so rapidly, however, one of the most important of which is the great difficulty encountered in transportation.

This is essentially a country of very bold relief. Along the entire southern coast line, from Portland Canal east of Ketchikan to False Pass at the southwest extremity of the Alaska Peninsula mountain ranges rise, abrupt and rugged, direct from the sea. This continuous chain of mountains along the coast has done much to retard the development of Alaska since it presents to the visitor a forbidding and discouraging aspect and it has always greatly increased the difficulties of access to the interior.

Beyond these mountains there lies a broad stretch of rolling upland country comprising the valleys of the Copper, Susitna and Nushagak Rivers. The two first named are the only rivers of any size that break through the continuous chain of coast ranges to drain into the Pacific Ocean. The Nushagak flows parallel to the

coast range and drains into Bering Sea. Within the valleys of the Copper and Susitna rivers rise two very rugged mountain groups, the Wrangell and Talkeetna ranges.

Beyond the valleys of the Copper and Susitna rivers the Alaska Range, which may be called the backbone of Alaska, rises to great heights. It includes Mt. McKinley, the highest mountain of North America and the highest in the world in relation to the territory immediately surrounding it. The Alaska Range is broken by numerous narrow but excellent passes and has had no such ill effect on the territory as have the somewhat less high mountains which fringe the coast.

Beyond the Alaska Range there is a vast country, rolling and in part mountainous, which comprises the valleys of the Kuskokwim and of the Yukon with its two main tributaries, the Tanana and the Koyukuk. The lower valleys of the Kuskokwim and Yukon are flat delta.

The Brooks Range, consisting of mountains that are neither especially high nor very rugged, separates the valleys above mentioned from a vast stretch of rolling tundra which stretches to the Arctic Ocean.

The subsoil of the vast interior of Alaska is permanently frozen. This is a condition handed down from a preceding period when the climate of Alaska was much colder than at present. For about four months during the summer the average temperature is about 55° to 60° while the temperatures above 90° are not rare. The surface thaws and the warmth, together with the long hours of daylight, causes vegetation to grow very rapidly. The resultant thick layer of moss and dead vegetation prevents the ground from thawing to any great depth. Where this layer of moss and dead vegetation is removed thawing does continue to bed rock, or at least to very considerable depths.

The frozen condition of the subsoil prevents the drainage of the surface by seepage while the accumulated moss and dead vegetation greatly retard surface drainage. The result is that in proceeding across country in Alaska in its normal condition in summer one wades through a peat-like muck, water-soaked and ankle to knee deep. The going is made rough by the profusion of bunches of grass root growth known locally as "niggerheads."

The above condition, varied only in degree, exists all over Alaska with the exception of the narrow fringe along the southern coast. Movement across country is further complicated, except on the Seward Peninsula and on the Arctic slope, by the presence of scrub timber, much of which is fallen and which must be cleared to permit ready passage.

Movement of a wheeled vehicle without a prepared roadway, is impossible everywhere except along a sand or gravel beach or along the gravel beds of the smaller streams.

Many of Alaska's streams are of glacial origin. In these the water is very cold and heavily laden with silt and the current is very swift. Quicksand is often encountered. Such streams are always crossed at considerable hazard.

Alaska is well provided with navigable streams which now serve the same purpose in the Territory as did the rivers in the states before the construction of the railroads. The Yukon, Kuskokwim, Innoko, Iditarod, Koyukuk, Tanana, Kantishna, and Tolovana Rivers, together with The Alaska Railroad, the Copper River and Northwestern Railway, the White Pass and Yukon Railway, and the Richardson Highway form main highways of commerce. From the seacoast or from points on these main highways freight is moved still closer to its destination on the smaller streams in light draft scows pulled by horses.

During the winter, extending on an average for the whole interior country from November first to April tenth, the streams are frozen over and the ground covered with snow and movement is much less difficult. The stream beds generally form excellent avenues for movement by dogsled or horse-drawn sleds. Trails for dog teams and sled roads for the heavier sleds drawn by horses or tractors are constructed at relatively little expense by clearing a lane through the timber, constructing occasional bridges over gullies and open streams, and grading down the especially steep approaches to frozen streams. Winter travel on the large streams is more or less hazardous though, due to danger from overflows or of going through holes or thin places in the ice. The trails are gradually being relocated off the river in such places.

During the period from October tenth to November first and from April tenth to May tenth, as an average for the interior country, the streams are just freezing or thawing, movement on or across the streams is impossible on account of running ice, and travel is at a standstill except on the railroads.

The most important occupations in the interior of Alaska are mining, fur production and farming. The most important product is gold. It can be transported by any available means from any point at which it is produced. Other minerals can be mined profitably at present only at localities where railroad or water transportation is immediately available. It follows that in general the problem is to transport supplies of all kinds to the point of consumption rather than from the point of production.

The average cost of transporting a ton of freight one mile by hobsled on a winter sled road, as shown by the table on page ... is 90c as compared with a cost for summer movement of 60c by auto truck or \$1.50 by wagon. It generally follows that for isolated mines and small mining communities in the remote interior the construction of wagon and automobile roads is not warranted.

It is the policy of this Commission to construct sled roads and summer pack trails to such localities from the nearest point on navigable water or on the railroad. If developments warrant, the summer trail can later be improved into a wagon road. Supplies for such points for use during a certain summer must be delivered at the head of navigation during the preceding summer and freighted over the snow during the preceding winter. The small amount of necessary perishable or emergency freight can be moved during summer over pack trails.

Where the operations are of considerable magnitude and around the larger communities the construction of wagon roads is warranted and necessary on account of the increased travel.

CONSTRUCTION.

Road construction in Alaska is a rather slow and expensive process. After the road has been located, timber cut and removed, stumps grubbed out, moss and vegetation removed, drainage ditches dug and grading completed it requires a period of three or four years for the subsoil to thaw, the ground water level to be lowered to its new level and the subsoil to reach a stage of equilibrium. Meantime the road is unsuitable for heavy loads and maintenance charges are high. In many places it is impossible at any reasonable expense to grade and drain the roadway and corduroy must be resorted to. Fortunately the scrub timber generally available, makes good corduroy. Available native timber has heretofore been of insufficient strength and not very durable, hence fir has been imported for all important bridges. Improvements in methods of timber production have recently been attempted which if successful will make possible some use of Alaska hemlock for structural purposes.

Gravel for road surfacing is generally available within a reasonable hauling distance. Gravelling is necessary for practically all roads which are used by automobiles. Concrete or other forms of hard surfaced roads are nowhere warranted in the present stage of development of the Territory.

Metal culverts are being introduced to replace the culverts of native timber heretofore used. The latter rot very rapidly and the frequent replacement required makes them quite expensive.

Sled roads are located on low ground, often swampy, and follow streams or lakes whenever this is advantageous. Clearing of timber, removal of stumps and niggerheads, construction of bridges across deep gullies and grading down of steep approaches are the general requirements in the construction of a sled road. Winter trails for dog teams are constructed on the same principles but require less in the way of bridges or grading of approaches.

Summer trails follow the driest—or the least wet—ground available. If grades are not excessive they are susceptible of later development into wagon roads.

It is the general policy on any route or within a certain district, to make gradual improvements throughout rather than to make extensive improvements on one route or portion of a route which cannot be advantageously used until the remainder or the connecting routes are so improved.

COMMERCIAL STATISTICS.

A traffic census was begun by the Commission in 1911. Comparing the expenditures for freight on each route at the present rate with the cost of transporting the same amount of freight at the rates prevailing before the road was constructed, a figure is obtained which represents the economic saving to the community served by the construction of the particular route in point.

The data thus collected indicates that the annual saving in cost of transportation of freight due to the construction of roads by the Commission is in excess of \$2,000,000. It is doubtful, however, if anything like that amount of freight would have been transported without the roads and trails and the indirect loss that would have been occasioned by the restriction on output and development if the roads did not exist cannot be estimated.

The traffic census table on pages — and — gives a synopsis of the traffic reported upon a few typical routes for the calendar year 1927. It shows a very gratifying reaction from recent work performed by this Commission, and an astonishing aggregate of traffic upon trails lying in remote sections.

In the interior, the great cost of moving freight by teaming or packing together with the difficulty and uncertainty of moving it at all, constitutes the main obstacle to the growth and development of the district.

During the opening of the diggings in the Chisana region a few years ago, beans, coffee, sugar, hay, candles, bacon, grain, etc., were sold at \$1.50 a pound. The freight charges were almost a dollar a pound so that the original cost of the article was of relatively

SUBSISTENCE COSTS.

Location	Av. No. Men Crew	No. Days Worked	Cost per Day per Man
Valdez District			
Richardson Highway			
Mile 6	21	126	1.53
Mile 9	24	152	1.55
Mile 13	9	37	1.94
Mile 38-60	20	122	1.99
Mile 80	26	53	2.01
Mineral Creek	9	58	1.77
Chitina District			
Richardson Highway			
Lower Tonsina	10	170	2.25
Miles *126-135	24	162	1.86
Miles *138-142	21	138	1.98
Miles *150-165	9	122	2.34
Miles *189-202	19	153	2.38
Mile *223	16	190	2.16
Chitochina	10	149	1.95
Kotsina	8	121	1.95
McCarthy	10	210	2.19
*Mileage from Valdez.			
Fairbanks District			
Richardson Highway			
Mile *340	6	190	1.78
Miles *300-308	28	167	1.67
Mile *292	5	170	2.23
Miles *245-264	14	158	2.11
Chatanika-Circle			
Miles 5-68	14	132	1.95
Miles 51-120	12	320	1.86
Miles 80-120	16	230	1.96
Miles 65-110	15	142	2.26
Miles 65-110	14	140	2.07
Fairbanks Locals	13	133	1.63
Fairbanks Locals	6	92	2.01
Hot Springs	7	135	2.94
Long	17	110	2.99
Wiseman	7	110	3.62
Chandalar	8	190	2.80
*Mileage from Valdez.			
Southwestern District			
Wasilla	25	240	1.52
Talkeetna	7	135	1.82
McKinley Park	30	236	1.55
Chulitna	12	79	1.99
Homer	7	132	1.78
Kodlak	6	167	2.21
Kuskokwim District			
Tokotna	14	131	2.85
Southeastern District			
Haines	15	151	1.69
Eagle District			
Eagle	10	70	2.01

TWENTY-FOUR YEARS' SERVICE.

With the period covered by this report the Alaska Road Commission concludes its twenty-fourth year of service. The work accomplished consists of the construction and maintenance of 1623 miles of wagon road, most of which is suitable for automobiles, 1375 miles of winter sled road, 7044 miles of trail and 712 miles of flagged trail. This work has been done at a total cost of about thirteen million dollars of which a little over seven million dollars was for new construction and about six million dollars for maintenance. About \$8,700,000 of the funds expended were derived from War Department Appropriation Acts. The balance, about \$4,600,000 or 35 per cent of the total expenditures, was obtained from Alaskan sources. The work accomplished, the funds expended for new work and maintenance and the amounts derived from Federal and Alaskan sources are shown on the diagram opposite. The work accomplished by the Commission naturally divides itself into three periods or phases.

The first was that covered by the period of time during which General Wilds P. Richardson, U. S. Army, Retired, was President of the Commission and extended from 1905 to 1917. This was essentially a period of pioneering. While this period covered nearly all the stampedes into the Territory, settlements and traffic lines of communication were very unsettled. With small but increasing appropriations, the pioneer development of the Territory was followed with great intelligence through this period. By 1913 a comprehensive program of operations was drawn up calling for the expenditure of \$7,500,000 during the succeeding ten years. During the last two years of General Richardson's direction, Congress appropriated \$500,000 each year for the work.

The largest project of the Commission, the Richardson Highway from Valdez to Chitina to Fairbanks, was located and improved over the major portion of the distance so as to provide for wagon traffic. By 1907 it was passable throughout for dog-teams; by 1910 for a light horse-drawn wagon; and in 1913 the first light automobile made the through trip from the interior to the coast. This period laid the foundation for all future work and terminated with the opening of the so-called War Period, 1917-20.

This second period was one of general stand-still for the work of the Road Commission, as well as industrial development within the Territory. Appropriations were small, expert personnel was not available for supervision, prices were high and labor scarce. The work was applied to a few projects only and much of the

mileage established in the previous period went into disrepair or almost entirely passed out of existence. During the last two years of this period appropriations were reduced to \$100,000 per year. This period closed with the reorganization of the Commission in 1920. To Major Wm. H. Waugh, Engineers, U. S. Army, fell the difficult task of administering the work during this period.

The third period, 1920 to the close of the fiscal year, 1928, was characterized by increased appropriations, broader legislation, procurement of mechanical equipment, reopening of old trails and roads, heavier construction to withstand motor traffic, and adjustment of lines of communication to the vast change brought about in Alaska by the approaching completion of The Alaska Railroad from Seward which reached Fairbanks in 1923. Federal appropriations increased from \$350,000 to \$1,000,000 per year, and other resources were secured so that funds available for the current season's work aggregate \$1,400,000. General James G. Steese, as President of the Alaska Road Commission, administered the work during this period. The basic policies put into effect by him are being followed by the present Board.

The pioneer period of the Alaska Road Commission is largely over. All existing mileage has been opened and improved, so far as funds have permitted. The present network of roads serves as an infallible guide for the future development of overland routes through the Territory. This development only calls for additional funds for construction.

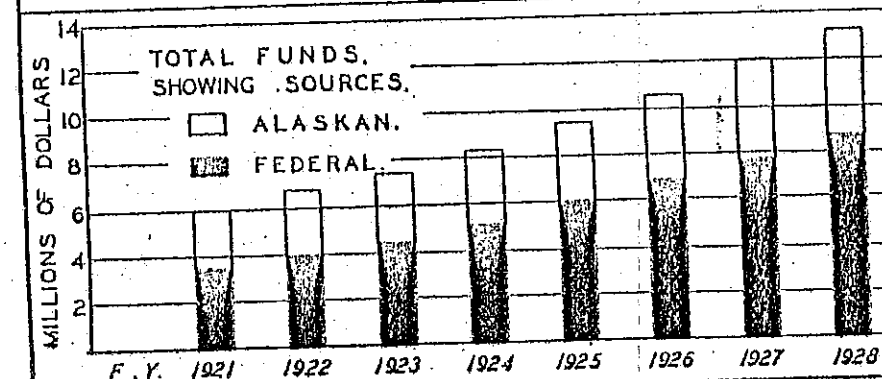
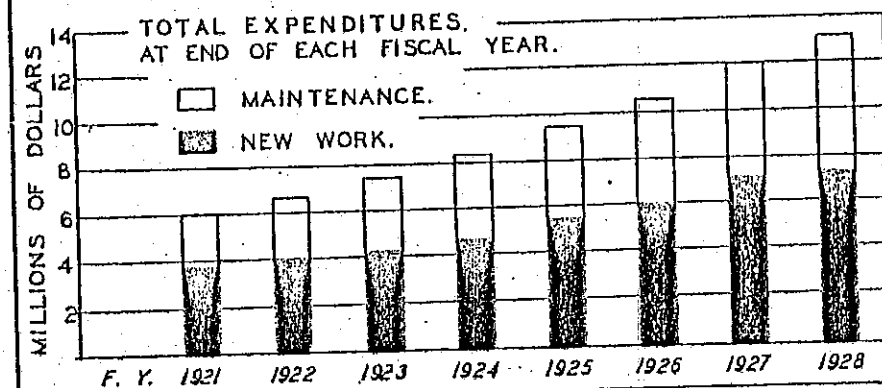
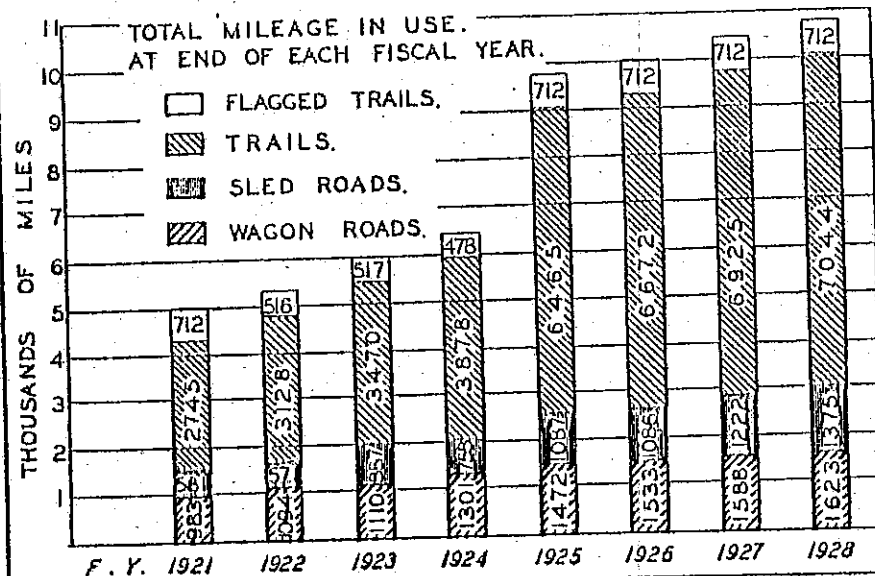
The Commission, soon after its reorganization, in 1920, prepared a new ten-year program calling for an expenditure of \$10,000,000 during the succeeding ten years. Appropriations, exclusive of the Alaska Fund and Territorial contributions, for the first five years aggregated \$3,220,000. The program as then revised, in order to speed up the completion of the work, calls for the expenditure of \$9,000,000 during the second five years of the ten-year period. Appropriations to date have totalled approximately one-half the estimates for the second five-year period. Progress has been accordingly somewhat curtailed.

PROPOSED OPERATIONS.

This report covers operations up to June 30, 1928 or practically the working season of 1927. Current operations (working season of 1928) will be covered in the annual report for 1929. About \$1,400,000 is available for the year. These funds will be expended on the rehabilitation and maintenance of the existing system. Little can be done to meet the pressing need for improvements and extensions of the system, without much greater annual appropriations than have been made up to the present.

ROAD CONSTRUCTION AND EXPENDITURES

ALASKA ROAD COMMISSION - 1905 - 1928.



An estimate of \$2,000,000 for the fiscal year ending June 30, 1930, has been submitted, and included in the annual report of the Department. This is in addition to contributed and tax funds.

JUNEAU HEADQUARTERS.

The general office of the Commission is located at Juneau, the capital of the Territory. This is the headquarters for all activities of the members of the Commission.

The field activities of the Commission extend to all inhabited parts of the Territory, but the largest projects and the bulk of its expenditures are located in the central part of the Territory tributary to the Richardson Highway and The Alaska Railroad. Close liaison is maintained with all other Federal or Territorial bureaus or officials.

The President of the Commission has general charge of the operations of the Commission, conducts hearings, investigates new projects, allots available funds, and approves and certifies, on behalf of the Commission, all vouchers and expenditures. He spends a majority of his time in the field keeping in close touch with the progress of the work and of conditions generally in the Territory.

The Engineer Officer supervises the work of construction in the field, prepares estimates, requisitions, etc., and oversees the design of major structures. He spends most of his time in the field and undertakes a great deal of pioneer reconnaissance work. The President and the Engineer Officer interchange functions in different parts of the Territory, thus expediting the handling of emergencies.

The Secretary and Disbursing Officer is in general charge of the office, handles purchases and supply, and disburses the funds of the Commission. He has a bonded disbursing clerk in each district who draws overdrafts on the nearest bank or commercial house to make prompt payment for labor and supplies. These overdrafts are met monthly by the disbursing officer and carried as "cash advanced" until the covering vouchers arrive; usually several months and frequently two years later. He visits each district office periodically to standardize methods and accounts. By means of the cable, telegraph, and radio, the general office is in constant touch with each district office.

WASHINGTON, D. C., SUB-OFFICE.

Routine business with the War Department is carried on through the Chief of Engineers, U. S. Army. The President of the Commission is required to defend the annual estimates of the Commission in person before the Appropriations Committees of Congress.

He is also called upon to testify upon Alaskan affairs before various other committees and to confer with other bureau chiefs in Washington. To meet these conditions, he maintains a sub-office in Washington, D. C., for several weeks each winter.

SEATTLE, WASH., ENGINEER OFFICE.

By informal arrangement, the District Engineer, U. S. Engineer Department, Seattle, Wash., acts as a purchasing agent of the Commission. Upon request he advertises and canvasses bids, inspects and ships supplies, answers inquiries, secures information, and, in general represents the Commission in Seattle. For this service he charges the Commission only for the actual time of such of his subordinates as may be actually engaged in this work. This accommodation results in a considerable saving to the United States, as otherwise the Commission would be compelled, during the busy season, to maintain a high-priced representative in Seattle and to provide for office space, fuel and light, clerical help, etc.

The services rendered to this Commission through such purchases and shipments are invaluable. The low prices obtained and the prompt shipments made have been an important factor in extending its work.

The supplies purchased include practically everything from bridge iron, metal culverts, forage, subsistence and heavy road machinery, to small tools, office equipment, and stationery. During the past four years, the supplies purchased and the cost for the entire transaction including advertising, acceptance, inspection and shipment, and all expenses incidental thereto, were as indicated in the following table:

Fiscal Year	Cost of Supplies Purchased	Seattle Office Charge	Per Cent
1924	\$183,247.50	\$ 3,048.17	1.67
1925	192,682.70	3,933.91	2.05
1926	249,945.06	3,647.97	1.46
1927	154,846.85	3,343.28	2.16
1928	165,192.35	3,390.34	2.05

SOUTHEASTERN DISTRICT.

Supervised from Juneau Office

1st. Lt. John R. Noyes, Supt., July 1, 1927-March 31, 1928.

2nd. Lt. E. L. Cummings, Supt., April 1 to June 30, 1928.

Joe McKenzie, General Foreman, Haines.

Peter Trierschield, General Foreman, Sitka.

This district embraces all the territory east of the 141st meridian, the so-called Panhandle.

Due to the rugged topography and the excellent system of sheltered waterways the main transportation will always be by water.

All road expenditures in this district were upon co-operative projects supported by the Territory and the Alaska Road Commission, with the exception of the Haines-Chilkoot, Haines-Jones Point and Sitka-Pioneer Cemetery Roads which are exclusively Territorial projects.

SUMMARY OF SUB-PROJECTS.

Sub-Project No.	Name of Sub-Project	Wagon Road	Trail	Total Miles
2E	Gastineau Channel Bar	....	....	....
2H	Juneau Wharf	....	....	2 1/2
3A	Haines-Wells	24 1/2	....	17 1/2
3B	Pleasant Camp Extension	17 1/2	....	20
3C	Porcupine Extension	5	15	10
3D	Haines-Mud Bay	10	....	3
3E*	Haines-Chilkoot	3	....	1 1/2
3F*	Haines-Jones Post	1 1/2	....	2 3/4
14	Sitka-Indian River	3/4	2	....
14A	Sitka National Monument	....	....	....
14B	Sitka National Cemetery	....	....	1/2
14C*	Sitka Pioneer Cemetery	1/2	....	1 1/2
14D	National Cemetery Road	1/2	....	2
46	Douglas-Gastineau Channel	2	....	3
44A	Douglas-Smuggler's Cove	....	3	1 1/2
51	Skagway-Smuggler's Cove	1 1/2	....	....
	Good Creek-Salmon River	....	....	....
	Totals	66 3/4	20	86 3/4

(*)—Territorial Projects.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following additions should be noted:

2E—This project comprises the shoal portion at the head of Gastineau Channel through which a shallow channel was dredged by the Territory several years ago. Funds for properly marking this channel for use by small boats were provided by the Territory.

2H—Construction of this wharf was authorized by the Act of Congress approved May 28, 1926. It consists of an approach 20 feet wide by 620 feet long and the main wharf 40 by 400 feet.

3C—Due to the completion of the new road on the left limit of the Klehini, 15 miles of this old route on the right limit are no longer maintained as a wagon road but are carried as summer trail.

3F—This road branches from the Haines-Wells Road in Mile 1 and extends to the beach of Chilkat Inlet at Jones Point.

14—This project includes the road from the city limits of Sitka through the National Monument and trails within the Monument.

14C—This road extends from the city limits of the City of Sitka to the new Pioneer's Cemetery and forms a loop around a portion of the cemetery.

14D—This road extends from the city limits of Sitka to the National Cemetery.

44A—This trail extends from the town of Skagway across Skagway River and up the mountain a distance of 3 miles. The Skagway River is crossed by means of a 175-foot suspension bridge.

OPERATIONS DURING YEAR.

The important operations other than routine maintenance may be summarized as follows:

2E—Pole markers were set at intervals of 100 feet over a total distance of 7500 feet and provisions made for their replacement when any were destroyed.

2H—Contract was awarded for the construction of the wharf and approach. Work was completed during the fiscal year. The City of Juneau contributed funds for rebuilding the portion of approach to the wharf over the old structure and provided the Government with a perpetual easement for the approach.

3A—Further improvement was made to this route. 3600 cu. yards of gravel were placed as resurfacing between Miles 10 and 20, 97 corrugated metal culverts were installed, replacing old timber culverts, and 1400 linear feet of river bank were riprapped.

3B—Encroachment of the Klehini River made necessary the relocation of 1½ miles of this route. One mile of this relocation was constructed during the past season and required the removal of 1800 cu. yds. of rock and 4200 cu. yds. of earth.

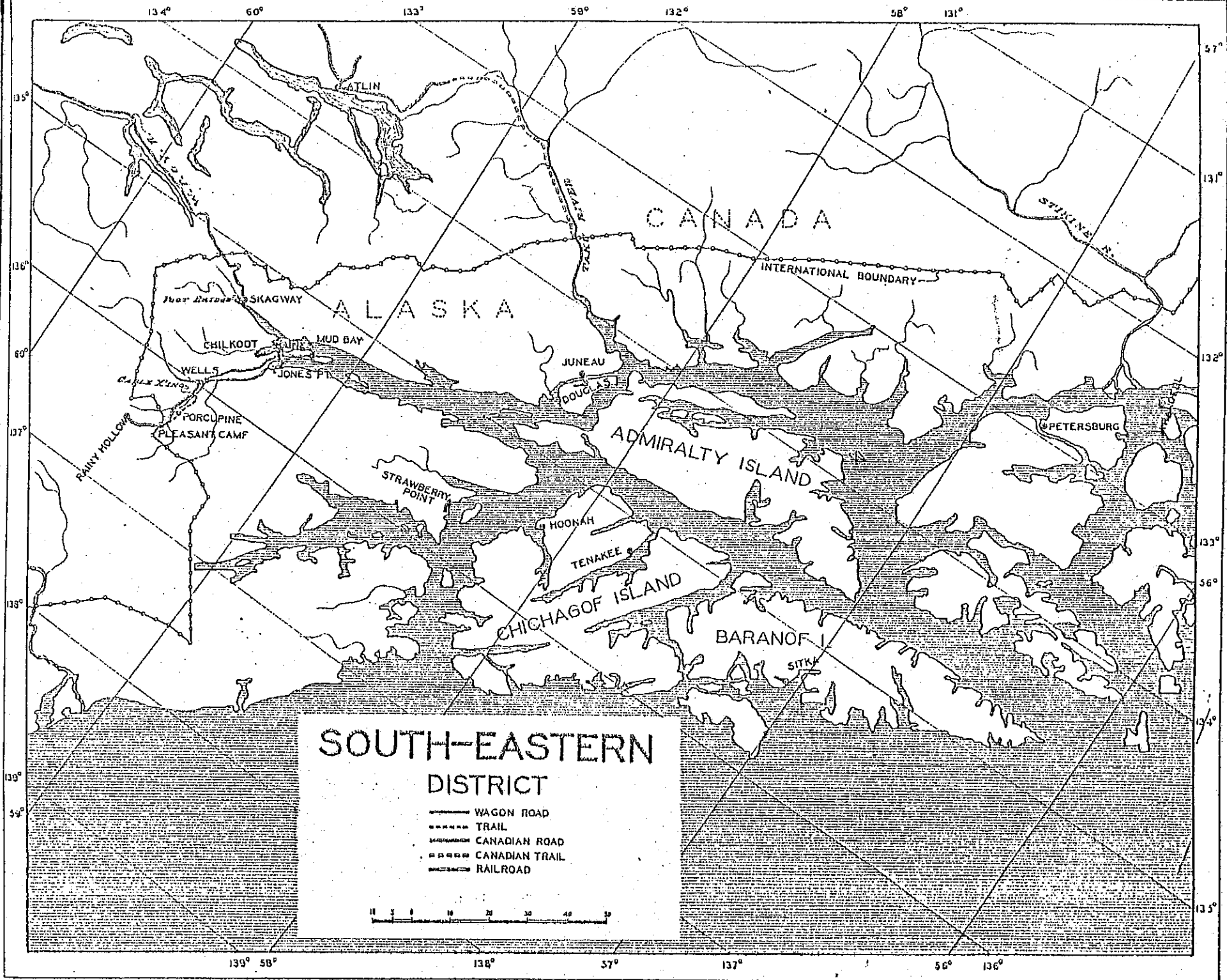
3D—4100 linear feet of this route were gravel surfaced.

14—Additional gravel was placed for surfacing.

14A—The boundary lines of the Monument were brushed out, a timber bulkhead was constructed along Indian River to protect the Witch Tree from damage due to erosion of the bank. Three totem poles were backed with new cedar logs and others received minor repairs. Driftwood accumulated in the channel of Indian River was removed and additional piling was placed in the bulkhead protecting the footbridge across Indian River.

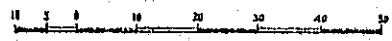
14B—An area of one-half acre was cleared of brush and stumps. Grading of the new road inside the Cemetery providing a turn around was partially completed. Two main entrance posts and fifteen intermediate fence posts were placed. The posts are of concrete and will support a cable.

14C—Additional surfacing was placed.



SOUTH-EASTERN DISTRICT

- WAGON ROAD
- - - - TRAIL
- CANADIAN ROAD
- - - - CANADIAN TRAIL
- RAILROAD



40—300 cu. yds. of gravel were placed as repairs to surfacing. Decking on two bridges was renewed.

81—The entire road was reshaped with grader providing a 12-foot crown. Drainage was established and fill approaches to Good Greek and Salmon River bridges were raised and widened. 2500 linear feet of road were gravel surfaced. All the above work was performed by contract.

PRESENT CONDITION AND NEEDS.

The most important project in this district, the Haines-Pleasant Camp road, is now completed to the boundary and requires proper maintenance. A section of one mile following the location of the old Dalton Trail should be rebuilt on the new location when sufficient traffic develops. The section from Haines to Wells requires further slight improvement.

Several minor projects should be constructed as additional funds become available. No extensive road projects should be undertaken in this district. The aim should be to provide transportation where needed from the nearest point on the inside waterways.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	57%	\$25,027.17	\$433.37
Trail	5	150.00	30.00
Totals	62%	\$25,177.17	\$401.23

EAGLE SUB-DISTRICT.

Supervised from the Juneau Office.
Fred Price, General Foreman in Charge, Eagle.
July 1 to Oct. 31, 1927.
June 1 to June 30, 1928.

This sub-district includes that part of the Territory north of 63° 30' north latitude and east of the 144th meridian. It includes a region of early development in the history of Alaska. During the past few years, no extensive development has occurred. The system of winter sled roads and summer trails giving access from Eagle to the Fortymile and Seventymile districts, includes the most important projects within the sub-district.

All projects in this sub-district are supported by the Alaska Road Commission exclusively, with the exception of shelter cabins and aviation fields which are supported by the Territory exclusively.

SUMMARY OF SUB-PROJECTS.

Sub-Project No.	Name of Sub-Project	Wagon Road	Sled Road	Trail	Total Miles
11A	Eagle-Liberty	20	7	.....	27
11AA	American Summit-Liberty .....	.....	.....	12	12
11B	Liberty-Fortymile .....	.....	23	.....	23
11C	Steel Creek-Jack Wade .....	.....	15	.....	15
11CC	Steel Creek-Jack Wade .....	.....	.....	15	15
11D	Steel Creek-Walker's Fork .....	.....	27	.....	27
11E	Eagle-Seventymile	4	16	40	60
11F	Jack Wade-Chicken .....	.....	.....	20	20
11G	Steel Creek-Canyon Creek .....	.....	.....	5	5
11H	Liberty-Dome .....	.....	.....	10	10
11I	Dome-Steel Creek .....	.....	.....	12	12
11J	Fortymile-Franklin .....	.....	30	.....	30
11K	Fortymile-Steel Creek .....	.....	8	.....	8
11L	Franklin-Chicken .....	.....	10	.....	10
11LL	Franklin-Chicken .....	.....	20	.....	20
11M	Jack Wade-Walker's Fork-Boundary .....	.....	.....	18	18
11MM	Jack Wade-Mouth Walker' Fork.....	.....	12	.....	12
11N	Lillywig Creek .....	.....	1¼	.....	1¼
11P*	Chicken Aviation Field .....	.....	.....	.....	.....
11Q*	Eagle Aviation Field .....	.....	.....	.....	.....
53	Eagle-Circle .....	.....	.....	160	160
65D	Kechemstuk-Tanana Crossing .....	.....	.....	60	60
65E	Chicken-Kechemstuk .....	.....	.....	28	28
86	Fourth of July Creek	5	5	.....	10
87	Woodchopper Creek .....	.....	.....	8	8
90D	Shelter Cabins 4th Division .....	.....	.....	.....	.....
Totals		29	174¼	388	591¼

(*)—Territorial Projects.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following changes and additions should be noted:

11A—Route name changed to Eagle-Liberty. The first 20 miles of this route from Eagle are suitable for wagon traffic. The last 7 miles into Liberty are winter sled road.

11AA—This summer pack trail now extends from its junction with the wagon road at the American Summit to Liberty where it connects with the route to Dome and Steel Creeks.

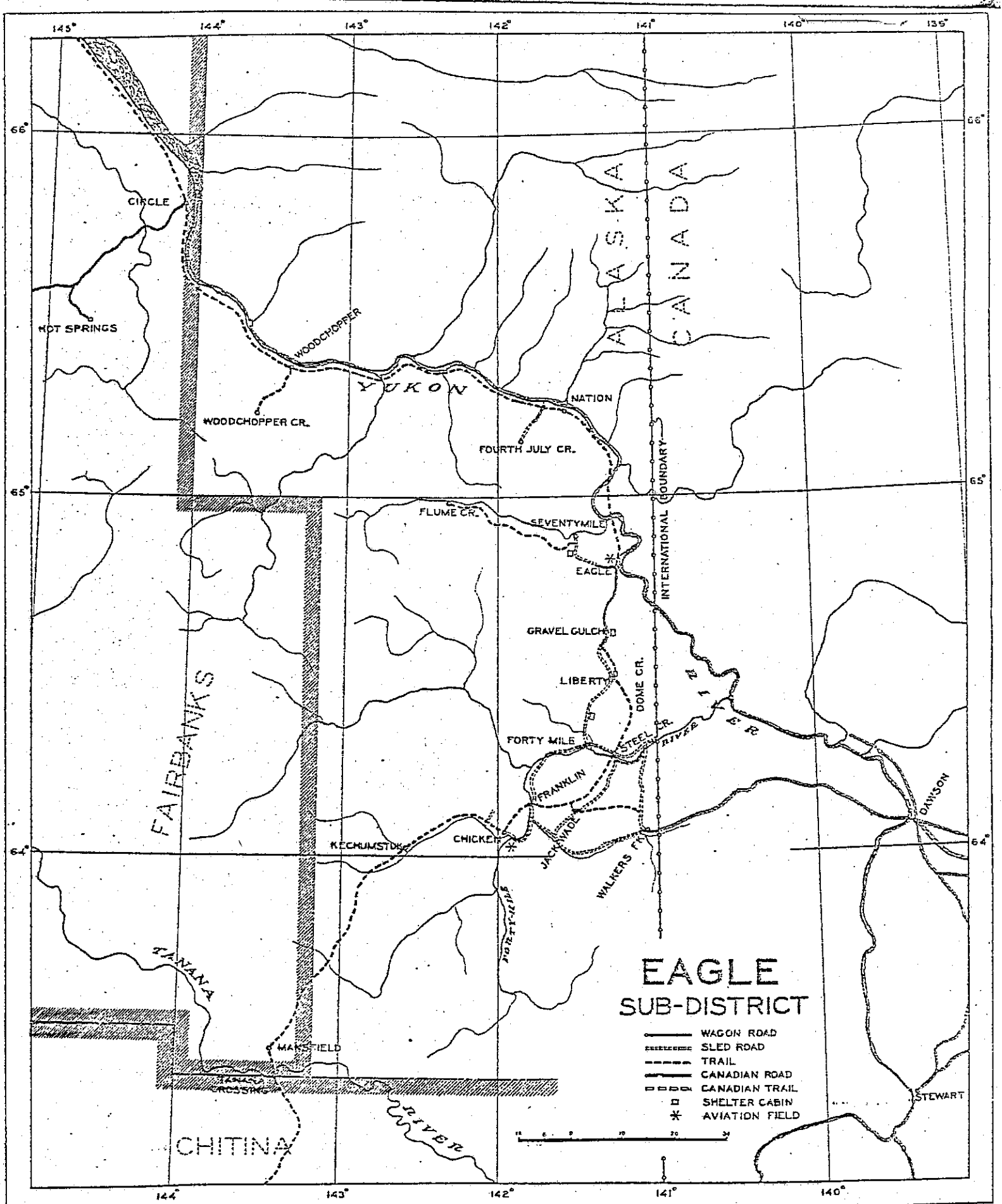
11B—Name changed to Liberty-Fortymile.

11CC—This summer pack trail lies to the northwest of the winter sled road instead of the northeast as stated in the 1924 report.

11D—This winter sled road is an extension of Route 11K. From Steel Creek it follows the bed of the Fortymile River to the mouth of Canyon Creek, up the latter to its head, over a divide and up the right limit of Walker's Fork to within 5 miles of the International Boundary.

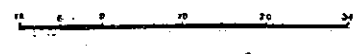
11E—Improvement to wagon road standard was continued to a distance of 4 miles from Eagle.

11F—This trail is incorrectly described in the 1924 report. It climbs the ridge west of Jack Wade postoffice following around



EAGLE SUB-DISTRICT

- WAGON ROAD
- - - SLED ROAD
- · · TRAIL
- CANADIAN ROAD
- · · CANADIAN TRAIL
- SHELTER CABIN
- * AVIATION FIELD



the head of Napoleon Creek and drops down to the crossing of the Fortymile River at Franklin. It then climbs the ridge following the right limit of Kettle Gorge and drops down to a fork of Chicken where it joins the winter sled road following the right limit of Chicken Creek to Chicken postoffice. The distance from Jack Wade to Franklin by this route is 12 miles and from Franklin to Chicken 8 miles.

11G—This is a summer pack trail which extends from the mouth of Steel Creek along the right limit of the Fortymile River for a distance of 5 miles to the mouth of Canyon Creek.

11MM—This winter sled road is a continuation of Route 11C leading from Jack Wade postoffice down Wade Creek to Walker's Fork and down the latter to its confluence with the Fortymile River. It serves as an alternate route from Steel Creek via Jack Wade to Chicken.

11N—This winter sled road extends from the Fortymile River up Eagle Creek to the mouth of Lillywig Creek. It serves several quartz prospects.

11P—This aviation field is 300 by 800 feet in size. It is located on the left limit of Dennison Fork about one-half mile from its junction with Mosquito Fork and two miles from the Chicken Post Office.

11Q—This aviation field is 350 by 900 feet. It is located on the grounds of old Fort Egbert adjacent to the town of Eagle on the bank of the Yukon River.

53—Numerous cutoffs have reduced the length of this route to 160 miles.

86—This route now consists of 5 miles suitable for wagon traffic and 5 miles of winter sled road.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized as follows:

11A—1¼ miles of new road (relocation), were constructed. This relocation was necessary to avoid steep side-hill section subject to slides.

11AA—Additional corduroy was placed in several sections and trail ditched. A number of small culverts were installed.

11E—The sled road was extended one-half mile, 10 culverts were installed and a cable tram erected over the Seventymile River at the mouth of Nugget Gulch. This tram provides a crossing for foot travellers.

11I—Several culverts were installed. A new tower was erected for the Steel Creek Ferry over the Fortymile River.

11L—All narrow sections were widened making this sled road easily passable for four-horse team and sled.

11Q—This aviation field was cleared of debris and leveled. The area available for landing is 350 by 900 feet.

PRESENT CONDITION AND NEEDS.

The summer pack trails and winter sled roads are the most important routes in this district. The summer pack trail from the American Summit through to Chicken should be maintained in a serviceable condition. The sled road and trail up the Seventymile River requires additional improvement.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	24	\$ 6,546.59	\$272.77
Sled Road	110	2,436.50	22.16
Trail	249	1,785.08	7.17
Totals	383	\$10,768.17	\$ 28.12

BETHEL SUB-DISTRICT.

Carl Lottsfeldt, Superintendent, Takotna.

This sub-district includes the lower Kuskokwim Valley and the Yukon-Kuskokwim portage routes. It contains no road projects. The important activities are located along the coast line or the Kuskokwim River so that summer transportation is by boat, supplemented by short trails. Winter transportation is by dog sled.

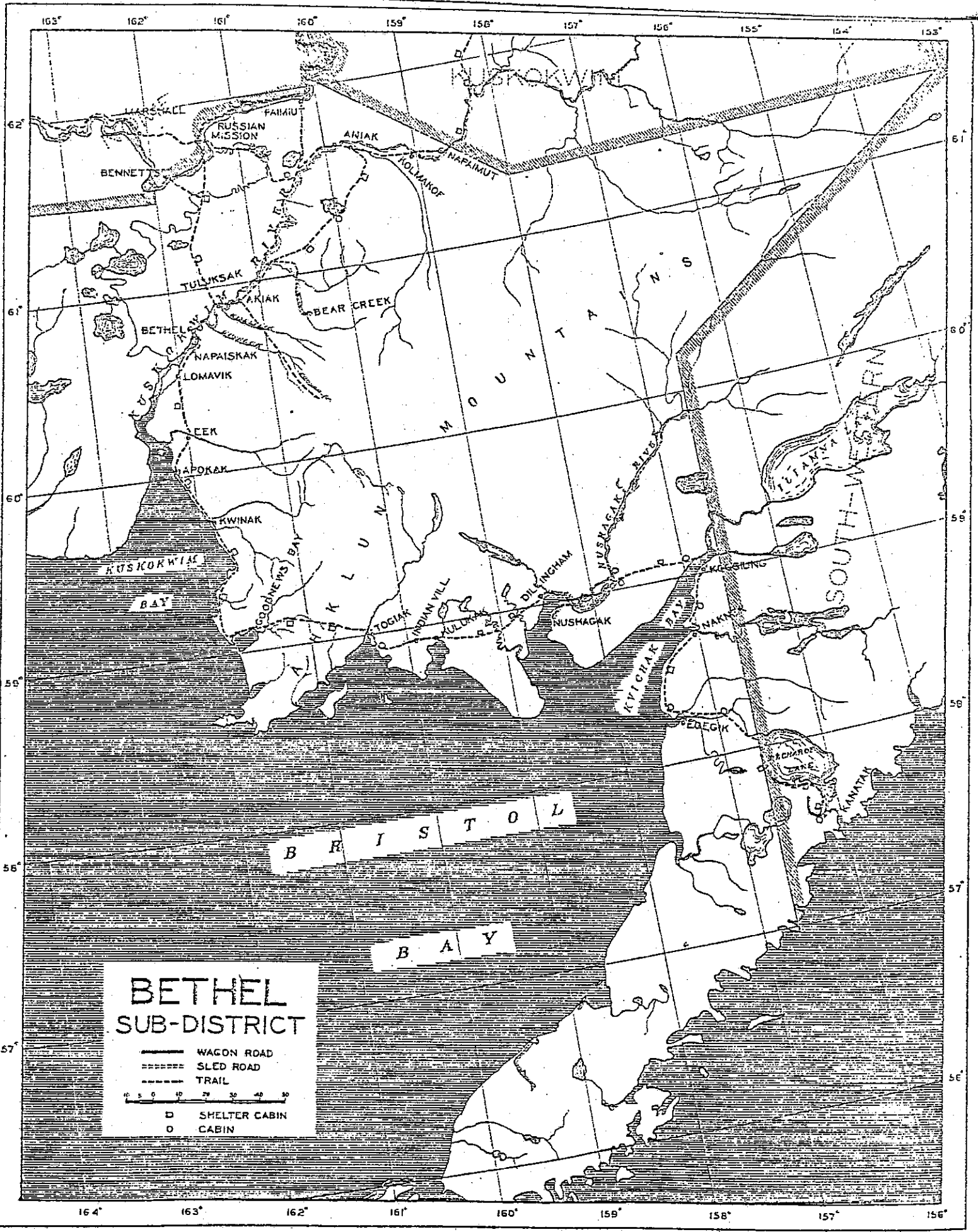
A much needed winter trail has been established extending from McGrath in the upper Kuskokwim Valley, via Aniak, Bethel, Goodnews Bay, Togiak, Dillingham and Naknek to Kanatak.

All projects in this sub-district were supported by the Alaska Road Commission exclusively, with the exception of shelter cabins which were supported by the Territory exclusively, and the Bear Creek sled road which was a cooperative project.

SUMMARY OF SUB-PROJECTS.

Sub-Project No.	Name of Sub-Project	Sled Road	Trail	Total Miles
90C*	Shelter Cabins-3d Division .....	....	....	....
90D*	Shelter Cabins-4th Division .....	....	....	....
92A	Bethel-Quinhagak .....	....	90	90
92E	Bethel-Tuluksak .....	....	44	44
92C	Aniak-Russian Mission .....	....	75	75
92D	Bennett's Cutoff .....	....	18	18
92E	Yukon-Kuskokwim Portage .....	....	120	120

153° 154° 155° 156° 157° 158° 159° 160° 161° 162° 163°



92F	Quinhagak-Goodnews Bay	60	60
92G	Goodnews Bay-Poglak	53	53
92H	Poglak-Nushagak	125	125
92I	Lewis Point-Naknek	86	86
92J	Naknek-Egegik	50	50
92K	Crooked Creek-Aniak	74	74
92L	Aniak-Tuluksak	60	60
92M	Akiak-Canyon Creek	45	45
92N	Tuluksak-Foothills	32	32
92O	Holy Cross-Kaltshak	56	56
92P	Upper Landing-Bear Creek	26	26
92Q	Totals	26	988
			1,014

(*)—Territorial Projects.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following changes and additions should be noted:

92B—Route name changed to Bethel-Tuluksak. This route is now 44 miles in length and includes 18 miles of trail on the Kuskokwim River between Akiak and Tuluksak.

92I—Route name changed to Lewis Point-Naknek, 86 miles trail.

92J—Distance should be 50 miles instead of 65.

92L—Route name changed to Crooked Creek-Aniak, 74 miles. This route now connects the Bethel system of trails with the Iditarod system by way of the Flat-Crooked Creek trail. The route is largely on the Kuskokwim River but improvements have been made on several important portages.

92N—This route extends from Akiak to the placer mines on Canyon Creek. The Kiseialik and Kushluk Rivers are crossed enroute by ferries.

92O—This route leads from the mouth of the Tuluksak River on Route 92M up the Tuluksak to the foothills where it joins the sled road from Upper Landing to Bear Creek.

92P—This winter trail connects Holy Cross on the Yukon River with the Bethel system of trails, striking the Kuskokwim River at Kaltshak. It follows closely the Palmnut portage.

92Q—This winter sled road extends from the upper landing on the Tuluksak River, the head of navigation to mining operations on Bear Creek.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized by routes as follows:

90C—Shelter Cabins 3rd Division.

Route	Location	Work Done	Cost
92J	24 miles from Nak-nek	Stove installed	\$ 30.00

90D—Shelter Cabins 4th Division.

Route	Location	Work Done	Cost
92A	29 miles from Bethel	12x14 cabin built, stove installed	\$ 800.00
92A	68 miles from Bethel	12x14 cabin built, stove installed	800.00
92F	16 miles from Quinhagak	Stove installed	15.00
92F	36 miles from Quinhagak	Stove installed	15.00
92O	Foothills, 32 miles from Tuluksak	12x14 cabin built, stove installed	324.00
			\$1,954.00

92Q—The route was located, selecting the best ground obtainable. Necessary clearing and grubbing were performed and short sections corduroyed. A bridge was constructed over the Tuluksak River at the foothills. The route is suitable for tractors and trailers in summer and for bob-sleds in winter.

PRESENT CONDITION AND NEEDS.

The trails within this sub-district have been considerably improved within the past few years and are now generally in fairly good condition. Staking and shelter should be inspected and repaired yearly.

Additional improvements should be made to the route up the Tuluksak River to the mining operations on Bear Creek.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Sled Road	26	\$3,698.00	\$142.23
Trail	716	1,678.24	2.20
Totals	742	\$5,276.24	\$ 7.72

VALDEZ DISTRICT.

T. H. Huddleston, Supt., Valdez.

This district embraces that portion of Alaska lying between 145° 10' and 147° west longitude and extending south from 61° 49' north latitude.

The principal work within this district is the maintenance and improvement of the Richardson Highway from Valdez, which is the northernmost open all-year-round port in Alaska, to Willow Creek, a distance of 92 miles. This section of the Richardson Highway passing through Keystone Canyon and across the summit

of the Coast Range is probably the most scenic route in Alaska and has required the most expensive construction.

The Richardson Highway is supported by the Alaska Road Commission exclusively. The Valdez Dyke is maintained at the expense of the City of Valdez. Other expenditures in this district were either upon cooperative projects or exclusively Territorial projects.

SUMMARY OF SUB-PROJECTS.

Sub-Project No.	Name of Sub-Project	Wagon Road Miles
4BA	Valdez-Ptarmigan Drop	33
4BB	Ptarmigan Drop-Ernestine	30
4C	Ernestine-Willow Creek	29
36	Valdez-Mineral Creek	8
36A*	Granby Road	5
36B*	South Second Street, Cordova	1/4
60	Valdez Dyke	.....
60A*	Valdez Aviation Field	.....
78	Valdez Depot	.....
Total		105 1/4

(*)—Territorial Projects.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. Routes 4BB and 4C will be found described therein under the Chitina District. The following changes and additions should be noted:

36—This road extends from the beach, about 2 miles west of Valdez, up Mineral Creek for a distance of 8 miles to an area of mining activity.

36B—This is an extension of South 2nd Street outside the city limits of Cordova.

60A—This aviation field is located in the northeast part of the townsite of Valdez and inside the dyke.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized by routes as follows:

4BA—Construction of the 2 1/4 mile relocation Mile 5 1/4 to 8 was completed and surfaced requiring the removal of 18,100 cu. yds. of earth, 2,147 cu. yds. rock and 7,848 cu. yds. gravel surfacing. 979 lin. ft. of pile trestle were built (renewal) and 43 metal culverts were installed.

4BB—18.7 miles were regraded and widened, 13,190 cu. yds. of gravel were placed as surfacing over 9 miles of road. 151 lin. ft.

of trestle bridges were built (renewal) and 22 metal culverts installed.

4C—4,464 cu. yds. of gravel surfacing were placed over 6 miles of road, 144 lin. ft. of trestle bridges were built (renewal) and 17 metal culverts installed.

36—The road was relocated between Miles $3\frac{1}{2}$ and $4\frac{1}{2}$, to avoid a section partly destroyed by high water. Three-fourths mile of road was constructed requiring the removal of 4,220 cu. yds. of loose rock and earth.

60—The dyke was strengthened at several weak points. Considerable work was necessary to hold the dyke during the high water period.

60A—An area 300 by 2300 feet was cleared of small brush and all large stones removed. The area was partially leveled with the grader and some filling was done. 849 cu. yds. were placed in filling holes. 20 tons of boulders removed and 3 small houses moved off the area. The field is 60% complete. The City of Valdez contributed \$300.00 in cash toward the work.

PRESENT CONDITION AND NEEDS.

The section of the Richardson Highway through this district is now in fair condition throughout the summer months for the operation of motor vehicles not heavier than the one-ton truck. From the early part of October to the latter part of June the road is closed to auto traffic by snow at Thompson Pass.

General improvements including widening, regrading, gravelling and construction of culverts, are required over the section Miles 23 to 50 in order to bring this portion of the highway up to the standard of other parts. Widening narrow sections in the canyon Miles 9 to 17 is necessary to place the roadbed on solid foundation. Several short relocations should be made to avoid bad glacier stream crossings.

The Mineral Creek road should be placed on the permanent location throughout.

DISTRIBUTION OF EXPENDITURES

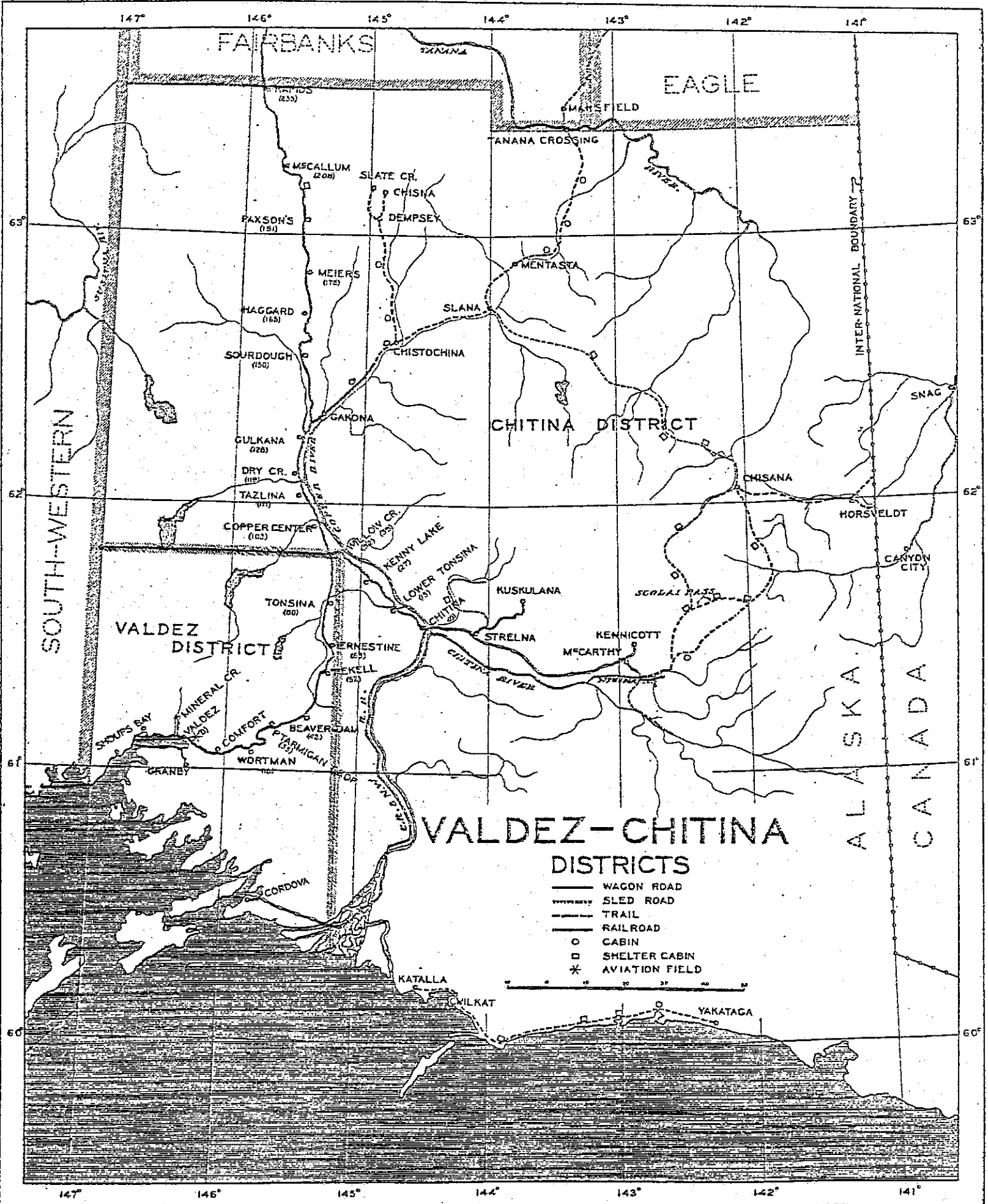
Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	100	\$163,976.98	\$1,639.77

CHITINA DISTRICT.

R. J. Shepard, Superintendent.

Frank Shipp, Asst. Superintendent.

This district includes that part of Alaska lying between the 141st and 147th meridians, west longitude, and south of $63^{\circ} 30'$ north



147° 146° 145° 144° 143° 142° 141°

FAIRBANKS

EAGLE

CHITINA DISTRICT

VALDEZ DISTRICT

VALDEZ-CHITINA DISTRICTS

ALASKA CANADA

SOUTH-WESTERN

INTERNATIONAL BOUNDARY

63°

63°

62°

62°

61°

61°

60°

60°

147° 146° 145° 144° 143° 142° 141°

latitude, with the exception of the area west of 145° 10' west longitude and south of 61° 49' north latitude which comprises the Valdez district.

The most important project within the district is the Richardson Highway extending from Chitina on the Copper River and Northwestern Railway up the Copper and Gulkana River Valleys and then across the Alaska Range through Isabelle Pass to Rapids on the Delta River.

The Richardson Highway and all other projects in this district are supported by the Alaska Road Commission exclusively with the exception of the Nizina-Chitina River trail which is supported by the Alaska Road Commission and the Territory jointly, and the Strelina-Kuskulana road and the Chitina-Native School road which are supported by the Territory exclusively.

SUMMARY OF SUB-PROJECTS.

Sub-Project No.	Name of Sub-Project	Wagon Road	Trail	Total Miles
6D	Chitina Depot .....	.....	.....	.....
6D*	Chitina-Native School	1	.....	1
6E	Chitina-Tonsina	15	.....	15
6A	Tonsina-Willow Creek	24	.....	24
4D	Willow Creek-Gulkana	36	.....	36
4E	Gulkana-Sourdough	21½	.....	21½
4F	Sourdough-Mile 168	18	.....	18
4G	Mile 168-Delta River	38	.....	38
4H1	Delta River-Rapids	25½	.....	25½
54	Nizina-Chisana Trail .....	.....	78	78
56A	Kavalla-Yakataga .....	.....	60	60
57	McCarthy-Nizina	14	.....	14
57A	Nizina River Bridge .....	.....	.....	.....
57B	Nizina-Chitina River .....	.....	24	24
57C	McCarthy-Kennebecott River	16	.....	16
57D	Chilitu Branch	1	.....	1
61*	Strelina-Kuskulana	12½	.....	12½
61A	Kotsina Trail .....	.....	30	30
61B*	Nugget Creek Extension	6	.....	6
65A	Gulkana-Chestochina	26	14	40
65B	Chestochina-Slate Creek .....	.....	40	40
65C	Chestochina-Tanana Crossing .....	.....	140	140
65G	Slana-Chisana .....	.....	97	97
90C*	Shelter Cabins, 3rd Division .....	.....	.....	.....
Totals		239	463	722

(*)—Territorial Projects.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. Routes 57, 57A, 54 and 56A will be found described therein under the Valdez district. The following changes and additions should be noted:

6D—This covers the headquarters buildings for this district.

57—This road extends from McCarthy across the Nizina River to the mines on Dan and Chilitu Creeks. Construction is in progress.

57A—This bridge has been completed. It consists of two wooden Howe Truss spans of 180 ft. resting on concrete piers and 1680 feet of pile trestle approach.

57B—This trail branches from the McCarthy-Nizina River road at the north end of the Nizina bridge and extends 14 miles over a low divide into the Chitina River serving prospectors in the upper Chitina River Valley.

57C—This route crosses the bar of the Kennicott River and connects farms on the right limit with McCarthy.

57D—This road branches from the main road 57A at Mile 13 and extends up Chititu Creek to placer operations.

61—This road leads from Strelina on the C. R. and N. W. Railroad, up the right limit of the Kuskulana River to Mile 11 where it crosses to the left limit and extends to Bergs Mill. A substantial bridge across the Kuskulana River built by the Territory gives access to the operations on the left limit.

61A—This trail branches from the Strelina-Kuskulana road at Mile 2½. Turning to the west it extends to the Kotsina River which it follows to copper prospects in the upper Kotsina Valley. Two crossings of the Kotsina River are necessary to avoid steep slopes and heavy slides.

61B—This road, originally carried as part of Route 61, Strelina-Kuskulana, branches from the latter route at its Mile 10 and extends to copper properties on Nugget Creek. It was built by one of the mining companies and has since been maintained by the Territory.

65A—The wagon road was extended during the past year so that this route now consists of 26 miles wagon road and 14 miles trail.

65G—This route leaves route 65C, 25 miles east of Chestochina, Crossing the Slana River it extends over a low divide into the Nabesna River Valley. This valley and another divide are crossed into the Chisana River Valley. Crossing this valley the Chisana post office is reached.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized as follows:

Richardson Highway, Chitina to Rapids:—15,025 cu. yds. of gravel were placed as surfacing over 13½ miles. 17 miles were regraded and widened to standard and 7 miles were lightly regraded.

360 lin. ft. of pile trestle were constructed and 675 lin. ft. of trestle filled, replacing 900 lin. ft. of old trestle and one 75-ft. span in Mile 15. 94 lin. ft. of frame bent trestle were constructed (renewal) and one 60-ft. span bridge was renewed in Mile 221. Piers in the Tazlina bridge were cribbed and rockfilled. 1,165 lin. ft. of dyke for stream control were constructed in Miles 222 and 223. A total of 223 corrugated metal culverts was placed.

6D—A garage 30x40 feet was constructed.

6E—One mile of road was constructed. The work consisted largely of machine grading to width of 12 feet.

57—The road was regraded and widened between Miles 4 and 9 and 300 cu. yds. of surfacing placed. One-half mile of temporary road was constructed between Mile 13 and Dan Creek in order to utilize the bars of the Nizina River. Three miles on permanent location were cleared 24 feet wide between these points. A bridge was constructed (renewal) over McCarthy Creek in Mile 1 consisting of one 60-ft. span and 56 lin. ft. of frame bent trestle approach.

57B—This trail was extended 10 miles up the Chitina River Valley.

57C—Boulders were removed from the fords across the Kennicott River and the route over the bar was cleared of large stones. Banks at the approaches to the fords were graded.

57D—One mile of road was constructed on this route. Heavy grubbing and frozen ground were encountered. The section of road constructed makes the operations on this creek accessible by wagon, using natural gravel bars beyond the end of construction.

61A—The trail was extended from Mile 17 to mining operations on Copper Creek, Mile 30. The route was cleared 14 feet wide and grubbed where necessary. One 160-ft. suspension span, suitable for use by pack-horses or double enders was erected over the Kotsina River in Mile 22.

65A—The road was extended six miles. The work included clearing 30 feet in width, grubbing 28 feet in width and grading 24 feet wide. 55 log culverts were placed and 147 lin. ft. of native timber stringer bridges constructed. The grade in Mile 3 was widened and 5,000 lin. ft. of lateral ditches were constructed between Miles 3 and 12.

90C—

Route	Location	Work Done	Cost
61A	198 miles from Strelina	Log cabin 15'x15' and log barn 15'x24' built	\$1,004.84

PRESENT CONDITIONS AND NEEDS.

The Richardson Highway from Chitina to Rapids is suitable for motor cars not larger than one ton trucks. Many stretches require gravelling to put them in first class condition. Several sections along the Delta River require widening to provide suitable roadway and the entire route requires proper maintenance to prevent deterioration.

The McCarthy-Nizina road should be further improved and some work done on present temporary roads to Dan and Chititu Creeks.

The trail into the Kotsina should be completed and the trail into the Chitina River Valley should be extended.

The road should be extended from Gulkana to Chestochina.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	233	\$246,057.79	\$1,056.04
Trail	68	4,929.38	72.48
Totals	301	\$250,987.17	\$ 833.84

FAIRBANKS DISTRICT.

Hawley W. Sterling, Supt., Fairbanks, Alaska.
Donald MacDonald, Asst. Supt.

This district embraces that portion of the Territory between the 144th and 148th meridian and between the Yukon River on the north and the Alaska Range on the south; also that territory north of the Yukon River from the 144th to the 150th meridian.

The most important project within this district is the Richardson Highway from Rapids to Fairbanks and its extension to Circle, construction of which is now in progress. The maintenance and improvement of the local road system around Fairbanks serving the mines and farms is also of extreme importance. A number of minor projects serve isolated mining communities.

The Richardson Highway is supported exclusively by the Alaska Road Commission; shelter cabins and aviation fields exclusively by the Territory. Of the remaining projects in this district, the through routes are supported by the Alaska Road Commission, less important projects by the Alaska Road Commission and the Territory jointly, and the purely local projects by the Territory exclusively.

FEDERAL PROJECTS.

SUMMARY.

Sub-Project No.	Name of Sub-Project	Wagon Road	Sled Road	Trail	Total Miles
4H2	Rapids-Grundler	48	.....	.....	48
4J	Grundler-Richardson	20½	.....	.....	20½
4J	Richardson-Salchaket	30	.....	.....	30
4JA	Lake Harding Road	1¾	.....	.....	1¾
4K	Salchaket-Fairbanks	40	.....	.....	40
4KA	Salcha Bridge .....	.....	.....	.....	.....
7A	Summit-Chatanika	8½	.....	.....	8½
7D	Ester Creek	9½	.....	.....	9½
7G	Fairbanks-Gilmore	13	.....	.....	13
7I	Gilmore-Summit	7	.....	.....	7
7J	Fairbanks-Chena Hot Springs	64	.....	.....	64
7JA	Chena River Branch	35	.....	.....	35
7JB*	Palmer Aviation Field .....	.....	.....	.....	.....
7K	Olmes-Livengood .....	.....	.....	54	54
7R	Goldstream-O'Connor Creek .....	.....	6	.....	6
7V	Wireless Road	¾	.....	.....	¾
7X*	Chena Hot Springs Aviation Field .....	.....	.....	.....	.....
7Y*	Fairbanks Aviation Field .....	.....	.....	.....	.....
15	Circle-Miller House	49	.....	.....	49
15C*	Circle Hot Springs Aviation Field .....	.....	.....	.....	.....
15D	Leech Cutoff	10	.....	.....	10
18	Chatanika-Miller House	87	.....	.....	87
16C	Chatanika-Miller House .....	.....	37	.....	37
23A	Snowshoe-Beaver .....	.....	.....	126	126
23B	Beaver-Caro	75	.....	.....	75
23C	Big Creek Trail	24	.....	.....	24
23D	Caro-Flat Creek	46	.....	.....	46
23E	Caro-Coldfoot	23	65	.....	78
23F*	Chandalar Aviation Field .....	.....	.....	.....	.....
31	Caribou Creek .....	.....	50	.....	50
53A	Circle-Pl. Yukon .....	.....	.....	67	67
53B*	Port Yukon Aviation Field .....	.....	.....	.....	.....
59	Fairbanks Bridge .....	.....	.....	.....	.....
59A	Fairbanks Depot .....	.....	.....	.....	.....
55F	Grundler-Tanana Crossing .....	.....	30	33	113
59D*	Shelter Cabins .....	.....	.....	.....	.....
Totals		389½	374	336	1,148½

(*)-Territorial Projects.

DESCRIPTION.

For detailed description see Part II, Annual Report, 1924. The following changes and descriptions of new routes will be noted:

4KA—This bridge over the Salcha River 40 miles south of Fairbanks on the Richardson Highway consists of one 180-foot steel Pratt truss span and 345 feet of pile trestle approach. It replaces the ferry formerly used at this point.

4JA—This is a new project extending east 1¾ miles from Mile 325, Richardson Highway, Route 4J, to Lake Harding where approximately twenty-five homasites have been taken up by people of Fairbanks.

7A—Mileage corrected after completion of relocation to 8½ miles.

7D—Correct mileage of this road is $9\frac{1}{2}$ miles.

7I—Correct mileage 7 miles.

7JA—This sled road branches from the Fairbanks-Chena Hot Springs route where the latter turns from the main valley of the Chena River to the Hot Springs. It extends up the Chena River Valley serving placer operations.

7JB—This new field is 200 feet wide and 800 feet long and is located on the left limit of the main fork of the Chena River, two miles above the mouth of Palmer Creek. It serves the Chena River placer district.

7X—This landing field is located on the left limit of Monument Creek near the Chena Hot Springs. It is laid out 300 by 800 feet.

7Y—Plans were formulated and survey made for the construction of a modern airport on Weeks Field adjacent to the town of Fairbanks. When completed the field will consist of two 400 by 2000 feet runways crossing in the center at an angle of 41 degrees.

15C—This landing field is situated $\frac{1}{2}$ mile east of the Circle Hot Springs. It is 400 feet by 1700 feet.

15D—This winter sled road connects the Circle Hot Springs with the Miller House-Circle Road at Mile 25 from Circle, providing a short cut for travel from Circle to the Hot Springs in winter.

16—Construction of the wagon road was extended to Miller House, 87 miles from Chatanika.

16C—This is the winter sled road between Chatanika and Miller House. While a wagon road has been constructed between these points, the sled road route is still necessary in winter and will be maintained.

23A—This route extends from the old Snowshoe Roadhouse, 14 miles from Olmes on the Olmes-Livengood trail, route 7K, to Beaver on the Yukon River.

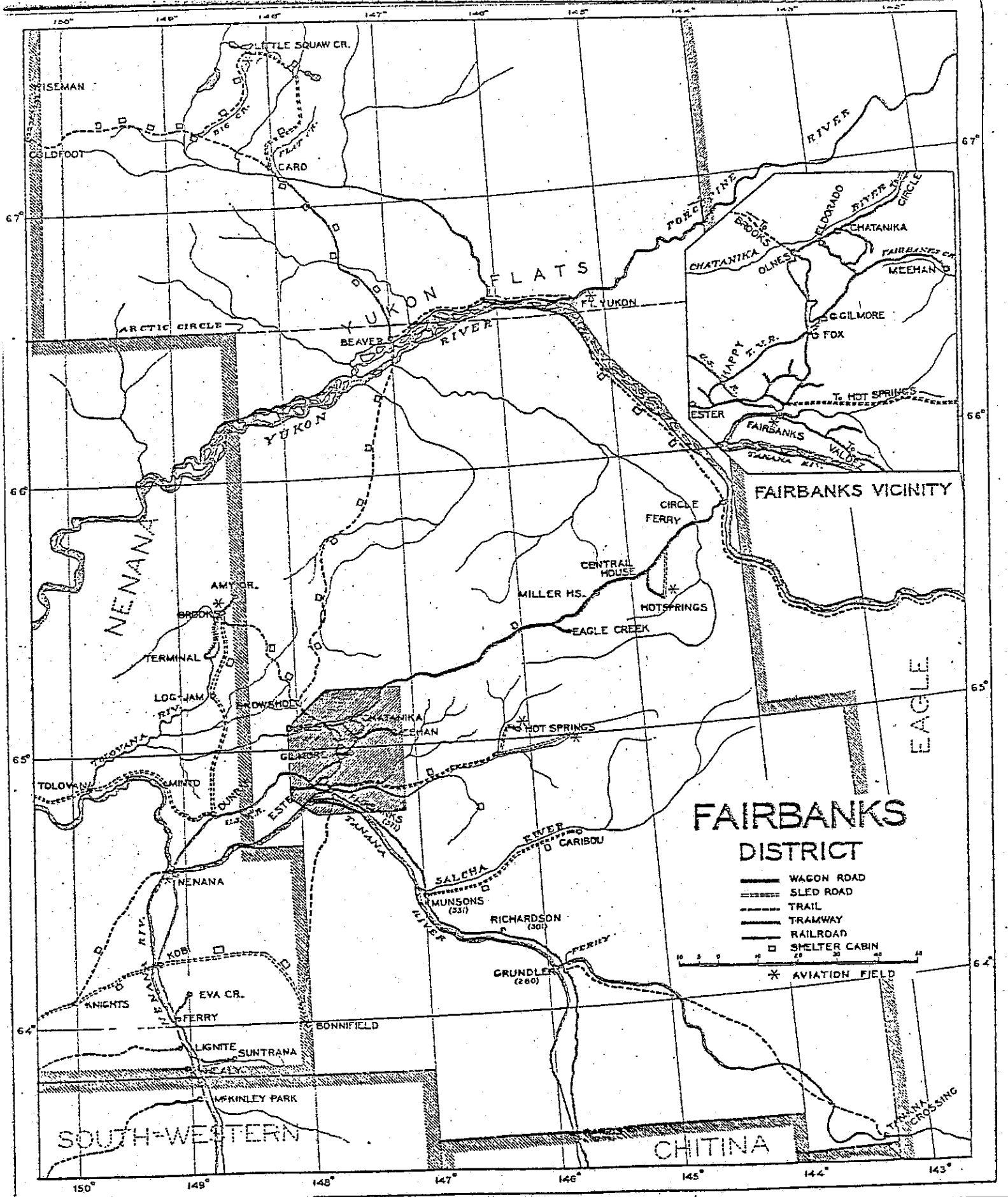
23C—This trail was improved to sled road standard and extended 4 miles. Classification now 24 miles sled road.

23E—Classification changed due to improvement of the route. This route now consists of 23 miles sled road and 55 miles of trail.

23F—This landing field is situated $\frac{1}{2}$ mile east of the Circle Hot Springs. It is 400 feet by 1700 feet.

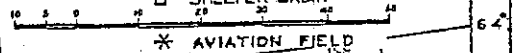
31—This sled road was extended 4 miles making the total length 50 miles.

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FAIRBANKS DISTRICT

- WAGON ROAD
- SLED ROAD
- TRAIL
- TRAMWAY
- RAILROAD
- SHELTER CABIN
- AVIATION FIELD



53A—This winter trail extends from Circle at the end of Route 15 to the trading center of Ft. Yukon. The route parallels the Yukon River on its left limit to within 16 miles of Ft. Yukon from which point it follows the river ice.

53B—This landing field is located $\frac{3}{4}$ miles from the village of Fort Yukon and is 300 feet by 1,400 feet.

59A—This comprises the district headquarters buildings, including a combination warehouse, office and warm storage 30'x100', garage and repair shop 30'x60', equipment sheds 20'x70', and 32'x137', oilhouse 20'x30' and a dog barn 20'x30'.

65F—30 miles of this trail were improved to sled road standard.

OPERATIONS DURING YEAR.

The important operations other than routine maintenance may be summarized by routes as follows:

Richardson Highway, Fairbanks to Rapids—14,119 cu. yds. of gravel were placed resulting in a heavy gravel surface over 8.11 miles and a light gravel surface over 8.14 miles. 4.25 miles of new road (relocation) were cleared, grubbed and graded. 21.07 miles of road were regraded and widened in preparation for surfacing. 312 metal culverts were installed, 46 linear feet of pile driven fir trestle bridge and 223 linear feet of frame bent trestle bridge were constructed, all being renewals except 93 linear feet of frame trestle on new road. 14,870 linear feet of lateral ditches were constructed in certain wet sections of the road. The north tower of the Ferry at Grundler was moved downstream 36 feet to place the cable at right angles to the direction of the current, which has shifted during the past few years. The old U. S. Signal Corps Telegraph line was maintained as a telephone line.

4JA—1 $\frac{3}{4}$ miles new road, 24 feet wide, were constructed and 10 metal culverts installed.

4KA—The revetment was repaired and strengthened. 100 lin. ft. were renewed. 1,592 cu. yds. of rock fill were placed.

7A—3 metal culverts were installed.

7D—3.66 miles of road were regraded and widened an average of 12 feet, 2.36 miles were surfaced with 1,455 cu. yds. of gravel and 38 metal culverts were installed.

7G—One frame bent fir trestle bridge 16 feet wide and 22 feet long was constructed over Engineer Creek as a replacement and 10 metal culverts were installed.

71—One frame mudsill fir bridge 12 feet wide and 8 feet long was constructed over a mining ditch and 6 metal culverts were installed.

7B—This landing field, size 200 by 300 feet, was built by contract on the left limit of the main fork of the Chena River, 2 miles above the mouth of Palmer Creek.

7Y—5,598 cu. yds. of earth were moved in levelling this field and 12 acres of clearing accomplished, completing approximately one-third of the field according to the plans outlined. The city of Fairbanks contributed \$1,944.95 cash towards the work.

15—2 miles of new road cleared 60 feet wide, grubbed, stripped and graded 10 feet wide were built on the hillside connecting with Route 16; 7.3 miles of old wagon road cleared 60 feet wide, grubbed and stripped preparatory to grading next year and an additional 23.9 miles were cleared 60 feet wide, completing the clearing to within 14 miles of Circle. 80 linear feet of pile driven native peeled timber trestle were completed except for laying stringers and decking. 390 cu. yds. of gravel were placed on .15 miles of road, 700 lin. ft. of corduroy were laid and 1 metal culvert was installed. All freight for next season was landed in log caches for storage purposes.

15D—This route was cleared and stumps grubbed where necessary providing for winter sled traffic.

16—22¼ miles of new road were graded, 17¼ miles being 14 feet wide or more and 5½ miles being 10 feet wide, including clearing, grubbing and stripping. This completes the major work on this road. In connection with the new work, 4,621 cu. yds. of gravel were placed on short sections requiring gravel, 14,490 lin. ft. of corduroy were laid, 286 metal culverts were installed, one large native timber log culvert built and 273 lin. ft. of frame bent fir trestle bridges constructed. The section of the old road up to Mile 56, (principally in Miles 0 to 13), received 23,000 cu. yds. of gravel surfacing.

23C—24 miles of this trail were improved to sled road standard; work consisted of widening, straightening, grading pitches and tripping.

23D—6½ miles were cleared 10 feet wide and 1¼ miles were grubbed 10 feet wide.

23E—An additional mile was improved to sled road standard, work consisting of clearing and grubbing.

23F—A triangular addition on the north side of this field, consisting of 1.60 acres, was made this season. Local citizens cooperated with labor to the value of \$615.00.

31—4 miles of new sled road were constructed extending this project to new operations up the Salcha River.

59A—An addition, size 22 by 36 feet, was put on the garage for the storage of car parts. All buildings were painted.

90D—Shelter Cabins, 4th Division.

Route	Location	Work Done	Cost
7JC	15 miles from Colorado R. H.	Installed stove	\$ 17.57
7K	Snowshoe, Globe and Tatalina	Remaining bills for roofs on 3 cabins	91.55
23B	24 miles from Beaver	12x14 cabin partly complete	224.91
23B	46 miles from Beaver	13x15 cabin built; installed stove	285.50
23B	56 miles from Beaver	13x15 cabin built; installed stove	442.47
23D	16 miles from Caro	13x15 cabin built; installed stove	258.89
65F	Mile 80, Sam Creek	13x15 cabin built; installed stove	542.98
			<u>\$1,863.37</u>

PRESENT CONDITION AND NEEDS.

Richardson Highway. This road is entirely suitable for automobile travel only in dry weather, and is passable in wet weather. Several short relocations are necessary to eliminate excessive grades, and a few short sections require additional surfacing.

Fairbanks Local Roads. Increased motor traffic makes necessary the continued improvement of these roads to provide good drainage and some kind of surface.

Chatanika-Circle. Construction of this road should be continued to automobile standard and additional surfacing provided. Forty-eight miles of old wagon road require rehabilitation and surfacing to bring it up to automobile standard throughout.

Roads and trails in various isolated mining communities require improvement and must be maintained each year.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	389¼	\$355,256.38	\$912.08
Sled Road	182	13,551.19	74.46
Trail	385	2,371.99	6.16
Totals	956¼	\$371,179.56	\$388.06

TERRITORIAL PROJECTS.

Territorial Road Commission, Fourth Division.
 Hawley W. Sterling, Chairman and Secretary.
 Jake Mutchler, Member. Chris Abel, Member.

SUMMARY.

Sub-Project No.	Name of Sub-Project	Wagon Road Miles
7AA	Cleary Creek Road	2
7B	Fox-Olmes	13
7C	Summit-Fairbanks Creek	13
7CA	Lower Fish Creek	2¼
7DA	College Spur	½
7DB	Ester Dome Road	9
7DC	St. Patrick's-Happy	3¾
7DD	Ester-Beegler	½
7GA	Lazelle Road	2¼
7H	Little Eldorado Creek	6
7N	Farmers-Birch Hill	8¼
7NA	Isabelle Creek	1¾
7NB	Ballaine-Riekert	1
7S	Gruehl Bridge	5
7T	Farmers-Chena Slough	9
15A	Central House-Circle Hot Springs	¾
15E	Miller House Spur	¾
16A	U. S. Creek Spur	1
16B	Eagle Creek Spur	1½
38L	Ruby Aviation Field Road	1¾
63D	Brooks Aviation Field Road	1¾
	Total	74¼

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following changes will be noted:

Route 7AA—This route was a portion of road formerly included in Route 7A, Summit-Chatanika, which was abandoned in favor of a new location. It serves mining operations along Cleary Creek above the town of Cleary.

7CA—This new road, extending from the end of the road on Fish Creek built by the Fish Creek Dredging Co., follows the sidehill on the left limit of Fish Creek for 1¼ miles and there turns to the right, crosses Fish Creek and goes up the left limit of Last Chance Creek, a tributary of Fish Creek, for 1 mile; total length of road 2¼ miles. Road serves hydraulic mining operators on Last Chance Creek.

7DB—This route branches from the Ester Creek Road, Route 7D, at Mile 11 and extends 2 miles to quartz mines on Ester Dome.

7DC—This road branches from the Ester Dome road 1½ miles from the main Fairbanks-Ester road and extends 3¾ miles across the head of St. Patrick's Creek and Happy Creek to within ¼ mile of Happy Station on The Alaska Railroad.

7DD—This road branches from the Fairbanks-Ester road ½ mile above the town of Ester and extends ½ mile to a stamp mill.

7GA—Correct mileage is 2¼.

7N—Correct mileage is 8¼.

7NA—Correct mileage is 1¾.

7NB—This road branches from the Farmers-Birch Hill road near Ballaine's farm and extends north 1¼ miles serving farm lands.

7T—This road extended ½ mile. Correct length is 5 miles.

15E—This road branches from the Chatanika-Circle Road at Mile 87.5 and extends to Miller House.

16A—This short spur branches from the Chatanika-Miller House road in Mile 30 near the crossing of U. S. Creek and extends ¼ mile to the top of the ridge.

16B—This road branches from Mile 77 of the Chatanika-Circle road and extends 1 mile to hydraulic operations on Eagle Creek.

38L—This road branches from the Ruby-Long road in Mile 2 and extends 1¼ miles east to the Ruby aviation field.

63D—This road connects the village of Brooks with the airplane landing field; distance 1¾ miles.

OPERATIONS DURING YEAR.

Work the past season consisted chiefly of maintenance on the Fairbanks local roads.

The following new work was accomplished:

7CA—This new road was graded 8 to 10 feet wide, except for 1600 lin. ft. of swampy ground. Corduroy for this section was cut and landed at the site by the operators on Last Chance Creek. It will be placed and covered next season.

7DC—This road was extended 1¼ miles to within ¼ mile of Happy Station on The Alaska Railroad. The new road was cleared, grubbed and graded 30 feet wide. The 2½ miles previously constructed were widened to an average width of 20 feet and gravel surfacing was placed on sections where needed.

7GA—325 cu. yds. of additional surfacing were placed over ½ mile of this road.

7N—1,929 cu. yds. of surfacing material were placed over 2 miles of road. 5 metal culverts were installed.

7S—The hand rail and guard rail on this bridge were painted.

7T—Additional grubbing and grading to full width was performed.

15E—A new road was cleared, grubbed and graded 10 feet wide for $\frac{1}{4}$ mile and a 40-foot post bent trestle erected over Mastodon Creek.

16B—This road was graded 8 to 10 feet wide along a barren hillside. Hand grading on the location was performed by the Eagle Creek Hydraulic Mining Co. as a preliminary for machine grader work.

PRESENT CONDITION AND NEEDS.

A large part of the roads included in this group are of graded earth type serving small farm areas or mines. These roads are only suitable for motor traffic in dry weather, but need only yearly maintenance to keep them in their present condition. In some instances traffic is becoming so heavy that a gravel surface will have to be provided.

Further improvements should be made to several roads in this group to bring them up to the standard required. Extensions should be provided as needed.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	66 $\frac{1}{2}$	\$17,515.41	\$267.41

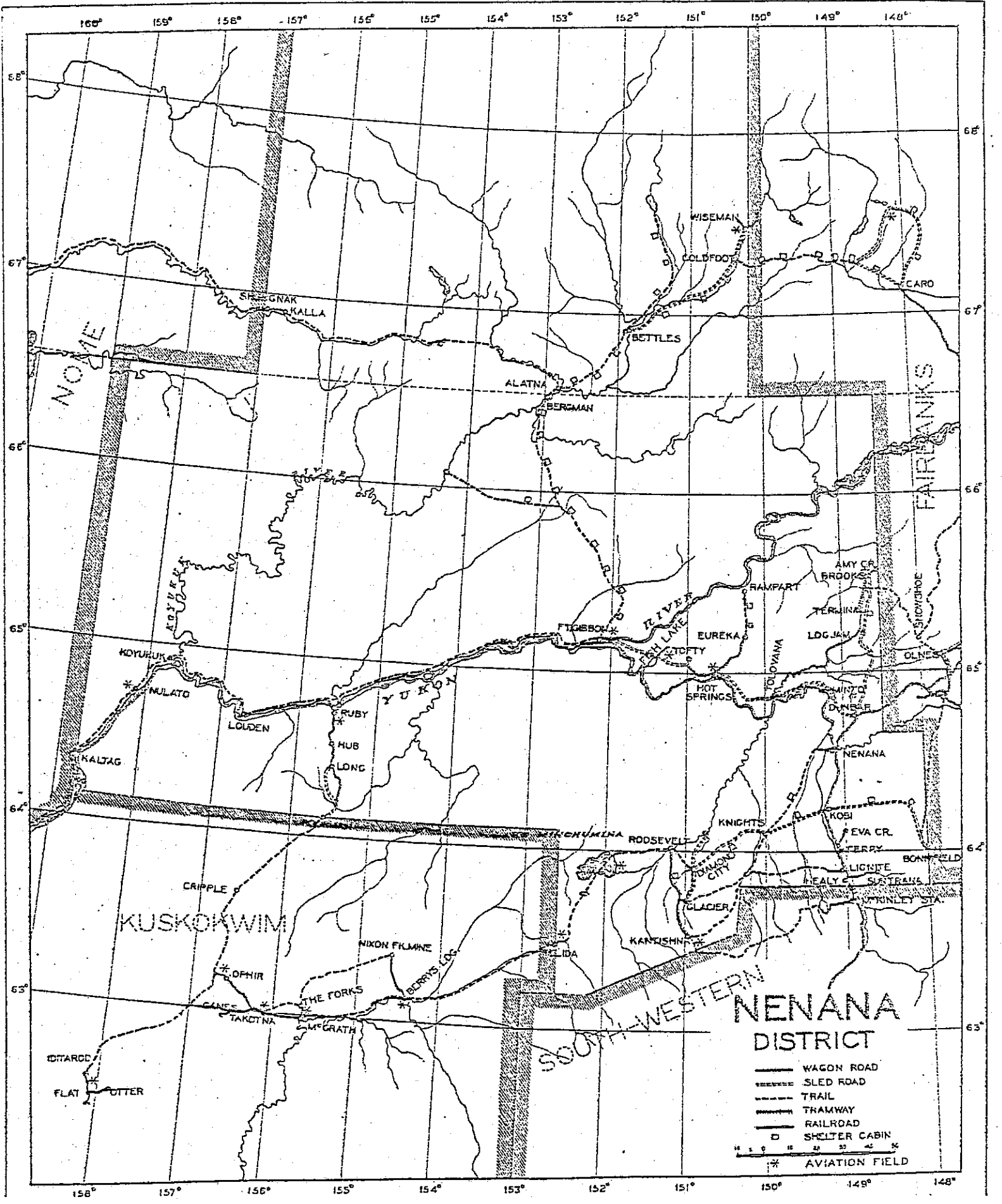
NENANA SUB-DISTRICT.

Hawley W. Sterling, Superintendent, Fairbanks.

H. G. Haslem, Asst. Superintendent, Fairbanks.

This sub-district is a part of the Fairbanks district and is under the supervision of that office. It is roughly described as extending south from the Arctic Ocean between 150° 11' and 157° west longitude as far as the Arctic Circle, thence south between 148° 30' and 158° 41' west longitude to the northern boundary of Mt. McKinley National Park. It is more accurately shown on the accompanying map. It includes the important mining districts of the Kantishna, Livengood, Hot Springs and Bonnifield.

This area is well served so far as summer transportation is concerned by a number of navigable rivers, the most important of which are the Yukon, Tanana, Koyukuk, Tolovana and Kantishna. These rivers and the Alaska Railroad have made the construction of long roads unnecessary. A number of short roads have been built connecting important mining centers with navigable water or the railroad.



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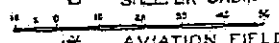
FAIRBANKS

KUSKOKWIM

SOUTH-WESTERN

NENANA DISTRICT

- WAGON ROAD
- SLED ROAD
- - - TRAIL
- TRAMWAY
- RAILROAD
- SHELTER CABIN
- * AVIATION FIELD



160° 159° 158° 157° 156° 155° 154° 153° 152° 151° 150° 149° 148°

68°
67°
66°
65°
64°
63°

WISEMAN
COLDFOOT
CARD
BETTLES
ALATNA
BERMAN
KALTA
SPEGNAK
KALLA
YUKON
KOHUKA
MULATO
LOLDEN
RUBY
HUB
LONG
EUREKA
RAMPART
AMY CR. BROOKS
TERMINAL
LOGJAW
HOT SPRINGS
TOUVANA
DINEER
NENANA
KNIGHTS
ROOSEVELT
KOSI
EVA CR.
TERRY
GLACIER
KANSISHN
BOANFIELD
LIGNITE
HEALY C.
SUTTRANS
FRINLEY STA.
NIXON FILMINE
BERRYS LOG
THE FORKS
MCGRATH
TAKOTNA
CANES
OPHIR
FLAT
OTTER

The district has an extensive system of winter sled roads and trails, the most important of which are the route from Dunbar through Fort Gibbon to Kaltag which carries the winter traffic to the Seward Peninsula and the route from Kobi through Roosevelt to Telida and McGrath which carries the winter traffic to the Kuskokwim district.

Shelter cabins, aviation fields and telephone lines are supported exclusively by the Territory. Of the remaining projects in this district, the through routes are supported by the Alaska Road Commission and less important projects by the Alaska Road Commission and the Territory jointly.

SUMMARY.

Sub-Project No.	Name of Sub-Project	Wagon Road	Sled Road	Trail	Total Miles
5A	Dunbar-Ft. Gibbon	2	109	....	111
5B	Nenana-Campbells .....	....	31	....	31
5C*	Fish Lake-American Creek	4½	....	....	4½
5D*	American Creek Aviation Field.....	....	....	....	....
5E*	Tanana Aviation Field .....	....	....	....	....
9	Rampart-Eureka	4½	23	....	27½
17	Ft. Gibbon-Kaltag .....	....	....	257	257
17C*	Nulato Aviation Field .....	....	....	....	....
17D*	Tanana-Koyukuk Station Telephone Line .....	....	....	....	....
22	Hot Springs-Sullivan Creek	10	....	....	10
29	Ft. Gibbon-Bettles .....	....	....	156	156
29A	Bettles-Coldfoot .....	....	52½	....	52½
29C	Mile 70-Hughes .....	....	....	60	60
29D	Wild River Trail .....	....	....	67	67
30	Hot Springs Landing-Eureka	24	....	....	24
30A	Hot Springs-Tofty .....	....	16	....	16
30B*	Manley Hot Springs Aviation Field .....	....	....	....	....
38A	Ruby-Long	28½	....	....	28½
38E	Long-Poorman (summer)	18½	....	....	18½
38EE	Long-Poorman (winter) .....	....	29	....	29
38K*	Ruby Aviation Field .....	....	....	....	....
46	Kobi-Eureka .....	....	95	....	95
46A	Roosevelt-Kantishna	6	28	....	34
46H	Lignite-Kantishna .....	....	....	35	35
46C	Nenana-Knight's Roadhouse .....	....	....	42	42
46E	Diamond-Telida .....	....	....	90	90
46P	Nenana Cemetery	2½	....	....	2½
46G	Kobi-Bonfield .....	....	45	....	45
46H*	Lake Minchumina Aviation Field.....	....	....	....	....
46J*	Kantishna Aviation Field .....	....	....	....	....
46K*	Telida Aviation Field .....	....	....	....	....
46L	Toklat Reconnaissance .....	....	....	....	....
46M*	Nenana Aviation Field .....	....	....	....	....
46N*	Knight's Aviation Field .....	....	....	....	....
47	Coldfoot-Wiseman .....	....	11	....	11
47A*	Wiseman Aviation Field .....	....	....	....	....
47B	Nolan Branch	2½	3	....	5½
47C	Wiseman-Hammond	6	....	....	6
63	Dunbar-Brooks .....	....	63	....	63
63B*	Brooks-Amy Creek	4	....	....	4
63C	Brooks Tram	13	....	....	13
63E*	Livengood Aviation Field .....	....	....	....	....
88	Ferry-Eva Creek	11½	....	....	11½
90D*	Shelter Cabins .....	....	....	....	....
Totals		137½	505½	747	1,390¼

(*)—Territorial project.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following changes and additions should be noted:

5A—Reclassified, 2 miles wagon road, 109 miles sled road. 4 miles of this route common to Route 22 have been dropped.

5B—This sled road extends from Nenana down the right limit of the Tanana River to Campbell's Roadhouse where it joins the Dunbar-Ft. Gibbon route. It serves as an alternate route to that from Dunbar.

5C—This road extends from the landing at Fish Lake, 4¼ miles up American Creek, serving placer operations. The Fish Lake landing is reached by gas boat from the Tanana River up Fish Creek.

5D—This landing field, 250 by 300 feet is located on the right limit of American Creek and near the road, Route 5C. It is adjacent to the camp of the American Creek Dredging Co. This company contributed labor on the field amounting to \$390.00.

5E—This landing field, 250 by 800 feet, is situated on the north bank of the Tanana River one mile east of the town of Tanana.

9—Reclassified, 4½ miles wagon road, 23 miles sled road.

17C—This landing field, 225 by 950 feet, is partly within the village of Nulato, on the north bank of the Yukon River.

17D—This is a section of the abandoned Signal Corps telegraph line between Tanana and Koyukuk Station, now maintained by funds contributed by the Territory of Alaska.

22—Mileage corrected to 10 miles wagon road.

29—Mileage corrected to 156 miles trail.

29C—This is a winter dog sled trail extending from Mile 70 on the Ft. Gibbon-Bettles trail to the village of Hughes on the Koyukuk River. It serves as an outlet for miners and prospectors on the lower Koyukuk.

29D—This trail extends from Bettles up the right limit of the Koyukuk River to the mouth of Wild River, thence up the Wild River Valley.

30A—This is an alternate route to Route 22 between Hot Springs and Tofty and is used by the mail carriers in early fall and late spring when it is not possible to travel the ice of Hot Springs Slough.

30B—This landing field, 375 by 750 feet, is located on the right limit of Hot Springs Slough, ¾ of a mile above the village of Hot Springs and adjacent to the wagon road, Route 30.

38E—This wagon road is now under construction. 18½ miles have been completed between Long and the Solatna River. The road will eventually be extended to Poorman.

38K—This airplane landing field is situated 1¼ miles southeast of the town of Ruby. The field is 1,500 feet long and varies from 350 feet wide at one end to 700 feet wide at the other.

46A—This route formerly classified as a wagon road is now reclassified as 6 miles wagon road and 28 miles sled road. While it is possible during dry seasons to get over the entire route with a lightly loaded buckboard, in wet weather portions of the route are impassable for wheeled traffic.

46F—This road connects the town of Nenana with its cemetery and serves several farms enroute. It is suitable for wagon and light automobile traffic.

46G—This sled road gives access from The Alaska Railroad at Kobl to the Ronnifield placer district. It also serves as a pack and foot trail for summer use.

46H—This airplane landing field is situated 2½ miles south of the roadhouse at the east end of Lake Minchumina. It is 1,500 feet long and averages 600 feet wide.

46J—This landing field, 200 by 600 feet is located on the left limit of Moose Creek between the creek and Wonder Lake.

46K—This landing field, 250 by 800 feet, is located on the east bank of the McKinley Fork of the Kuskokwim River 1,000 feet east of the roadhouse at New Tetlda.

46M—This landing field is situated at the southeast corner of the Nenana townsite. The average dimensions of the field are 350 feet wide by 850 feet long.

47—Reclassified, 11 miles sled road, no wagon road.

47A—This airplane landing field is situated near the village of Wiseman. It is 350 feet wide and 1,400 feet long.

47B—This route branches from the Wiseman-Hammond Road one mile from the village of Wiseman and extends to the mining activities on Nolan Creek. It consists of 2½ miles of wagon road and 3 miles of sled road.

47C—This route extends from Wiseman to the placer diggings on Hammond River. The route has been improved so that wagons may be used throughout.

63C—This tramway was purchased by the Territory on June 11, 1924, and has since been maintained and operated by this Commission. The freight rates have been reduced from \$80.00 to \$20.00 per ton.

63E—This airplane landing field is situated back of and adjacent to the village of Brooks. The field is 200 by 800 feet.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized by routes as follows:

5A—2 miles of this route were improved to wagon road standard between the town of Tanana and the Mission.

5C—This route was further improved. $3\frac{1}{2}$ miles were machine graded to an average width of 20 feet, 2,407 lin. ft. of corduroy were placed and covered and 13 timber culverts installed. The American Creek Dredging Company handled the work without charge for superintendence and furnished all equipment as well as supplying additional labor.

5E—This field was cleared, grubbed, stripped and partially leveled. The maximum width is 250 feet and the maximum length 500 feet.

9—554 linear feet of lightly constructed frame bent, native peeled timber trestle bridges were built as renewals.

17C—This field was completed, increasing its size by .37 acres and making the total acreage 4.03. Its longest dimension is 950 feet and its greatest width 225 feet. Work involved moving 1,000 cu. yds. earth and a considerable area had to be cleared.

17D—The entire line was covered between Tanana and Galena, a distance of 194 miles. Three miles of new line were constructed, 350 poles and tripods erected and 21 breaks repaired. Over the larger part of the line only temporary repairs were made.

29D—An old trail was rehabilitated. The trail was cleared of brush and widened.

38E—Work on this road consisted principally of covering old corduroy, grading and laying new corduroy. 10,819 linear feet of corduroy were laid, 1.85 miles covered with 4,067 cu. yds. of earth and gravel, 80 miles were graded and 32 native timber culverts constructed.

46E—Four miles of new trail (relocation) were constructed between Miles 78 and 82. One 20-foot native timber bridge was constructed at Mile 82.

46F—232 cu. yds. of gravel were placed as surfacing over 0.4 miles.

46L—A reconnaissance was made over the route from Knights up the Toklat River for a sled road to serve prospective mineral development.

46M—A large part of this field is on the old ball park. An addition on the east end of 200 by 500 feet was plowed and leveled. A cabin located in this section was removed and the City of Nenana acquired title to the ground. The citizens cooperated with labor valued at \$180.00.

46N—An investigation was made of proposed sites for an emergency landing field near Knight's Roadhouse. No site was found upon which a suitable landing field could be built at a reasonable cost.

47B— $1\frac{1}{2}$ miles were improved to wagon road standard by hand grading.

63C—2 miles of track were renewed, consisting of small sections where most needed.

63E—A new field was located adjacent to and on the high ground back of the town of Brooks. The field was grubbed, stripped, plowed and leveled. Local citizens cooperated with labor valued at \$400.00.

90D—Shelter Cabins, 4th Division.

No. Route	Location	Work Done	Cost
9	21 miles from Rampart	Stove installed	\$ 20.26
9	10 $\frac{1}{2}$ miles from Rampart	Cabin built, stove installed	200.00
29	22 miles from Tanana	Stove installed	20.71
29	33 miles from Tanana	Stove installed	20.71
29	45 miles from Tanana	Stove installed	20.71
29	70 miles from Tanana	Stove installed	20.71
29	80 miles from Tanana	Stove installed	23.80
29	134 miles from Tanana	Stove installed	23.80
29	140 miles from Tanana	Stove installed	23.81
29	148 miles from Tanana	Stove installed	23.81
29A	16 miles from Bettles	12'x12' cabin built, stove installed	208.40
29A	41 miles from Bettles	12'x14' cabin built, stove installed	227.21

29C	9 miles from junction with Route 29	Remaining bills for cabin	75.00
29D	30 miles from Bettles	12'x14' cabin built, stove installed	223.76
29D	40 miles from Bettles	12'x14' cabin built, stove installed	223.78
4C	43 miles from Kobl	Stove pipe installed	.86
46G	17 miles from Kobl	Stove installed	13.25
46G	30½ miles from Kobl	Stove installed	18.26
46L	12 miles from Knights	12'x14' cabin built	100.00
46L	18 miles from Knights	12'x14' cabin built	100.00
46L	26 miles from Knights	12'x14' cabin built	100.00
46L	38 miles from Knights	12'x14' cabin built	189.96
63	50 miles from Dunbar	12'x14' cabin built, stove installed	298.29
Total			\$2,182.09

PRESENT CONDITION AND NEEDS.

The roads in this district were built for wagon traffic for which they are, in general, adequate. The road from Long southward should be extended to Poorman. The Brooks tram requires further improvement. The road system around Wiseman should be completed in view of the present activities. Winter sled roads and trails must be maintained and improved where required. New winter routes should be opened where development and traffic warrant.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	108¾	\$48,161.98	\$442.77
Tramway	13	12,263.00	943.33
Sled Road	387½	3,724.92	9.62
Trail	662	3,072.27	4.64
Totals	1171¼	\$67,213.27	\$ 57.39

SOUTHWESTERN DISTRICT.

M. C. Edmunds, Superintendent, Anchorage, Alaska.

Anton Eide, Assistant Superintendent, Seward, Alaska.

Fred J. Spach, Junior Engineer, Anchorage, Alaska.

This district includes the Kenai Peninsula, the northern part of the Alaska Peninsula, Kodiak Island, and all the territory tributary to the Alaska Railroad as far north as the northern boundary of Mt. McKinley National Park.

The Alaska Railroad, the Yentna River, and Cook Inlet and other arms of the Gulf of Alaska provide through transportation for

this region so that only short roads are required. A very excellent system of roads serving the farms and mines of that vicinity is centered about Wasilla while a good, though less extensive system, centers about Anchorage.

An especial effort has been made within this district to furnish adequate roads, sled roads or trails to all points of development in order that traffic may be developed for The Alaska Railroad.

The most important road within the district is that now being constructed in cooperation with the National Park Service in Mt. McKinley National Park.

Shelter cabins and aviation fields are supported exclusively by the Territory. Of the remaining projects in this district, the through routes are supported by the Alaska Road Commission, less important projects by the Alaska Road Commission and the Territory jointly, and the purely local projects by the Territory exclusively.

FEDERAL PROJECTS.

SUMMARY.

Sub-Project No.	Name of Sub-Project	Wagon Road	Sled Road	Trail	Total Miles
10D*	Seward Aviation Field	.....	.....	.....	.....
20B	Susitna-Rainy Pass	.....	.....	127	127
20H	Nancy-Susitna	.....	.....	22	22
20J	Susitna-Tyonok	.....	.....	10	10
20K*	Susitna Aviation Field	.....	.....	.....	.....
20L*	Skwentna Aviation Field	.....	.....	.....	.....
35A	Archangel Extension	5¼	.....	.....	5¼
35AA	Sherry Branch	.....	.....	½	½
35AB	Fairangel Extension	¼	.....	.....	¼
35B	Palmer-Fishhook	8¼	.....	.....	8¼
35D	Willow Creek Extension	12½	.....	.....	12½
35E	Wasilla-Fishhook	16	.....	.....	16
35F	Wasilla-Iduk	14½	.....	.....	14½
35H	Wasilla-Finger Lake-Palmer	12	.....	.....	12
35J	Wasilla-Matanaska	7¾	.....	.....	7¾
35K	Matanuska Trunk Road	8	.....	.....	8
35N	Houston-Willow Creek	.....	30	.....	30
35O	Fishhook-Goldmint	.....	6	.....	6
35S	Moose Creek Trail	.....	.....	12	12
35T	Werner Connection	.....	.....	1¾	1¾
35U*	Moose Creek Aviation Field	.....	.....	.....	.....
35V*	Fishhook Aviation Field	.....	.....	.....	.....
35W*	Wasilla Aviation Field	.....	.....	.....	.....
40D	McKinley Park Road	34	.....	53	87
48	Ilamna Bay-Ilamna Lake	.....	.....	12	12
51	Talkeetna-Cache Creek	23¾	18	.....	41¾
51A	Cache Creek Trail	.....	.....	11¼	11¼
51B	Peters Creek Trail	.....	.....	14¾	14¾
51C	Yentna-Mills Creek	.....	.....	19	19
51D	Mile 32-Spruce Creek	.....	7¼	.....	7¼
51E	Hills Creek-Cache Creek	.....	23	.....	23
51F*	Cache Creek Aviation Field	.....	.....	.....	.....
55	Kenai-Russian River	.....	60	.....	60
55A*	Kenai Aviation Field	.....	.....	.....	.....
75	Anchorage Loop	19½	.....	.....	19½
76D	Anchorage Warehouse	.....	.....	.....	.....
76E	McDonald Branch	1¼	.....	.....	1¼
76H*	Seward Aviation Field	.....	.....	.....	.....
7E	Cantwell-Valdez Creek	.....	66	.....	66

79	Seward Warehouse .....	.....	.....	.....
90C*	Shelter Cabins, 3rd Div. ....	.....	.....	.....
90D*	Shelter Cabins, 4th Div. ....	.....	.....	.....
92K	Igegik-Ikanatak .....	.....	85	86
93	Chulitna Trail .....	.....	3	3
93A	Bull River Trail .....	.....	12	12
93H	Indian River	9	.....	9
93C*	Curry Aviation Field .....	.....	.....	.....
94	Kodiak-Abbotts	6	.....	6
95	Kanatak-Bocharof Lake	8 1/4	.....	8 3/4
95	Chickaloon-King River .....	.....	6 1/2	6 1/4
96A	Chickaloon Cable .....	.....	.....	.....
96B	Chickaloon-Nelchina .....	.....	20	20
93	Homer Split	6 1/2	.....	8 1/2
95A*	Nuka Bay Trail .....	.....	1 1/4	1 1/4
	Totals	187 1/2	192	426
				305 1/4

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following changes and additions should be noted:

10D—This landing field is 200 by 1000 feet situated on the grounds of the radio station 1 1/2 miles from Seward.

20J—This winter trail route follows the right limit of the Susitna River and the north shore of Cook Inlet connecting the villages of Susitna and Tyonek. Only a portion of the route was improved during the past season.

20K—This landing field is located near Susitna Station on the Susitna River at the head of Cook Inlet.

20L—This landing field is located on an old river bar of the Skwentna River 6 miles above Skwentna Roadhouse. It is laid out 200 by 1000 feet.

35AA—Leaving the Archangel Extension road, Route 35A, at Mile 5 this trail extends up Archangel Creek one-half mile to a point beyond the Fern Mine.

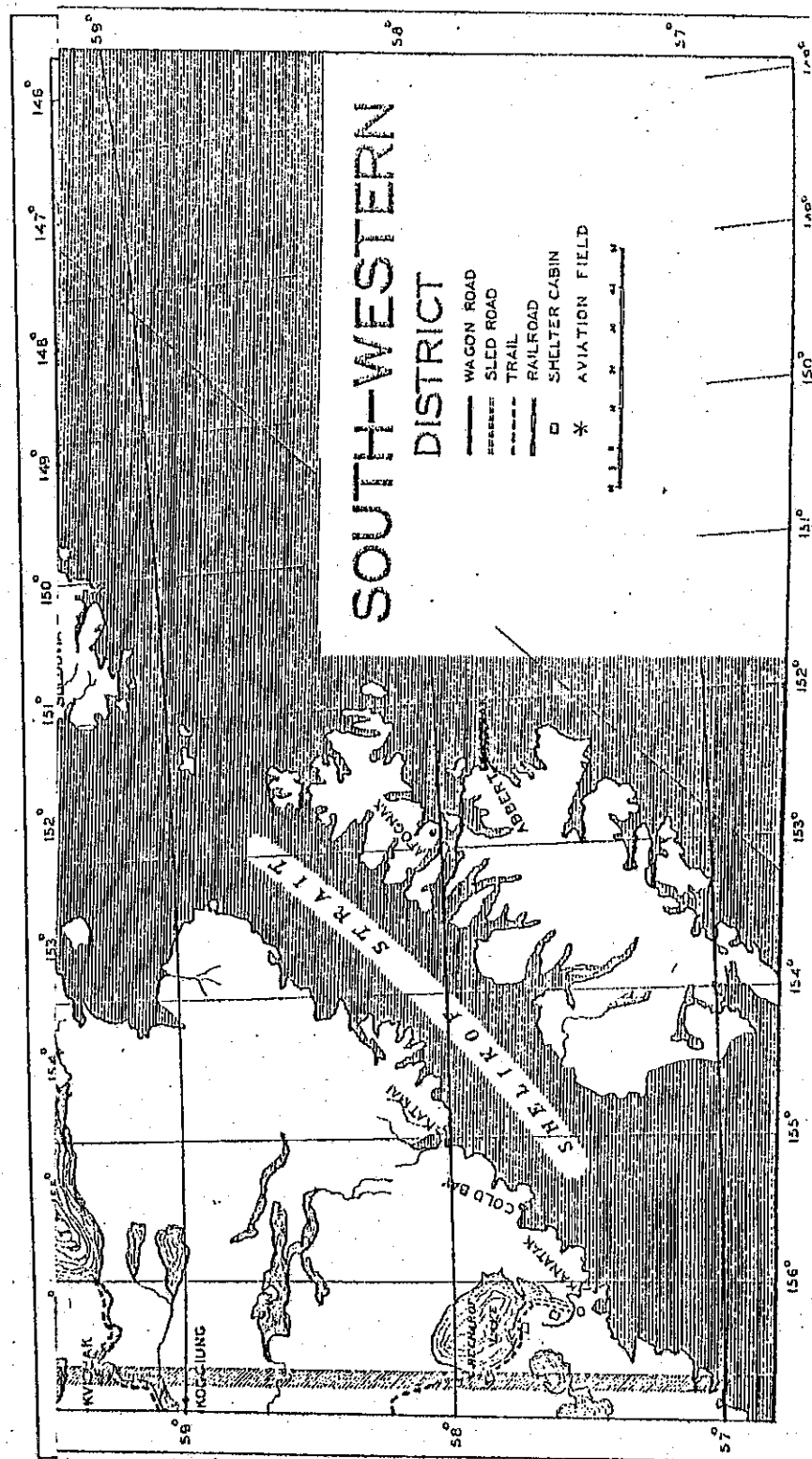
35AB—Leaving the Archangel Extension road, Route 35A, at Mile 4 this road crosses Fairangel Creek and extends to the workings of the Talkeetna Mining Co.

35B—Name changed to Palmer-Fishhook since this route connects the settlement of Palmer with the Wasilla-Fishhook road, 11 1/2 miles from Wasilla.

35D—This road is now 12 1/2 miles in length having been extended 1 1/2 miles this year.

35F—Mileage corrected to 14 1/2 miles.

35J—Length of road 7 1/4 miles instead of 10.



35S—This trail extends from Mile 6 on the Moose Creek Spur of The Alaska Railroad, 12 miles up the Moose Creek Valley. It serves a number of coal and quartz prospects.

35T—This route connects the Palmer-Fishhook road with the Moose-Palmer road at a point $2\frac{1}{2}$ miles north of Palmer. It serves several farms in this section.

35U—This field is located on the right limit of Moose Creek $\frac{1}{2}$ mile south of the Premier Coal Mine. It is 900 feet long by 200 feet wide.

35V—This field is located along the road from Fishhook Inn to the Willow Creek mines, 4 miles from Fishhook Inn. The field is 150 by 930 feet.

35W—This field 200 by 1000 feet is located on the north side of The Alaska Railroad 1 mile west of Wasilla station.

46D—This road extended to a total length of 34 miles.

48—This entire route is trail, 12 miles in length.

51—The wagon road has been extended to a length of $23\frac{1}{2}$ miles. The sled road was partially relocated and is now 18 miles long.

51A—This is an old trail connecting the Cache Creek road, Route 51, with the placer camps on Cache Creek. It practically parallels the winter sled road but keeps on high ground and is used in summer for pack horses and pedestrians. Double enders pass over it in late spring and early fall.

51B—This is a summer pack trail extending from the end of the Cache Creek wagon road, Route 51, up the left limit of Peters Creek and serving miners and prospectors on the upper part of that creek and on the Takasitna River. The trail is suitable also for double enders or dog teams in winter.

51C—This trail extends from the Yentna River at the mouth of Clearwater River, into the Fairview mining district where placer mining and prospecting are in progress.

51D—This is a portion of the old Cache Creek sled road, replaced by relocation. It serves an area along Spruce Creek.

51E—This trail connects the Fairview mining district with the Cache Creek district and provides an outlet for foot travel to the railroad at Talkeetna.

51F—This field, 200 by 1000 feet, is located on the divide between Peters and Cache Creeks near Mile 23 of the Talkeetna-Cache Creek road.

55A—This field, 200 by 1200 feet, is located about $\frac{1}{4}$ mile north of the town of Kenai.

75—Length of route $19\frac{1}{2}$ miles. This project now includes that section of road formerly carried as project 75B, Anchorage-Whitney.

75E—This road branches from the Anchorage-Eagle River road at Mile $2\frac{1}{4}$, extending $1\frac{1}{4}$ miles and serving several farms.

75H—This field is located on the northwest shore of Lake Spenard, 4 miles from Anchorage. The field is 200 by 1000 feet.

92K—This winter trail extends from Egegik on Kvichak Bay, up the Egegik River, around the southwest side of Becharof Lake to Kanatak. It is a part of the through route from Bethel to Kanatak.

93A—Length of route 12 miles.

93B—This sled road extends east from Chulitna Station, Mile 274 on The Alaska Railroad, to the mining operations on Portage Creek.

93C—This field, 200 by 1100 feet, is located at Curry Station on The Alaska Railroad.

94—This entire route is now improved to wagon road standard.

95—This project comprises $8\frac{1}{4}$ miles wagon road.

96A—This project consists of a cable tram across the Matanuska River, just below the mouth of the Chickaloon River. It provides access to the Coal Creek coal prospects from the railroad.

96B—This route extends from Chickaloon, the terminus of the Matanuska branch of The Alaska Railroad, to placer mines in the Nelchina district, distant 60 miles. During the past season improvements were made over the first 20 miles of the route.

98—This is a project begun in 1925 to consist of $16\frac{1}{2}$ miles of wagon road when completed. It extends up Homer Spit from Kachemak Bay serving a large area of farm lands.

98A—This trail leads from tidewater at Nuka Bay, situated 80 miles southwest of Seward, up the left limit of Nuka River to the Alaska Hills Mining Co., serving this property and other lode prospects beyond. It is suitable for pack horses or double enders.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized by routes as follows:

10D—The field was cleared of trees, stumps grubbed and the area leveled. The City of Seward contributed \$142.80 in cash toward the work.

20H—The trail was cleared 8 feet wide through timber around all lake crossings. Tripods were erected and signs placed across open stretches. One native timber bridge, 70 lin. ft., was constructed. This trail is now passable in summer.

20J—Four miles of trail were cut out through timber 8 feet wide from Susitna Station to the crossing of the Susitna River and tripods erected across open stretches. A reconnaissance was made over the entire route.

20K—A reconnaissance of this district was made in an effort to locate suitable fields for emergency landings. A suitable site was located but it was not feasible to initiate construction this season.

20L—This site was located, and staked out on the trip mentioned above. A contract was let for the construction but the work was not completed last season.

35B— $\frac{1}{2}$ mile of this road from the junction of the Matanuska Trunk road to the Werner connection was improved consisting of clearing, grubbing and regrading to a width of 20 feet.

35D—The road was extended up Craigie Creek $1\frac{1}{2}$ miles to new mining operations. The work consisted in removing 4067 cu. yds. of earth and loose rock, 1590 cu. yds. gravel surfacing and installation of 23 metal culverts.

35E—A 60-foot pony truss span with 30 lin. ft. of approaches was constructed (renewal) over Little Susitna River.

35J—The road was widened, Miles 4 to 6. A $\frac{1}{4}$ mile relocation was constructed on the north side of The Alaska Railroad eliminating two railroad crossings.

35K—The road was regraded and widened between Miles $4\frac{1}{2}$ and 8. 1200 lin. ft. of brush corduroy were laid and surfaced with gravel on flat near Matanuska. 4 metal culverts were installed.

35S—A bridge was built over Moose Creek at Mile 4, consisting of one 30-, and 20- and one 10-foot span, all of native timber.

35U—This field is located on ground that was formerly part of a farm and had been cleared and grubbed. The area was leveled.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following additions should be noted:

35C—Mileage corrected; should be $1\frac{1}{4}$ miles.

35I—Mileage corrected; should be 8 miles.

35L—Mileage corrected; should be $6\frac{1}{4}$ miles.

35Q—Road extended $\frac{1}{4}$ mile, now $\frac{3}{4}$ mile long.

35R—This road turns west toward a group of farms from Mile 6 of the Matanuska Trunk Road, serving 13 farms. It connects with the Wasilla-Fishhook road just outside of the village of Wasilla.

OPERATIONS DURING YEAR.

The important operations other than routine maintenance, are summarized by routes as follows:

35G—The road was cleared and graded 14 feet wide between Mile $1\frac{1}{2}$ and 3.

35I—Three miles of this road out of Palmer were cleared and grubbed and graded to a width of 30 feet.

35L—The road was regraded and widened for $3\frac{1}{4}$ miles from Mile 3 to Palmer. Four metal and one timber culverts were installed.

35Q—The grade leading from the railroad to the flat was widened and the grade reduced. 105 cu. yds. of gravel were placed as surfacing over wet ground and 2 metal culverts installed.

35R—The grubbing and grading 24 feet wide were completed between Mile $4\frac{1}{2}$ and the end, Mile $7\frac{1}{2}$.

75A—696 cu. yds. of gravel were placed as repairs to surface.

PRESENT CONDITION AND NEEDS.

Most of the roads in this group are earth surfaced and serve farm areas. They are adequate for the purpose though generally narrow for automobile traffic and soft in wet weather. These routes should be brought up to the same standard throughout and some gravel surfacing placed where most needed.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	34 $\frac{1}{4}$	\$13,985.34	\$406.00

KUSKOKWIM DISTRICT.

Carl Lottsfeldt, Superintendent, Tokotna.

This district embraces the upper valley of the Kuskokwim River and extends west as far as the Yukon River, thus including the valleys of the Iditarod and Innoko Rivers. The chief mining operations are centered about Iditarod, Tokotna, and Ophir.

This district comprises one of the most inaccessible parts of Alaska. Freight for Tokotna and vicinity is sent by ship from Seattle to Bethel and thence by river boat up the Kuskokwim River. Freight for Iditarod and vicinity is sent by ship from Seattle to Seward, thence by rail to Nenana and by river boats, owned and operated by the railroad, to Holy Cross. There it is transferred to smaller boats and sent up the Innoko and Iditarod Rivers. Summer mail is sent by this route. During the summer people go in by the last described route, or leave the government boat at Ruby and walk overland via Long and Poorman. During the winter mail and people enter and leave this district over the winter trail via McGrath, Telida, Diamond, Knights, and Kobi or Nenana. The limited activities within the district together with its remoteness and the great expense of road construction have prevented the construction of any through wagon or automobile routes.

Shelter cabins, aviation fields, the Ganes Creek and Little Creek roads are supported exclusively by the Territory. The remaining projects in this district were supported exclusively by the Alaska Road Commission.

SUMMARY OF ROADS.

Sub-Project No.	Name of Sub-Project	Wagon Road	Sted Road	Trail	Total Miles
20C	Rainy Pass-Big River	.....	.....	110	110
20DA	Tokotna-Ophir	.....	19	.....	19
20DB	Ophir-Dishkaket	.....	.....	55	55
32A	Tokotna-Flat	.....	.....	95	95
32AA	Tokotna-Flat (via Moore Creek)	.....	.....	93	93
32AB	Flat-Moore Creek (Summer)	.....	.....	7	7
32AC	Candle Creek-Tokotna	.....	.....	12	12
32B	Iditarod-Flat	8	.....	.....	8
32C	Ophir-Iditarod	.....	.....	79	79
32D	Flat-Crooked Creek (Winter)	.....	.....	54	54
32DD	Flat-Georgetown (Summer)	.....	.....	65	65
32E*	Tokotna Aviation Field	.....	.....	.....	.....
32F	Tokotna Depot	.....	.....	.....	.....
33C	Flat City-Flat Creek	5	.....	.....	5
33D	Head Flat Creek-Willow Creek	4 $\frac{1}{2}$	.....	.....	4 $\frac{1}{2}$
33E	Willow Creek-Chicken Creek	3	.....	.....	3
33F	Flat City-Otter Discovery	3	.....	.....	3
33G	Candle Landing-Candle Creek	9	.....	.....	9
33H*	Flat Aviation Field	.....	.....	.....	.....
34A	Flat-Holy Cross-Anvik	.....	.....	106	106
34B	Iditarod-Shageluk-Anvik	.....	.....	75	75
34B	Poorman-Cripple	.....	.....	47	47
38C	Ophir-Cripple (Winter)	.....	.....	47	47
38D	Ophir-Tokotna	22	.....	.....	22
38DA*	Little Creek Road	2	.....	.....	2
38F	Poorman-Ophir	.....	.....	125	125
38G	Tokotna-Tokotna Landing	1 $\frac{1}{2}$	.....	.....	1 $\frac{1}{2}$

35V—The area was cleared and grubbed, 30 cu. yds. of large stones were removed and 147 cu. yds. of gravel placed on wet portions. Holes were filled and 750 lin. ft. of drainage ditch constructed.

35W—This field is located on part of an abandoned farm on ground that had been cultivated. The entire area was plowed, harrowed and dragged.

46D—This project was initiated as a cooperative project between the Alaska Road Commission and the National Park Service in 1922. The Alaska Road Commission had been utilizing its funds in reconnaissance, surveys, location, purchase and freighting of supplies, accumulation of equipment, etc., so that upon National Park funds becoming available, work could be aggressively pushed ahead.

The National Park section of the project was adopted by Congress in the Act of April 9, 1924, providing for a 3-year road program for the National Parks. It provides for the construction of 33 miles of road and 70 miles of trail within the Park at a first cost of \$272,700. The first National Park funds to become available were appropriated by the Act of March 3, 1925, for the support of the activities of the Interior Department. \$30,000 of Park Road funds were allotted to this project for the fiscal year 1925, \$50,000 for the fiscal year 1926, \$16,000 for the fiscal year 1927, and \$65,000 for the fiscal year 1928.

A new program for National Park roads was adopted by Congress in the Act of March 7, 1928. It provides for the extension of the McKinley Park road to Copper Mountain.

During the past season the road was opened up 12 miles to Igloo Creek, Mile 34. The section from the railroad to the Sanctuary River was widened and improved. This section was maintained in good condition.

New work included 10 miles cleared, grubbed and stripped, 11 miles graded, 2½ miles gravel surfaced, 4 frame bent bridges constructed (71 lin. ft.) and 64 metal culverts installed.

The coach road up Savage River, branching from the main road in Mile 11, was improved. This provides a 9-mile side trip into an excellent game section.

A garage, 16 feet by 28 feet, was constructed adjoining the warehouse, and a 14 by 16 foot cabin for storage of supplies was erected at Igloo Creek, Mile 34.

The total expenditures to date are classified as follows:

Office Building	\$ 1,777.66
Warehouse and Garage	4,016.97
Cabins (Savage, Sanctuary and Igloo)	3,296.13
Trail Tents	732.50
Trail Construction	4,528.08
Reconnaissance	500.00
Road Construction	189,580.02
Road Maintenance	21,513.76
Total	\$225,942.12
Fiscal Year 1922	\$ 500.00
1923	2,528.90
1924	4,961.74
1925	86,788.17
1926	52,633.40
1927	17,033.02
1928	61,590.89
Total	\$225,942.12
National Park Service	\$206,020.91
Territory of Alaska	732.50
Contributed	700.25
Alaska Road Commission	18,488.43
Total	\$225,942.12

For the current working season (f.y. 1929) \$65,000 of Park Road funds have been allotted.

51—1870 cu. yds. of gravel were placed as surfacing on sections of old corduroy.

51F—The field was cleared of brush, low places filled and rocks removed.

55A—This field is located on a part of what was formerly the Kenai Agricultural Station. Clearing to provide additional width and length was performed and the area leveled.

75—3740 cu. yds. of gravel were placed as surfacing on 3 miles of road.

75H—The field was cleared, grubbed and leveled where necessary. One-third of the area was prepared by residents of the locality, the latter work being valued at \$100.00.

90C—Shelter Cabins, 3rd Division.

Route No.	Location	Work Done	Cost
30H	11 miles from Nancy	12'x14' cabin built	\$ 587.46
48	On Illamna Bay	Completed partially constructed 12'x14' cabin	340.80
51E	Between Lake and Treasure Creeks	12'x14' cabin built	506.00
92K	On Becharof Lake, one mile east of Gas Rock	10'x12' cabin built	250.00
92K	21 miles from Egegik	Placing stove	2.40
92K	57 miles from Egegik	Placing stove	2.40

9CB	20 miles from Chlekaloon	12'x14' cabin built	535.10
		Total	\$2,363.16

90D—Shelter Cabins, 4th Division.

Route No.	Location	Work Done	Cost
76	20 miles from Cantwell	Roof on cabin repaired and 16'x20' barn built	\$ 610.00
76	43 miles from Cantwell	12'x14' cabin and 16'x20' barn built	1,196.38
		Total	\$1,806.38

93B—This winter sled road was constructed during the past season. It is cleared 12 feet wide, and grubbed 8 feet wide. Necessary grading was done along side slopes and one 60-foot truss span with 45 lin. ft. of approach erected.

93C—The area was cleared, grubbed and leveled. Considerable work was required to provide a reasonably level surface. The work was performed by The Alaska Railroad under contract. The Alaska Railroad also cooperated with labor and equipment at an estimated value of \$1,200.00.

94—Grading of this road over the last 2½ miles to Abberts' ranch was completed. The work involved the removal of 4250 cu. yds. of earth, 585 cu. yds. rock. A 120-lin. ft. frame bent trestle was constructed over the Buskin River. 19 metal and 14 timber culverts were installed.

96B—Six miles of trail were cut out 6 feet wide through timber up Boulder Creek.

98—The road was extended 1¼ miles. One 22-ft. span bridge of native timber was constructed and 31 metal culverts installed.

Lowell Creek.

At the request of the Secretary of the Interior dated May 16, 1924, the Commission made a survey of Lowell Creek to determine the works necessary and adequate to protect the Government property adjacent to the town of Seward, Alaska, from floods and overflows. This survey was made during the summer and report was submitted to the Secretary of the Interior on January 19, 1925. The cost of survey and report was \$80.75, which was paid by The Alaska Railroad.

Recommendation was made for the improvement of this locality by the United States to the extent of the construction of a rockfill dam and timber flume at an estimated cost of \$120,000 for construction. Maintenance is estimated at \$900 per year for 14 years,

at which time the work will have to be renewed, the flume to be relined at the end of 7 years at an estimated cost of \$12,500.

A Resolution to authorize the expenditure of not to exceed \$125,000 for the work passed Congress in the last Session. \$25,000 of this amount is required to be contributed by local interests.

An appropriation of \$100,000.00 for this work was made available by the act of March 23, 1928, and \$25,000 have been deposited by the Territory of Alaska and the City of Seward. A contract was awarded in June, 1928, for the construction of the entire project and work is now in progress.

PRESENT CONDITION AND NEEDS.

The local roads centering about Anchorage are in good condition for the traffic requirements and need only maintenance. The roads around Wasilla are in fair condition for the traffic requirements. In places they should be widened and in many places they require gravel surfacing to make them readily passable in wet weather.

The completion of the road from Kodiak to Abberts' Ranch and Mill Bay is very desirable as is also the completion of 16½ miles of road at Homer Spit to serve the farm community at that locality. The road into Mt. McKinley National Park should be extended and should help to make the Park quite an attractive stopping place for tourists who are coming to Alaska in ever increasing numbers. The completion of this route through the Park would also provide an outlet for the promising mineralized area in the Kantishna district.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	178½	\$128,173.11	\$719.06
Sled Road	154½	12,648.13	\$1.86
Trail	267½	8,098.58	30.28
Totals	600½	\$148,919.82	\$248.09

TERRITORIAL PROJECTS.

Territorial Road Commission, Third Division.

Anton Etde, Chairman and Secretary.

Garrit Snider, Member.

Harry Morrison, Member.

SUMMARY.

Sub-Project No.	Name of Sub-Project	Wagon Road
16B	Seward-Nash	2½
35C	Palmer-Matanuska River	1¼
35Q	Palmer-Springer	3
35I	Moose-Palmer	8
35L	Palmer-Matanuska	6¼
35Q	Edlund Road	¾
35H	Bogard Road	7½
75A	Anchorage-Lake Spenard	4
76C	Chester Creek Boat Landing	1
	Total	34¼

38H*	Ganes Creek Road	14	....	....	14
38M*	Ophir-Aviation Field .....	....	....	....	....
64A	Cripple-Cripple Mt. (Summer) .....	....	12	12	12
64AA	Cripple-Cripple Mt. (Winter) .....	....	20	20	20
80A	McGrath-Tokotna (Summer) .....	....	6	6	6
80AA	McGrath-Tokotna (Winter) .....	....	17	17	17
80B	McGrath-Tellida .....	....	96	96	96
80C	McGrath-Candle Creek .....	....	11	11	11
80D	Nixon Fork-Nixon Mine .....	....	37	37	37
80E	Tokotna-Twin Peaks .....	....	12	12	12
80F	Medfra-Nixon Mine	12	....	12	12
80G	Nixon Fork-Tokotna (Summer) .....	....	15½	15½	15½
80G1G	Nixon Fork-Tokotna (Winter) .....	....	14½	14½	14½
80H*	McGrath Aviation Field .....	....	....	....	....
80J*	Medfra Aviation Field .....	....	....	....	....
90D*	Shelter Cabins .....	....	....	....	....
	Totals	84	53½	1176½	1313

(*)—Territorial Projects.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following changes and additions should be noted:

32D—This trail was relocated in part. The correct length is now 54 miles.

32E—This airplane landing field is located on a hill just back of the town of Tokotna. It is 500 feet wide by 1,000 feet long.

33H—This landing field is situated 1½ miles northeast of the town of Flat. The field is 400 feet wide and 1,400 feet long and is in first class condition.

34A—This trail was improved through to Holy Cross. Correct length is 106 miles.

34B—This is a dog sled trail connecting Iditarod with Anvik, on the Yukon River, by way of Shageluk.

38D—This road is now completed between Ophir and Tokotna. Length is 22 miles.

38DA—This road branches from the Tokotna-Ophir road in Mile 17 and extends 2 miles up Little Creek serving a dredge and other placer mines.

38H—This project includes the former routes 38H and 38I. Total length 14 miles wagon road.

38M—This landing field is located adjacent to the village of Ophir. It is "L" shaped, one runway being 200 by 750 feet and the other 200 by 350 feet.

64AA—This sled road branches from the Cripple-Poorman winter trail 3½ miles from Cripple and extends 20 miles up the Colorado Creek Valley to the mining operation around Cripple Mountain.

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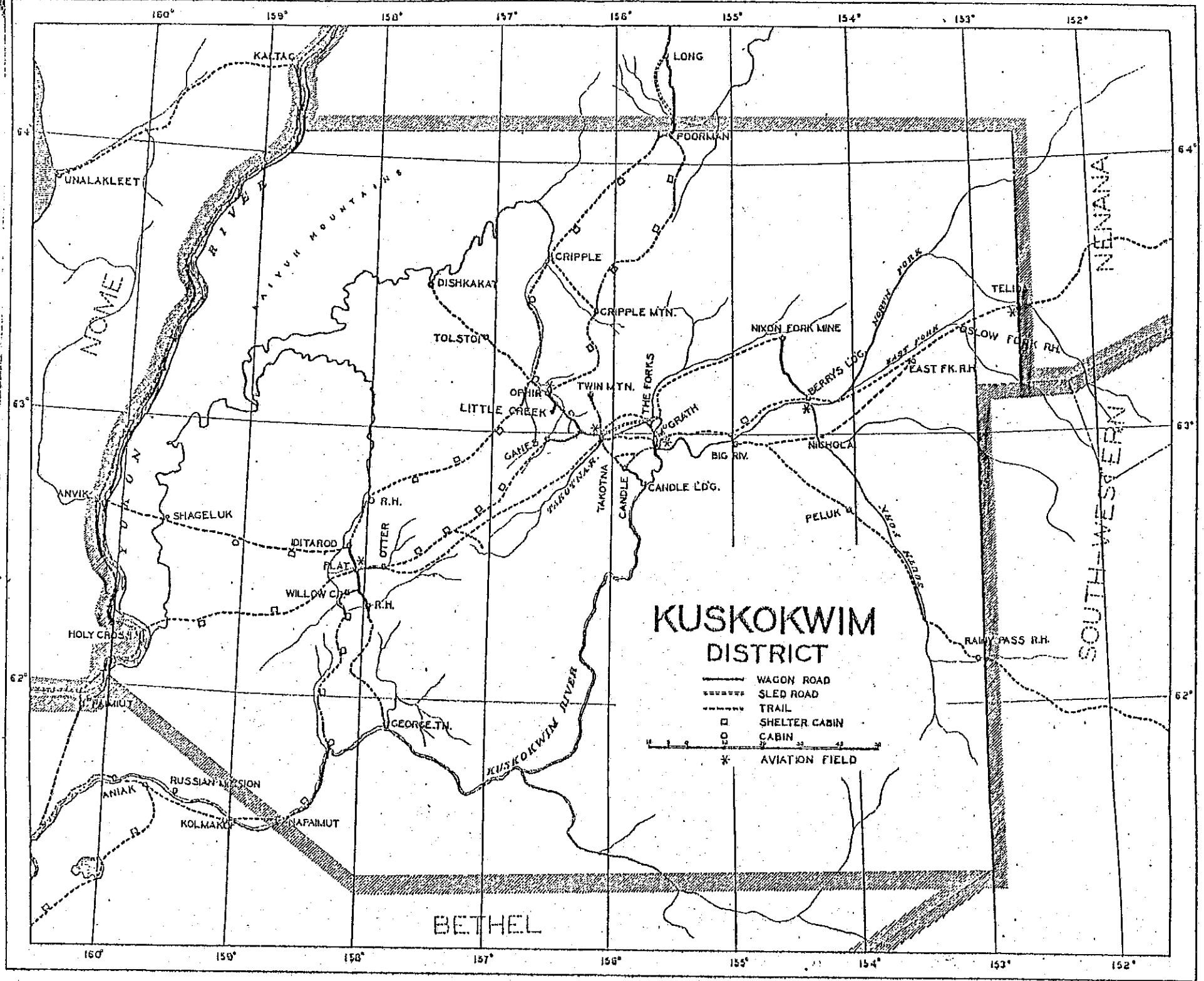
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80H—This landing field, 400 by 1000 feet, is located on the left bank of the Tokotna River, one-quarter mile upstream from its confluence with the Kuskokwim River and adjacent to the village of McGrath.

80J—This field is located on a bar on the left limit of the Kuskokwim river directly opposite Medfra roadhouse and post office. It is 400 by 1000 feet.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized by routes as follows:

20DA—This sled road was relocated for 11½ miles, crossing the divide by a different route than that used in summer.

32D—This trail was relocated and constructed for 18 miles to avoid winter glaciers on the old route and shorten the distance 5 miles.

33F—Additional improvement was made to the section of this road leading to dredging operations on Otter Creek. 110 lin. ft. of corduroy were laid and 925 lin. ft. gravel surfaced.

34A—This trail was brushed out and straightened in many sections. All open stretches were tripoded and two small bridges constructed.

34E—The section of this trail between Shageluk and Anvik was cut out twelve feet wide through timber and four miles of open country were tripoded.

38D—The last mile of this road into Ophir was constructed and additional gravel surfacing placed. This work comprised 1690 lin. ft. of brush corduroy, 3000 lin. ft. of grading and 4½ miles gravel surfaced. 18 timber culverts were installed.

38DA—Grading on this route was extended ½ mile to the 2-mile point. The right of way was cleared and grubbed and stripped to Mile 3 in preparation for grading next season.

38M—This field was lengthened 168 feet and 1850 lin. ft. of drainage ditches constructed.

80AA—A suspension bridge of 78-foot span was constructed over the Tatallna River. The trail from this bridge to the Tokotna River was relocated for 4 miles.

80H—A new location for this field was selected. The entire area was cleared and stumps pulled. An area 200 by 700 feet was partially leveled with the grader.

80J—All driftwood and stumps were removed from the area and the field was dragged and leveled.

90D—Shelter Cabins, 4th Division.

Route	Location	Work Done	Cost
32C	18 miles from Ophir	New damper	.50
32C	Fritz's, 33 miles from Ophir	New stove and timber bunks installed	67.50
32AA	16 miles from Flat	Stove pipe and damper	4.75
32AA	32 miles from Flat	Stove pipe and damper	4.75
34B	15 miles from Iditarod, Little Yentna River	12'x14' cabin built, stove installed	400.00
Total			\$ 477.30

PRESENT CONDITION AND NEEDS.

The transportation needs of this district, in view of the limited activity, are reasonably well served by the Kuskokwim, Yukon, Iditarod and Innoko Rivers, the extensive system of summer and winter trails, and the few short roads. Summer mail and passenger service would be greatly improved by the extension of the Ruby-Long road through Poorman to Ophir. The Tokotna-Ophir road is now complete but requires heavy maintenance and some additional surfacing on corduroy sections over one or two seasons. The winter trail system requires maintenance and the road from Iditarod to Flat should be improved.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	49	\$27,115.60	\$553.38
Sled Road	39	305.66	7.83
Trail	586	7,084.32	12.11
Totals	673	\$34,505.43	\$ 51.27

NOME DISTRICT.

Ross J. Kinney, Superintendent.

E. F. Bauer, Assistant Superintendent.

This district embraces that portion of Alaska lying west of the 158th Meridian and north of the Yukon River.

On account of the length and severity of the winter, the isolated location, and the lack of timber for protection and fuel, a considerable portion of the personnel of this vicinity spend the winter outside, leaving on the last boat sailing from Nome the latter part of October and returning on the first boat in the Spring, which arrives

at Nome from the middle to the latter part of June. The bulk of the freight is landed at the nearest port during the open season of navigation and moved to its destination either over available wagon roads in summer or over sled roads in winter.

The most important projects are the system of local roads serving the extensive mining activities about Nome, the Nome-Shelton Tram and connecting trail extending on through Dahl to Deering and Candle, the road from Nome to Council and Casa de Paga, and the system of winter trails extending throughout the entire District.

Shelter cabins and aviation fields are supported exclusively by the Territory—the Seward Peninsula Railroad exclusively by the Alaska Road Commission. All other projects in this district are supported jointly by the Territory and the Alaska Road Commission.

SUMMARY OF SUB-PROJECTS.

Sub-Project No.	Name of Sub-Route	Wagon Road	Sled Road	Trail	Total Miles
8	Nome-Council	67	....	26	82
8D	Council-Ophir Creek	12	....	....	12
8H	Casa de Paga Road	20	....	....	20
8J	Shovel Creek	6	....	....	6
8K*	Council Aviation Field	....	....	....	....
8L	Port Safety Aids	....	....	....	....
13A	Nome-Bessie	3 1/2	....	....	3 1/2
13B	Bessie-Banner	3 1/2	....	....	3 1/2
13C	Bessie-Little Creek	2	....	....	2
13F	Nome-Osborne	5 1/2	....	....	5 1/2
13K	Bessie-Buster	5	....	....	5
18	Katag-Nome	....	....	280	280
18A	Honanza-Kotzebue	....	....	240	240
18B	Golovin-Council	....	....	35	35
18D*	Unalakleet Aviation Field	....	....	....	....
18E*	Solomon Aviation Field	....	....	....	....
18F*	Golovin Aviation Field	....	....	....	....
18G*	Moses Aviation Field	....	....	....	....
18M*	Koyukuk Station-Unalakleet Telephone Line	....	....	....	....
21	Unalakleet-St. Michael	....	....	60	60
25C	Nome-Wireless	....	....	....	....
25D	Mouth of Center Creek	2 1/2	....	....	2 1/2
25E	Submarine Paystreak	3	....	....	3
25F	Anvil-Glacier	3	....	....	3
25G	Snake River Extension	3	....	....	3
25K	Nome City Wharf	....	....	....	....
25L*	Nome Aviation Field	....	....	....	....
25M*	Telephone Lines, Seward Peninsula	....	....	....	....
25N	Nome City Streets	....	....	....	....
25P	Nome Harbor Lights	....	....	....	....
26	Candle-Candle Creek	6	....	....	6
26A	Kugruk River Approach	1/4	....	....	1/4
26B	Hear Creek Trail	....	....	46	46
26C	Candle-Kiwalik	....	....	18	18
26D*	Kiwalik Aviation Field	....	....	....	....
26E*	Candle Aviation Field	....	....	....	....
27	Deering-Imnochuk	25	....	....	25
28	Shelton-Candle	....	....	162	162
28A	Nome-Taylor	....	....	136	136
37	Topkok-Candle	....	....	154	154
37A	Bluff-White Mountain	....	....	15	15
41	Kiuna-Klery Creek	....	....	12	12

41A	Kotzebue-Shungnak .....	.....	200	200
41B	Kotzebue-Point Barrow .....	.....	517	517
41D*	Kotzebue Aviation Field .....	.....	.....	.....
42	St. Michael-Kotlik .....	.....	63	63
49	Davidson's Landing-Taylor	24	16	40
62	Dime Creek	9	.....	9
62A	Haycock-Bear Creek .....	.....	22	22
67	Nome-Teller .....	.....	80	80
67A	Teller-Cape Prince of Wales .....	.....	67	67
67B	Teller-Bluestone	18	.....	18
67C	Teller-Mary's Igloo .....	.....	40	40
67D	Teller-American River .....	.....	35	35
67E*	Teller Aviation Field .....	.....	.....	.....
68	Flagging Trails .....	.....	712	712
73	Marshall Road	5	.....	5
73A	Kotlik-Marshall .....	.....	148	148
73B	Stuyahok	11	.....	11
73C	Scammon Bay Trail .....	.....	89	89
89A	Seward Peninsula Railroad	87	.....	87
90B*	Shelter Cabins .....	.....	.....	.....
Totals		276	50	3144
				3470

(*)—Territorial Projects.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following additions should be noted:

8K—This landing field is located near the village of Council. It is 150 by 1000 feet.

8L—The installation of buoys marking the channel at Port Safety was performed at the request of the Lighthouse Service with funds provided by that service.

18D—This is an emergency landing field 200 by 1600 feet. It is situated about $\frac{1}{2}$ mile north of Unalakleet.

18E—This emergency landing field, 300 by 1500 feet is situated south of Solomon lagoon on the spit $2\frac{1}{4}$ miles east of Solomon.

18F—This field is located near the village of Golovin. It is 200 by 1000 feet.

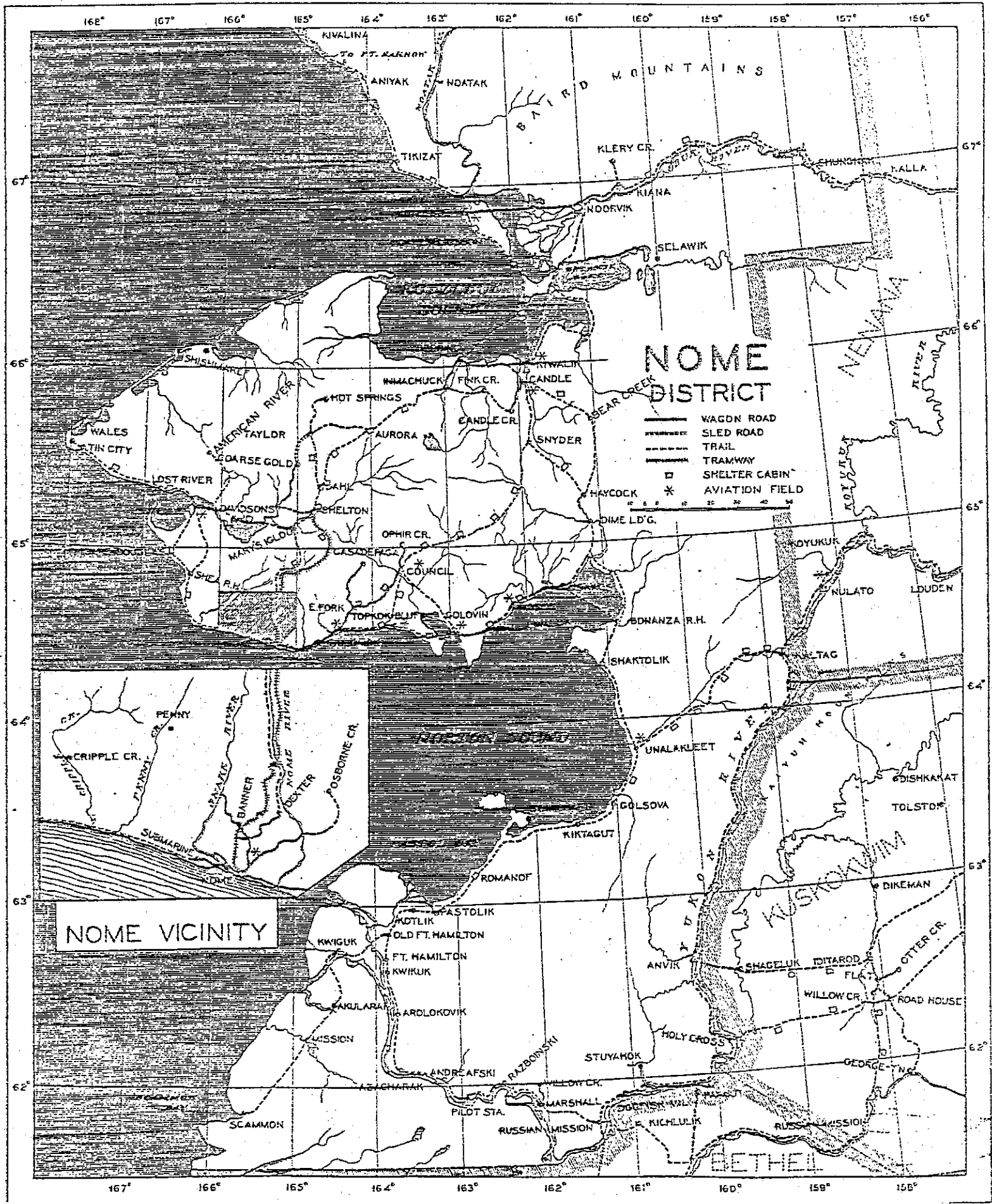
18G—This emergency landing field, 200x1500 feet is situated $\frac{1}{2}$ mile west of the Moses shelter cabin.

18H—This is the old abandoned Signal Corps telegraph line between Koyukuk station on the Yukon River and Unalakleet on the coast.

25C—Correct length $\frac{1}{4}$ mile.

25K—This dock, located inside the jetties of Nome Harbor, was built during the summer of 1924 with funds contributed by the town of Nome.

25L—This airplane landing field is situated 2 miles north of Nome on the Nome-Bessie road. It is built in two perpendicular runways, each 200 feet wide and 1400 feet long.



25M—This project includes telephone lines from Nome to various points on Seward Peninsula.

25N—This project comprises work of city street improvement performed by this Commission with funds contributed by the City of Nome.

26C—This trail connects the village of Candle with the village of Kiwalik on the coast of Kotzebue Sound.

26D—This landing field is 200x1400 feet. It is situated on the Kiwalik spit near the settlement of Kiwalik.

26E—This landing field, 200 by 1200 feet, is located on an island $\frac{1}{2}$ mile downstream from the village of Candle.

37A—This is a winter trail connecting Bluff, on the Nome-Kaltag trail with White Mountain village on the Golovin-Council trail.

41D—This landing field, 200 by 1200 feet, is located near the village of Kotzebue.

62A—This trail extends north from Haycock up the Peace River to mining operations on Bear Creek. It is passable for tractor-drawn sleds in winter.

67A—Mileage corrected. Length of trail is 67 miles.

67B—Sufficient improvement was made to this route to change the classification to sled road.

67D—This is a winter dog-sled trail extending from Teller to Budd Creek on American River. It is proposed to extend this trail to Shismaret. There is an existing trail over the latter portion of the route fairly well defined.

67E—This landing field is located on the beach near the village of Teller.

73—A new location has been adopted on this project and constructed to sled road standard. The old corduroy section was abandoned.

73C—This trail leaves the Kotlik-Marshall trail at Old Fort Hamilton and extends across the Delta of the Yukon River via Akularak Mission and Black River to Scammon Bay.

OPERATIONS DURING THE YEAR.

The important operations other than routine maintenance, may be summarized as follows:

8—Improvement of this route was continued during the season. 3½ miles were surfaced with gravel, 197 lin. ft. of trestle bridges constructed over Shovel Creek and Solomon River and ¼ mile new road (relocation) constructed.

8K—This field was cleared of all brush, stripped and leveled with a grader. The field is complete and suitable for use.

8L—Four oil drums were painted and placed as buoys marking the entrance channel to Port Safety.

13K—1½ miles of heavy gravel surfacing placed. One 32-foot span bridge (renewal) 20 feet wide, constructed.

18—36 miles of this trail were marked with new tripods, 90 lin. ft. of bridges constructed from native timber.

18F—The field was cleared of brush and partially leveled.

18H—This old telegraph line was maintained for service as a telephone line with funds appropriated by the Territory of Alaska.

25L—The east and west course was regraded and smoothed. The entire field was gone over with a grader and rolled. Necessary drainage ditches were constructed. The City of Nome contributed \$250.00 cash toward the work.

25M—A new line was constructed from Solomon to Bluff, a distance of 20 miles. Material was purchased and delivered at the site for the extension of this line to White Mountain. The poles and tripods on the line serve also as excellent marking for the winter trail which it parallels.

25P—Range lights were maintained in the harbor. The work was supervised by the Alaska Road Commission at the request of the Lighthouse Service.

26—1340 cu. yds. of gravel surfacing were placed on 2 miles of this road.

26E—Contract was awarded and the work on this field is about 35% complete. Willows were cut, debris removed and the area partially leveled.

27—Extensive improvements were made on this route. Between Miles 12 and 16 considerable brush corduroy was placed on wet sections and gravel surfaced. The road was rebuilt between Miles 16 and 21. One 36-foot bridge was constructed (renewal).

41D—A contract was awarded for the construction of this field. The work is not yet complete.

62—Extensive repairs were made to the corduroy which had been damaged by fire.

62A—This route was staked through open country and cleared through timber sections.

67B—This route was improved. Bridges and culverts were constructed where necessary. The route is now passable for tractors and wagons in summer.

67D—Permanent stakes were set over 29 miles of this route. The trail is well marked from Teller to Budd Creek.

67E—The area was cleared of drift and leveled. While this field is in good condition for landing, further minor improvements are required.

68—308 miles of temporary trails were flagged.

73A—The trail was brushed out through timber and all river and slough crossings well marked. Permanent stakes were set on open stretches.

89A—All low sections of track were raised and relined, 1000 ties replaced and a turning wye laid at the end of the line. A 125-foot cable suspension bridge was erected for foot travelers at the end of the line over the Kuzitrin River. A 12'x14' station was erected at Hot Springs. Two carriers handled 398 passengers and 140 tons of freight between Nome, Shelton and way points. In addition to the above the Hammon Consolidated Mines Co. operated three speeders, one converted truck and a Fordson locomotive. There was also some movement by dog powered push cars.

90B—Shelter Cabins, 2nd Division.

Route	Location	Work Done	Cost
18	Toptok, 48 miles from Nome	Repairs and wood	\$ 43.00
18	Chitukuk, 66 miles from Nome	Combination cabin and dog barn constructed	791.93
18	Walla Walla, 96 miles from Nome	Repairs and wood	20.00
18	Moses, 115 miles from Nome	Repairs and wood	36.00
18A	McCoy's, 19 miles from Haycock	Log cabin and dog barn built	500.00
18A	Choris Peninsula, 20 miles from Kiwalik	Additional bills for construction	16.31
18A	Arette Circle, 34 miles from Kiwalik	Furnishing wood	25.00
21	Coal Mine, 12 miles from Unalakleet	Stove and pipe	6.68
28	Dahl, 12 miles from Shelton	Windows	3.44

Route	Location	Work Done	Cost
28A	Iron Creek, 60 miles from Nome	Combination cabin and dog barn built	563.90
28A	Hot Springs, 77 miles from Nome	Cabin built	279.45
28A	Shelton, 85 miles from Nome	Combination cabin and dog barn built	630.25
28A	Windy, 19 miles from Shelton	Combination cabin and dog barn built	1,146.00
41A	Kobuk, 30 miles from Kotzebue	Repairs, stove renewed, 5 cords wood placed	84.00
41A	Hunt River, 161 miles from Kotzebue	Stove and pipe renewed	24.00
41B	Aukalurik, 198 miles from Kotzebue	Repairs	25.00
41B	Pingorarak, 403 miles from Kotzebue	Remaining bills for material and erection combination cabin and dog barn	402.76
49	Pt. Romanoff, 35 miles from St. Michael	Repairs and placing wood	72.00
67	Woolley, 44 miles from Nome	Repairs and wood	35.50
67	Douglas, 59 miles from Nome	Repairs and wood	35.00
67A	Lost River, 27 miles from Teller	Combination cabin and dog barn built	725.30
67A	York, 47 miles from Teller	Rebuilding into separate cabin and dog barn	293.20
73A	Harnden, 20 miles from Marshall	Stove and pipe placed	24.00
Total			\$5,787.42

PRESENT CONDITION AND NEEDS.

The Nome local roads are all usable by automobiles in dry weather but are apt to be soft in continued wet weather. They all should have additional surfacing to provide an all-weather road.

The Nome-Council road is in fair condition for the traffic to be carried. In favorable weather it may be used by automobiles as far as East Fork. Beyond that point it follows the river bed in part and is passable for horse drawn vehicles only. Continued improvement of the Solomon River section is believed justified.

The Nome-Shelton tramway from Nome to Little Creek, Mile 5, is suitable for ten-ton loads and from Little Creek to Shelton it is suitable for axle loads up to four tons. It should be maintained for this latter traffic throughout.

The winter trails have not all been permanently staked throughout and part of the permanent staking which has been accomplished

is not entirely satisfactory on account of the fact that only small willows were available for the purpose. All these trails should be well marked with suitable stakes.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit Cost Dollars per Mile
Wagon Road	159%	\$61,634.50	\$385.82
Tramway	87	10,184.00	117.06
Sled Road	23	4,030.81	175.25
Permanent Trails	2091	12,516.10	5.98
Temporary Trails	308	2,126.92	6.91
Totals	2668%	\$90,491.33	\$ 33.91

STATEMENT OF RECEIPTS AND DISBURSEMENTS.

This report covers vouchers received and placed in the account including June 30, 1928.

RECEIPTS:

Balance on hand July 1, 1927	\$ 115,027.02
Received since from:	
Transfers from Officers	1,361,191.55
War Warrants	0.00
Sales, Refunds, etc.	11,636.51
Reimbursements	4,026.40
Contributions	25,193.15
TOTAL	\$1,617,013.63

DISBURSEMENTS:

Disbursed as per tabulated statement below	\$1,264,003.53*
Deposited to credit of Treasurer, United States, balance on hand at close of fiscal year 1927	115,027.06
Deposit of collections	40,795.02
Balance on hand June 30, 1928 in Army Account of Advances	107,188.02
TOTAL	\$1,617,013.63

*—Does not include \$2,961.34 charged against available Appropriations by direct U. S. Treasury settlement.

EXPENDITURES IN DETAIL.

Federal Appropriations, Alaska Fund and Funds Contributed by the Territory of Alaska and Others.

Acct. No.	Name of Route	Construction	Maintenance and Improvement	Totals
2E	Gastineau Channel Bar	\$	\$ 365.00	\$ 365.00
2H	Juneau Wharf	21,971.23		21,971.23
3A	Fairnes-Wells		13,346.23	13,346.23
3B	Pleasant Camp Extension	5,000.00	2,040.60	7,040.60
3D	Fairnes-Mud Bay		1,851.23	1,851.23
3F	Fairnes-Jones Point		200.00	200.00
4BA	Valdez-Ptarmigan Drop, 1st Sec.		17,324.00	17,324.00
4BA	Valdez-Ptarmigan Drop, 2nd Sec.		16,310.00	16,310.00
4BA	Valdez-Ptarmigan Drop, 3rd Sec.		16,472.00	16,472.00
4BA	Valdez-Ptarmigan Drop, 4th Sec.		15,592.85	15,592.85
4BB	Ptarmigan Drop-Ernestine, 1st Sec.		16,720.00	16,720.00
4BB	Ptarmigan Drop-Ernestine, 2nd Sec.		16,432.00	16,432.00
4BB	Ptarmigan Drop-Ernestine, 3rd Sec.		15,075.10	15,075.10
4C	Ernestine-Willow Creek		15,490.38	15,490.38
4D	Willow Creek-Gulkana, 1st Sec.		18,309.00	18,309.00
4D	Willow Creek-Gulkana, 2nd Sec.		13,812.46	13,812.46
4E	Gulkana-Sourdough, 1st Sec.		19,820.00	19,820.00
4E	Gulkana-Sourdough, 2nd Sec.		19,646.00	19,646.00
4E	Gulkana-Sourdough, 3rd Sec.		18,647.60	18,647.60
4F	Sourdough-Mile 168		15,723.63	15,723.63
4G	Mile 168-Delta River, 1st Sec.		19,372.00	19,372.00
4G	Mile 168-Delta River, 2nd Sec.		17,223.56	17,223.56
4H1	Delta River-Rapids, 1st Sec.		16,827.00	16,827.00
4H1	Delta River-Rapids, 2nd Sec.		14,379.00	14,379.00
4H1	Delta River-Rapids, 3rd Sec.		13,788.63	13,788.63
4H2	Rapids-Grundler, 1st Sec.		15,471.00	15,471.00
4H2	Rapids-Grundler, 2nd Sec.		13,358.84	13,358.84
4I	Grundler-Richardson, 1st Sec.		18,463.00	18,463.00
4I	Grundler-Richardson, 2nd Sec.		13,618.49	13,618.49
4J	Richardson-Satchaket, 1st Sec.		16,719.00	16,719.00
4J	Richardson-Satchaket, 2nd Sec.		16,325.00	16,325.00
4J	Richardson-Satchaket, 3rd Sec.		14,055.72	14,055.72
4JA	Lake Harding Road	2,600.75	500.00	3,100.75
4K	Satchaket-Fairbanks		15,717.81	15,717.81
4KA	Satcha Bridge		6,729.09	6,729.09
5A	Duobar-Ft. Gibbon	1,300.00	3,373.39	4,673.39
5B	Nenana-Campbells		83.00	83.00
5C	Nenana-Campbells Creek	1,424.60	960.00	2,374.60
5E	Fish Lake-American Field	1,488.99		1,488.99
5F	Tanana Aviation Field		1,101.60	1,101.60
6A	Willow Creek-Tonsina		17,276.74	17,276.74
6B	Tonsina-Chitina		3,349.25	3,349.25
6D	Chitina Depot	3,349.25		3,349.25
6E	Chitina Native School		495.00	495.00
7A	Summit-Chatanika		2,680.73	2,680.73
7D	Ester Creek		7,432.24	7,432.24
7G	Fairbanks-Gilmore		11,408.09	11,408.09
7I	Gilmore-Summit		2,027.25	2,027.25
7JB	Palmer Creek Aviation Field	575.00		575.00
7K	Olmes-Livengood		143.25	143.25
7V	Fairbanks Wireless Road		85.46	85.46
7Y	Fairbanks Aviation Field	3,839.90		3,839.90
8	Nome-Council	5,216.97	14,300.00	19,516.97
8D	Council-Ophir Creek		1,180.40	1,180.40
8H	Casa de Paga		617.00	617.00

Acct. No.	Name of Route	Construction	Maintenance and Improvement	Totals
8K	Council Aviation Field	504.00		504.00
8L	Port Safety Aids		136.50	136.50
9	Rampart-Eureka		6,280.18	6,280.18
10D	Seward Aviation Field	571.20		571.20
11A	Eagle-Liberty	1,000.00	4,971.34	5,971.34
11AA	American Summit-King Solomon		474.00	474.00
11B	Liberty-Forty Mile		330.25	330.25
11C	Steel Creek-Jack Wade		189.50	189.50
11D	Steel Creek-Walker's Fork		342.50	342.50
11E	Eagle-Seventy Mile	1,175.25		1,175.25
11F	Jack Wade-Chleken	142.28		142.28
11G	Steel Creek-Canyon Creek	57.00		57.00
11H	Dome-Steel Creek	414.30		414.30
11I	Franklin-Chleken Creek	1,081.25		1,081.25
11J	Jack Wade-Walker's Fork	113.00		113.00
11K	Eagle Aviation Field	455.36		455.36
13A	Nome-Bessie	4,011.23		4,011.23
13B	Bessie-Banner	3,224.90		3,224.90
13C	Bessie-Little Creek	93.74		93.74
13F	Nome-Osborne	3,190.01		3,190.01
13K	Bessie-Buster	6,715.79		6,715.79
14	Sitka-Indian River	270.76		270.76
14A	Sitka National Monument	2,057.00		2,057.00
14B	Sitka National Cemetery	800.00		800.00
14C	Sitka Pioneer Cemetery Road	375.84		375.84
15	Circle-Miller House, 1st Sec.	14,322.00	4,730.00	19,052.00
15	Circle-Miller House, 2nd Sec.	14,530.00	3,510.00	18,140.00
15	Circle-Miller House, 3rd Sec.	17,972.00		17,972.00
15	Circle-Miller House, 4th Sec.	17,530.00		17,530.00
15	Circle-Miller House, 5th Sec.	17,871.00		17,871.00
15	Circle-Miller House, 6th Sec.	16,917.00		16,917.00
15	Circle-Miller House, 7th Sec.	17,311.00		17,311.00
15	Circle-Miller House, 8th Sec.	17,944.10		17,944.10
15C	Circle-Hot Springs Aviation Field		20.00	20.00
15D	Leech Cutoff	224.75		224.75
16	Chatanika-Miller House, 1st Sec.	10,130.00	9,737.00	19,867.00
16	Chatanika-Miller House, 2nd Sec.	10,627.00	9,324.00	19,951.00
16	Chatanika-Miller House, 3rd Sec.	15,903.35	3,248.60	19,151.95
17	Ft. Gibbon-Kaltag		214.79	214.79
17C	Nulato Aviation Field	2,011.98		2,011.98
17D	Tanana-Koyukuk Telephone Line		1,742.54	1,742.54
18	Kaltag-Nome		2,946.66	2,946.66
18A	Bonanza-Kotzebue		498.47	498.47
18D	Unalakleet Aviation Field		3.60	3.60
18E	Solomon Aviation Field		3.60	3.60
18F	Golovin Aviation Field	297.30		297.30
18H	Koyukuk Sta.-Unalakleet Tel. Line		1,358.75	1,358.75
20DA	Talcolna-Ophir		105.55	105.55
20H	Nancy-Susitna		1,689.86	1,689.86
20J	Susitna-Tyonek	1,931.98		1,931.98
20K	Susitna Sta. Aviation Field	521.60		521.60
20L	Skavenina Crossing Aviation Field	527.30		527.30
21	Unalakleet-St. Michael		629.49	629.49
23A	Snowshoe-Beaver		271.83	271.83
23H	Beaver-Caro		367.50	367.50
23C	Big Creek	5,260.00	1,712.88	6,972.88
23D	Caro-Flat Creek		3,516.54	3,516.54
23E	Caro-Coldfoot		1,532.80	1,532.80
23F	Chandalar Aviation Field	2,363.17		2,363.17
25C	Nome Wireless		41.40	41.40
25D	Mouth of Center Creek		182.85	182.85
25E	Submarine Paystreak		910.15	910.15
25F	Anvil-Glacier	2,529.34		2,529.34
25G	Snake River Extension	1,858.19		1,858.19
25L	Nome Aviation Field		648.25	648.25
25M	Telephone Lines, Seward Pen.	1,700.00	1,644.57	3,344.57

Acct. No.	Name of Route	Construction	Maintenance and Improvement	Totals
26P	Nome Harbor Lights		160.00	160.00
26	Candle-Candle Creek		5,473.42	5,473.42
26D	Kiwalik Aviation Field		4.60	4.60
27	Deering-Immachuk		9,724.59	9,724.59
28	Shelton-Candle		873.68	873.68
28A	Nome-Taylor		654.87	654.87
29	Ft. Gibbon-Battles		261.30	261.30
29A	Battles-Coldfoot		53.90	53.90
29C	Millie 70-Hughes		458.46	458.46
29D	Wild River Trail		1,425.76	1,425.76
30	Hot Springs Landing-Bureka		3,639.39	3,639.39
31	Caribou Creek		413.94	413.94
32A	Takotna-Flat (Summer)		425.67	425.67
32B	Iditarod-Flat		2,340.37	2,340.37
32C	Ophir-Iditarod (Winter)		399.24	399.24
32D	Flat-Crooked Creek (Winter)		600.00	600.00
32E	Takotna Aviation Field		25.00	25.00
32F	Takotna Depot		653.94	653.94
33F	Flat City-Otter Discovery		1,463.30	1,463.30
34A	Flat-Holy Cross-Anvik		772.94	772.94
34B	Iditarod-Shageluk-Anvik		315.56	315.56
35A	Archangel Extension		233.50	233.50
35B	Palmer-Fishhook		1,581.99	1,581.99
36D	Willow Creek Extension		15,118.21	15,118.21
36E	Wasilla Fishhook		3,534.39	3,534.39
36F	Wasilla-Knik		484.50	484.50
36H	Wasilla-Finger Lake-Palmer		2,155.67	2,155.67
36J	Wasilla-Matanuska		3,589.04	3,589.04
36K	Matanuska Prunk Road		4,691.00	4,691.00
36O	Fishhook-Goldmint		600.00	600.00
36S	Moose Creek Trail		77.43	77.43
36T	Werner Connection		373.00	373.00
36U	Moose Creek Aviation Field		451.50	451.50
36V	Fishhook Aviation Field		848.74	848.74
36W	Wasilla Aviation Field		469.50	469.50
36	Mineral Creek		3,580.00	3,580.00
37A	Bluff-White Mountain		2,135.68	2,135.68
38A	Ruby-Long Creek		5,127.64	5,127.64
38C	Ophir-Cripple		381.25	381.25
38D	Ophir-Takotna		5,661.00	5,661.00
38DA	Little Creek Road		5,102.39	5,102.39
38B	Long-Poorman, 1st Sec.		870.00	870.00
38E	Long-Poorman, 2nd Sec.		3,240.00	3,240.00
38H	Ganes Creek Road		13,888.32	13,888.32
38M	Ophir Aviation Field		241.87	241.87
40	Douglas-Gastineau Channel		125.00	125.00
41	Kint-Klery Creek		998.51	998.51
41A	Katzebue-Shungnak		43.20	43.20
41B	Katzebue-Pt. Barrow		55.51	55.51
41D	Katzebue Aviation Field		40.00	40.00
42	St. Michael-Kolik		20.60	20.60
44A	Skagway-Smuggler's Cove		492.27	492.27
46	Kohl-Bureka		100.00	100.00
46C	Nenana-Knight's Roadhouse		56.00	56.00
46D	Mekinley Park Road, 1st Sec.		586.47	586.47
46D	Mekinley Park Road, 2nd Sec.		3,240.00	3,240.00
46D	Mekinley Park Road, 3rd Sec.		7,328.00	7,328.00
46D	Mekinley Park Road, 4th Sec.		2,611.75	2,611.75
46E	Diamond-Telida		11,928.75	11,928.75
46F	Nenana Cemetery Road		19,236.00	19,236.00
46H	Lake Alnchumina Aviation Field		19,558.14	19,558.14
46L	Knight's-Bureka		125.50	125.50
46M	Nenana Aviation Field		1,340.70	1,340.70
46N	Knight's Aviation Field		50.00	50.00
47	Coldfoot-Wiseman		50.00	50.00
47A	Wiseman Aviation Field		11.13	11.13
47B	Nolan Branch		350.00	350.00
47C	Wiseman-Hammond		460.74	460.74
48	Hannan Bay-Hannan Lake		503.21	503.21
51	Talkeetna-Cache Creek		509.33	509.33
51A	Cache Creek Trail		8,253.33	8,253.33
51B	Peters Creek Trail		726.18	726.18
51E	Mills Creek-Cache Creek		151.70	151.70
			237.86	237.86

Acct. No.	Name of Route	Construction	Maintenance and Improvement	Totals
51P	Cache Creek Aviation Field		179.90	179.90
53	Eagle-Circle		497.50	497.50
53A	Circle-Ft. Yukon		656.91	656.91
55	Kenai-Russian River		189.46	189.46
55A	Konal Aviation Field		901.61	901.61
57	McCarthy-Nizina		6,744.20	6,744.20
57A	Nizina River Bridge		7,220.00	7,220.00
57B	Nizina-Chitina River		3,048.38	3,048.38
57C	McCarthy-Kennecott River		939.72	939.72
57D	Chititu Branch		500.00	500.00
59	Fairbanks Bridge		264.35	264.35
59A	Fairbanks Depot		2,654.85	2,654.85
60	Valdez Dyke		389.08	389.08
60A	Valdez Aviation Field		902.37	902.37
61	Strelma-Kuskulana		6,364.06	6,364.06
61A	Kotsina Trail		759.37	759.37
62	Dims Creek		157.54	157.54
62A	Haycock-Bear Creek		800.00	800.00
63	Dunbar-Brooks		2,616.22	2,616.22
63B	Brooks-Amy Creek		216.00	216.00
63C	Brooks Tram		649.50	649.50
63E	Livngood Aviation Field		5.40	5.40
64A	Cripple-Cripple Mountain		12,263.00	12,263.00
65A	Gulicanna-Chistochina		660.00	660.00
65B	Grundler-Tanana Crossing		200.00	200.00
67	Nome-Teller		734.53	734.53
67A	Teller-Cape Prince of Wales		40.79	40.79
67B	Teller-Bluestone		2,230.00	2,230.00
67C	Teller-Mary's Igloo		1,740.81	1,740.81
67D	Teller-American River		270.28	270.28
67E	Teller Aviation Field		849.67	849.67
68	Plugging Trails (712 miles)		223.30	223.30
73	Marshall Road		2,126.92	2,126.92
73A	Kotlk-Marshall		60.00	60.00
75	Anchorage Loop		1,785.00	1,785.00
75D	Anchorage Warehouse		6,097.06	6,097.06
75E	McDonald Road		242.60	242.60
75H	Lake Spennard Aviation Field		327.61	327.61
76	Cantwell-Valdez Creek		177.45	177.45
78	Valdez Depot		2,126.00	2,126.00
79	Seward Depot		550.00	550.00
80A	McGrath-Takotna (Summer)		3.00	3.00
80A	McGrath-Takotna (Winter)		29.76	29.76
80B	McGrath-Telida		1,850.00	1,850.00
80C	McGrath-Candle Creek		816.18	816.18
80H	McGrath Landing Field		806.96	806.96
80J	Medfra Aviation Field		29.47	29.47
81	Good Creek-Salmon River		3,179.66	3,179.66
82	Perry-Bva Creek		285.00	285.00
82A	Seward Peninsula Railroad		500.00	500.00
82B	Shelter Cabins, 2nd Division		870.85	870.85
82C	Shelter Cabins, 3d Division		49.00	49.00
82D	Shelter Cabins, 4th Division		10,184.00	10,184.00
82A	Bethel-Quinhagak		467.42	467.42
82B	Bethel-Tulukak		34.80	34.80
82C	Yukon-Kuskatwim Portage		2,805.42	2,805.42
82D	Quinhagak-Good News Bay		8,407.01	8,407.01
82E	Good News-Togalak		433.91	433.91
82H	Togalak-Nushagak		8,400.92	8,400.92
82I	Lewis Point-Naknek		420.11	420.11
82J	Naknek-Egegik		94.10	94.10
82K	Egegik-Kanatak		37.60	37.60
82O	Tulukak-Foothills		435.55	435.55
82P	Holy Cross-Kaltshak		78.54	78.54
82Q	Upper Landing-Bear Creek		71.54	71.54
83	Chulitna Trail		156.25	156.25
83B	Indian River		113.80	113.80
83C	Curry Aviation Field		66.50	66.50
84	Kodiak-Abbotts		17.50	17.50
86	Chickaloon-Kings River		42.85	42.85
86A	Chickaloon Cable		99.00	99.00
86B	Chickaloon-Nelchina		2,700.00	2,700.00
			53.00	53.00
			6,366.23	6,366.23
			876.60	876.60
			8,523.13	8,523.13
			108.00	108.00
			1.98	1.98
			864.13	864.13

Acct. No.	Name of Route	Construction	Maintenance and Improvement	Totals
98	Homer Split	7,906.99	2,606.00	10,512.99
98A	Nuka Bay Trail	630.00	704.61	1,334.61
100	Juneau Office and General Overhead	9,696.03	18,590.00	28,286.03
	Totals	\$430,923.16	\$822,746.02	*\$1,253,669.18

*—Includes \$2,961.34 charged against available appropriations by direct U. S. Treasury Settlement. Does not include \$3,296.69 reimbursements.

EXPENDITURES IN DETAIL—COOPERATIVE FUND.

(Included in Preceding Table.)

FIRST DIVISION.

Acct. No.	Name of Route	Federal	Territorial	Totals
2E	Gastineau Channel Bar	\$ 365.00	\$ 365.00	\$ 730.00
2H	Juneau Wharf	14,921.23	7,059.00(a)	21,971.23
3A	Haines-Wells	3,321.07	10,024.16	13,345.23
3B	Wells-Pleasant Camp	1,580.00	5,460.00	7,040.00
3D	Haines-Mud Bay	201.22	1,650.00	1,851.22
3F	Haines-Jones Point	200.00	200.00	400.00
14	Sitka-Indian River	70.76	200.00	270.76
14A	Sitka National Monument	1,346.04	711.95(b)	2,057.99
14C	Pioneer Cemetery Road	375.84	375.84	751.68
40	Douglas-Gastineau Channel	98.61	900.00	998.61
44A	Skagway-Smuggler's Cove	10.00	90.00	100.00
81	Good Creek-Salmon River	176.85	1,200.00	1,376.85
	Totals	\$ 21,719.23	\$ 28,226.96	\$ 49,946.24

(a)—Contributed by the City of Juneau.

(b)—Includes \$5.20 contributed by the Sitka Commercial Club and \$706.76 by the National Park Service.

SECOND DIVISION.

Acct. No.	Name of Route	Federal	Territorial	Totals
8	Nome-Council	\$ 5,314.58	\$ 14,200.39(c)	\$ 19,514.97
8D	Council-Ophir Creek	380.40	800.00	1,180.40
8H	Casa de Paga Road	217.00	400.00	617.00
8K	Council Aviation Field .....	.....	504.60	504.60
8L	Port Safety Aids .....	.....	136.50(d)	136.50
13A	Nome-Bessie	1,411.23	2,600.00	4,011.23
13B	Bessie-Banner	1,121.90	2,100.00	3,221.90
13C	Bessie-Little Creek	33.74	60.00	93.74
13F	Nome-Osborne	1,130.01	2,050.00	3,180.01
13K	Bessie-Buster	1,095.79	5,020.00	6,115.79
18	Katlag-Nome	986.66	1,960.00	2,946.66
18A	Bonanza-Kotzebue	178.47	320.00	498.47
18D	Unalakleet Aviation Field .....	.....	3.60	3.60
18E	Solomon Aviation Field .....	.....	3.60	3.60
18F	Galovin Aviation Field .....	.....	297.30	297.30
18H	Koyukuk Sta.-Unalakleet Telephone Line .....	.....	768.75	768.75
21	Unalakleet-St. Michael	158.49	470.00	628.49
25C	Nome-Wireless	13.40	28.00	41.40
25D	Mouth of Center Creek	56.85	126.00	182.85
25E	Submarine Paystreak	278.46	637.00	915.46
25F	Anvil-Glaeter	768.34	1,770.00	2,538.34
25G	Sauke River Extension	678.19	1,280.00	1,958.19
25L	Nome Aviation Field .....	.....	648.25(e)	648.25
25M	Telephone Lines, Seward Peninsula .....	.....	3,264.67	3,264.67
25P	Nome Harbor Lights .....	.....	100.00(d)	100.00
26	Candle-Candle Creek	1,043.42	3,830.00	5,473.42
26D	Kiwalik Aviation Field .....	.....	4.60	4.60
27	Deering-Immachuk	2,414.59	7,810.00	9,724.59

28	Shelton-Candle	264.68	609.00	873.68
28A	Nome-Taylor	194.87	460.00	654.87
37A	Bluff-White Mountain	645.68	1,490.00	2,135.68
41	Kinna-Kley Creek	13.20	30.00	43.20
41A	Kotzebue-Shungnak	17.61	38.00	55.61
41B	Kotzebue-Pt. Barrow	12.00	28.00	40.00
41D	Kotzebue Aviation Field .....	.....	20.60	20.60
42	St. Michael-Kotlik	152.27	340.00	492.27
62	Dime Creek	786.22	1,830.00	2,616.22
62A	Haycock-Bear Creek	66.00	160.00	226.00
67	Nome-Teller	214.63	620.00	834.63
67A	Teller-Cape Prince of Wales	13.79	28.00	41.79
67B	Teller-Bluestone	1,190.81	2,780.00	3,970.81
67C	Teller-Mary's Igloo	80.28	190.00	270.28
67D	Teller-American River	249.67	600.00	849.67
67E	Teller Aviation Field .....	.....	223.30	223.30
68	Flagging Trails	636.92	1,490.00	2,126.92
73	Marshall Road	18.00	42.00	60.00
73A	Kotlik-Marshall	536.00	1,250.00	1,786.00
89A	Seward Peninsula Railroad	10,184.00	.....	10,184.00
90B	Shelter Cabins .....	.....	5,787.42	5,787.42
	Totals	\$ 33,644.94	\$ 68,669.48	\$ 102,314.42

(c)—Includes \$2.24 miscellaneous refunds.

(d)—Contributed by the U. S. Lighthouse Service.

(e)—Includes \$250.00 contributed by the City of Nome.

THIRD DIVISION.

Acct. No.	Name of Route	Federal	Territorial	Totals
6E	Chitina-Native School	\$ 495.06	\$ 495.06	\$ 990.12
10D	Seward Aviation Field	571.20(f)	.....	571.20
20K	Susitna Aviation Field	621.60	621.60	1,243.20
20L	Skwentna Aviation Field	627.30	627.30	1,254.60
36B	Palmer-Fishhook	781.99	800.00	1,581.99
36H	Wasilla-Finger Lake-Palmer	1,180.67	975.00(g)	2,155.67
36J	Wasilla-Matanuska	1,869.04	1,700.00	3,569.04
36K	Matanuska Trunk Road	2,261.00	2,300.00	4,561.00
36T	Werner Connection	223.00	160.00	383.00
36U	Moose Creek Aviation Field .....	.....	461.50	461.50
36V	Fishhook Aviation Field	848.74	948.74	1,797.48
36W	Wasilla Aviation Field	469.60	469.60	939.20
38	Valdez-Mineral Creek	2,660.65	2,500.00	5,160.65
61F	Cucho Creek Aviation Field .....	.....	179.90	179.90
65A	Kenai Aviation Field .....	.....	901.51	901.51
67A	Nizina River Bridge	3,048.38	.....	3,048.38
67B	Nizina-Chitina River	639.72	600.00	1,239.72
66	Valdez Dylce	6,364.05	.....	6,364.05
66A	Valdez Aviation Field .....	.....	769.37(h)	769.37
61	Strehln-Kuskulana	167.54	167.54	335.08
76	Anehorage Loop	3,107.06	2,990.00	6,097.06
76B	McDonald Branch	177.01	160.00	337.01
76H	Lake Spenard Aviation Field .....	.....	177.45	177.45
90C	Shelter Cabins	3,398.00	3,398.00	6,796.00
93B	Indian River-Portage Creek	2,766.23	3,600.00	6,366.23
93C	Curry Aviation Field .....	.....	876.60	876.60
98	Homer Split	5,510.99	5,000.00	10,510.99
98A	Nuka Bay Trail	609.71	724.90	1,334.61
	Totals	\$ 24,956.95	\$ 38,189.22	\$ 62,554.57

(f)—Includes \$142.80 contributed by the City of Seward.

(g)—Includes \$76.00 contributed by E. P. Marlon.

(h)—Includes \$400.00 contributed by the City of Valdez.

FOURTH DIVISION.

Acct. No.	Name of Route	Federal	Territorial	Totals
5C	Fish Lake-American Creek	\$ 2,374.60	\$ 2,374.60	\$ 4,749.20
5E	Tanana Aviation Field	1,488.99	.....	1,488.99
7D	Fairbanks-Ester	3,611.19	3,821.01(i)	7,432.20
73B	Palmer Creek Aviation Field .....	.....	676.00	676.00
7K	Omes-Livengood	43.25	100.00	143.25

7Y	Fairbanks Aviation Field	3,889.90(j)	3,889.90
9	Rampart-Eureka	3,230.18	3,230.18
11Q	Eagle Aviation Field	455.36	455.36
15C	Circle Hot Springs Aviation Field	20.00	20.00
16	Chatanika-Circle	52,969.35	52,969.35
17C	Nulato Aviation Field	2,011.98	2,011.98
17D	Tanana-Koyukuk Telephone Line	1,742.54	1,742.54
18H	Koyukuk-Unalakleet Telephone Line	590.00	590.00
23A	Snowshoe-Beaver	131.83	131.83
23F	Chandalar Aviation Field	2,363.17	2,363.17
30	Hot Springs Landing-Eureka	1,639.39	1,639.39
32E	Tukotna Aviation Field	25.00	25.00
38D	Ophir-Takotna	5,593.79	5,593.79
38DA	Little Creek	5,972.39	5,972.39
39H	Ganes Creek	241.87	241.87
38M	Ophir Aviation Field	426.00	426.00
46F	Nenana Cemetery Road	620.70	620.70
46H	Lake Minchumina Aviation Field	50.00	50.00
46M	Nenana Aviation Field	540.00	540.00
46N	Knight's Aviation Field	75.00	75.00
47A	Wiseman Aviation Field	350.00	350.00
63	Dunbar-Brooks	299.50	299.50
63B	Brooks-Amy Creek	5.40	5.40
63C	Brooks Tram	11,760.07	11,760.07
63E	Livengood Aviation Field	496.93(i)	496.93
80H	McGrath Aviation Field	650.00	650.00
80J	Medfra Aviation Field	3,179.65	3,179.65
90D	Shelter Cabins	285.00	285.00
92Q	Upper Landing-Bear Creek	8,284.14	8,284.14
	Totals	1,698.00	1,698.00
	Totals	\$ 81,653.25	\$ 83,003.68

(j)—Includes \$24.00 contributed by the Fairbanks Airplane Corporation, \$195.01 by the Fairbanks Telephone Co., \$72.00 by Bennett and Rodebaugh, and \$30.00 by the City of Fairbanks.

(i)—Includes \$1,944.95 contributed by the City of Fairbanks.

(k)—Contributed by the Fairbanks Exploration Co.

(l)—Contributed by citizens of Brooks.

SUMMARY OF FUNDS EXPENDED BY DIVISIONS.

	Federal	Territorial	Totals
First Division	\$ 21,719.28	\$ 28,226.90	\$ 49,946.24
Second Division	33,644.94	68,689.48	102,334.42
Third Division	24,395.35	38,189.22	62,584.57
Fourth Division	81,653.25	63,008.68	144,661.93
Totals	\$101,412.82	\$198,089.34*	\$359,502.16

*—Includes \$17,689.15 contributed by others.

SUMMARY OF FUNDS EXPENDED BY DISTRICTS.

District	Cooperative Funds		Total
	Federal	Territorial	
Southeastern	\$ 21,719.28	\$ 28,226.90(a)	\$ 49,946.24
Eagle		455.36	455.36
Bethel	1,698.00	3,384.00	5,082.00
Valdez	2,060.66	9,623.42(b)	11,684.07
Chitina	3,888.10	2,267.44	6,145.54
Fairbanks	56,766.83	18,772.95(c)	75,539.77
Nenana	17,606.84	18,047.43(d)	35,654.27
Southwestern	15,446.60	28,084.74(e)	43,531.34
Kuskokwim	5,593.79	19,377.56	24,971.35
Nome	34,644.94	60,269.48(f)	102,914.42
Totals	\$161,412.82	\$198,089.34	\$359,502.16

- (a)—Includes \$7,050.00 contributed by the City of Juneau, \$5.20 by the Sitka Commercial Club and \$706.76 by the National Park Service.
 (b)—Includes \$400.00, contributed by the City of Valdez, \$195.01 by the Fairbanks Telephone Co., \$72.00 by Bennett and Rodebaugh.
 (c)—Includes \$24.00 contributed by the Fairbanks Airplane Corp., \$1974.95 by the City of Fairbanks and \$6000.00 by the Fairbanks Exploration Co.
 (d)—Includes \$496.93 contributed by citizens of Brooks.
 (e)—Includes \$142.80 contributed by the City of Seward and \$75.00 by E. P. Marion.
 (f)—Includes \$296.50 contributed by the U. S. Lighthouse Service, \$250.00 by the City of Nome, and \$2.24 miscellaneous refunds.

TOTAL FUNDS.

District	Construction	Maintenance and Improvement	Total
Juneau Office and General Overhead (a)	\$ 9,696.03	\$ 18,590.00	\$ 28,286.03
Southeastern	28,271.23	23,274.79	51,546.02
Eagle	1,455.36	9,768.17	11,223.53
Bethel	4,654.00	2,606.24	7,260.24
Valdez	4,269.37	137,391.03	141,660.40
Chitina	29,078.53	222,913.43	251,992.01
Fairbanks	192,911.09	190,950.80	383,861.95
Nenana	30,591.43	45,838.08	76,429.51
Southwestern	50,292.84	68,569.60	118,862.44
Kuskokwim	20,896.35	18,661.47	39,557.83
Nome	18,723.12	84,181.30	102,904.42
Totals	\$430,923.16	\$822,745.02	\$1,253,668.18*

(a)—Includes expenses of sub-offices in Seattle, Washington, and Washington, D. C.

(*)—Includes \$2,961.34 General Accounting Office settlements. Does not include \$3,296.69 miscellaneous reimbursements.

DISTRIBUTION OF EXPENDITURES.

0111	Salaries	\$ 53,763.82
0112	Wages	625,917.66
0200	Stationery	1,840.58
02011	Printed Forms and Letterheads	13.50
0210	Medical and Hospital Supplies	337.60
0220	Scientific and Educational Supplies	108.75
0230	Fuel (including gasoline and oils)	57,718.81
0240	Wearing Apparel and Sewing Supplies	77.75
0250	Forage and Other Supplies for Animals	12,966.03
0260	Provisions	94,949.24
0270	Powder, explosives, etc.	8,693.50
0280	Sundry Supplies (including lubricants, etc.)	7,805.35
0290	Construction Materials	47,502.80
03	Subsistence (persons)	41,613.18
04	Subsistence and care of animals	396.59
0500	Telephone Service	548.96
0510	Telephone Service	1,325.45
0520	Other Communication Service (inc. P. O. box rent)	110.25
06	Travel Expense (transportation of persons, etc.)	19,232.00
07	Transportation of Freight	63,547.70
0800	Printing and Binding	1,260.36
0810	Lithographing, engraving and engrossing	159.72
0830	Photographing, Making Prints, etc.	394.64
10	Furnishing of Heat, Light, Power and Water	2,139.84
1100	Rents (building, structure, room, etc.)	1,560.00
1110	Other Rents (inc. hire of tennis, rent motor equip.)	48,608.78
12	Repairs and Alterations to Equipment, Machinery, etc.	53,192.07
13	Miscellaneous Current Expenses (inc. exchange, etc.)	3,497.80
3010	Equipment (furniture and fixtures)	2,653.27
3040	Livestock (horses, dogs, etc.)	249.00
3050	Other Equipment	50,782.61
3210	Other Structures (excavations, embankments, etc.)	41,234.43
	Treasury Settlements	\$1,254,003.63
	Totals	\$2,961.34
	Totals	\$1,256,964.97

DISTRIBUTION BY APPROPRIATIONS.

From appropriations for support of War Department:			
F. Y. 1926-28, Act of February 13, 1925	.....	.....	.....
F. Y. 1926-27, Act of April 15, 1926	.....	.....	.....
F. Y. 1927-28, Act of February 23, 1927	.....	762,722.10	
F. Y. 1928-29, Act of March 23, 1928	.....	97,422.73	
National Cemeteries, 1928	.....	792.83	
From the Alaska Fund, Act of Jan. 27, 1906, as amended	.....	134,693.11	
From Contributed Funds, Act of June 30, 1921:			
Territory of Alaska, Roads, Bridges and Trails	.....	128,188.89	
Aviation Fields	.....	21,646.83	
Shelter Cabins	.....	17,469.66	
Telephone Lines, Seward Peninsula	.....	3,264.67	
Telephone Lines, Tanana-Kaltag-Unalakleet, 4th Division	.....	2,332.54	
Telephone Lines, Tanana-Kaltag-Unalakleet, 2nd Division	.....	768.75	
Valdez Dyke	.....	6,364.05	
Gastineau Bar	.....	366.00	180,400.10
Others, City of Juneau (Juneau Wharf)			
National Park Service	.....	7,050.00	
Fairbanks Airplane Corporation	.....	706.76	
Fairbanks Telephone Company	.....	24.00	
Bennett and Rodebaugh	.....	195.01	
Fairbanks Exploration Company	.....	72.00	
Sitka Commercial Club	.....	0,000.00	
City of Valdez	.....	5.20	
Citizens of Brooks	.....	400.60	
City of Fairbanks	.....	496.93	
City of Seward	.....	1,974.96	
City of Nome	.....	142.80	
U. S. Lighthouse Service	.....	260.00	
E. P. Marion	.....	298.50	
		76.00	17,689.15
From appropriations for support of Interior Department:			
Roads and Trails, National Parks	.....	60,000.00	
Total	.....	1,263,668.18*	

*—Not including \$3,296.69 reimbursements.

DISTRIBUTION OF WAR DEPARTMENT APPROPRIATIONS BY PROCUREMENT AUTHORITY NUMBERS.

Act of February 23, 1927			
Authority No.			
"Eng. 200P-920-A1070-78"	.....	.....	.....
1387	.....	173.62	Telegrams.
3316	.....	703.21	Machinery not otherwise listed.
4275	.....	19,414.70	Repairs and alterations.
4568	.....	489,749.95	Wages—all employees.
	.....	19,252.20	Installation of roads, walks, bridges and drainage.
4586	.....	176.00	Construction of tramways, ferries and trails.
4625	.....	27,930.47	Food and lodging and miscellaneous services.
4648	.....	52,346.18	Provisions.
4822	.....	1,797.84	Sundry Office Supplies.
4845	.....	111,216.37	Supplies not listed specifically.
4930	.....	12,866.81	Transportation of equipment, etc.
5070	.....	12,238.50	Reimbursement of travel expenses (transportation of persons).
"Eng. 1P-4592-A6075-N"	.....	14,858.85	Wharf, Juneau, Alaska.
Total	.....	762,722.10	
Act of March 23, 1928			
Authority No.			
"Eng. 194P-920-A1070-89"	.....	.....	.....
1387	.....	42,807.24	Telegrams.
3316	.....	853.10	Machinery not otherwise listed.
	.....		Repairs and alterations.

4275	.....	13,634.06	Wages—all employees.
4568	.....	2,270.49	Installation of roads, walks, bridges and drainage.
4586	.....		Construction of tramways, ferries and trails.
4625	.....	931.43	Food and lodging and miscellaneous services.
4648	.....	18,929.87	Provisions.
4822	.....	389.84	Sundry Office Supplies.
4845	.....	16,335.90	Supplies not listed specifically.
4930	.....	266.85	Transportation of equipment, etc.
5070	.....	996.76	Reimbursement of travel expenses (transportation of persons).
Total	.....	\$ 97,422.73	

I. APPROPRIATIONS.

1. Construction and maintenance of Military and Post Roads, Bridges and Trails, Alaska.

Act of		Act of	
June 12, 1906	.....	July 9, 1918	.....
June 20, 1906	.....	July 11, 1919	.....
Mar. 2, 1907	.....	June 5, 1920	.....
May 11, 1908	.....	June 30, 1921	.....
Mar. 3, 1909	.....	June 30, 1922	.....
Mar. 23, 1910	.....	Mar. 2, 1923	.....
Mar. 3, 1911	.....	June 7, 1924	.....
Aug. 24, 1912	.....	Dec. 6, 1924	.....
Mar. 2, 1913	.....	Feb. 12, 1925	.....
April 27, 1914	.....	April 15, 1926	.....
Mar. 4, 1915	.....	Feb. 23, 1927	.....
Aug. 29, 1916	.....	Mar. 23, 1928	.....
May 2, 1917	.....	
Total	.....	Total	.....

- (a)—For Fairbanks-Council Survey.
- (b)—Includes \$55,000.00 for Valdez dyke.
- (c)—Includes \$16,000.00 for Nome-Keewalik Survey.
- (d)—Includes \$600.00 for survey Juneau wharf.
- (e)—Deficiency to cover increase of Compensation 1925.
- (f)—Includes \$23,500.00 for Juneau Wharf.
- (g)—Includes \$100,000.00 for Flood Control, Lowell Creek.

2. Construction and Maintenance of Wagon Roads, Bridges, and Trails, "Alaska Fund."

Fiscal Year	Amount	Fiscal Year	Amount
1905	.....	1918	.....
1906	.....	1919	.....
1907	.....	1920	.....
1908	.....	1920 (sup.)	.....
1909	.....	1921	.....
1910	.....	1922	.....
1911	.....	1923	.....
1912	.....	1924	.....
1913	.....	1925	.....
1914	.....	1926	.....
1915	.....	1927	.....
1916	.....	1928	.....
1917	.....	
Total	.....	Total	.....

3. Increase of Compensation, War Department.

Fiscal Year	Amount	Fiscal Year	Amount
1918	.....	1922	.....
1919	.....	1923	.....
1920	.....	1924	.....
1921	.....	
Total	.....	Total	.....

4. National Cemeteries.

Fiscal Year	Amount	Fiscal Year	Amount
1926	\$ 302.17	1927	\$ 300.00
1926	300.00	1928	300.00
Total		\$ 2,202.17	

5. Roads and Trails, National Parks.

Act of	Amount	Act of	Amount
March 3, 1925	\$ 80,000.00	January 12, 1927	\$ 16,000.00
May 10, 1926	60,000.00	March 7, 1928	60,000.00
Total		\$ 206,000.00	
Total Federal Appropriations		\$13,006,041.93	

II. CONTRIBUTED FUNDS.

Act of Congress approved June 30, 1921, Alaska Special Fund.

1. By the Territory:

Act of Legislature approved April 21, 1919.

Public Roads, Bridges, Trails and Ferries.

Fiscal Year:	Amount
1920	\$115,517.94
1921	85,746.61
Total	

Approved May 7, 1921, Public Roads, Bridges, Trails, and Ferries:

Fiscal Year:	Amount
1931	\$ 28,000.00
1932	43,297.28
1933	38,512.88
Total	

Approved May 5, 1921, Nizina River Bridge.

Fiscal Year:	Amount
1922	\$ 5,000.00
1923	20,000.00
Total	

Approved May 7, 1921, Shelter Cabins.

Fiscal Year:	Amount
1922	\$ 6,500.00
1923	3,500.00
Total	

Approved May 4, 1923, Public Roads, Bridges, Trails and Ferries:

Fiscal Year:	Amount
1924	\$ 91,326.35
1926	76,478.46
Total	

Approved May 4, 1923, Shelter Cabins:

Fiscal Year:	Amount
1924	\$ 16,000.00
Total	

Approved April 30, 1925, Public Roads, Bridges, Trails and Ferries:

Fiscal Year:	Amount
1926	\$113,850.00
1927	33,292.24
Total	

Approved April 30, 1925, Shelter Cabins:

Fiscal Year:	Amount
1926	\$ 2,500.00
1928	17,500.00
Total	

Approved April 30, 1925, Telephone Lines, Seward Peninsula:

Fiscal Year:	Amount
1926	\$ 2,149.10
1927	1,382.50
1928	467.60
Total	

Approved April 30, 1925, Pioneers' Cemetery Road:

Fiscal Year:	Amount
1927	\$ 3,341.02
Total	

Approved May 2, 1927, Public Roads, Bridges, Trails and Ferries:

Fiscal Year:	Amount
1928	\$163,099.02
Total	

Approved May 2, 1927, Shelter Cabins.

Fiscal Year:	Amount
1928	\$ 25,000.00
Total	

Approved May 2, 1927, Telephone Lines, Seward Peninsula.

Fiscal Year:	Amount
1928	\$ 2,796.97
Total	

Total Territory \$ 994,196.96

2. By Others:

Fiscal Year	Amount
1922	\$ 1,683.77
1923	1,379.64
1924	4,610.00
1925	883.12
1926	2,819.01
1927	6,766.63
1928	
Total	

National Park Service	\$ 706.76	
Fairbanks Airplane Corporation	24.00	
Fairbanks Telephone Co.	195.01	
Bennett and Rodabaugh	72.00	
Fairbanks Exploration Co.	6,000.00	
Sitka Commercial Club	5.20	
Citizens of Brooks	496.93	
City of Valdez	1,200.00	
City of Seward	142.80	
City of Fairbanks	1,974.95	
City of Nome	250.00	
U. S. Lighthouse Service	296.50	
Otto Halla	1,000.00	
E. P. Marion	75.00	
City of Juneau	7,050.00	19,489.15
Total others		\$ 36,551.22

3. Funds contributed for Flood Control Lowell Crank:

Territory of Alaska	\$ 10,000.00	
City of Seward	15,000.00	25,000.00
Total		

II. Total, Contributed Funds \$1,055,748.18

III. EXPENDITURE OF OTHER FUNDS SUPERVISED BY THE COMMISSION AND THE JUNEAU, ALASKA, RIVER AND HARBOR DISTRICT.

Fiscal Year 1920 and prior years\$1,221,574.09

Fiscal Year 1921:

1. For the Territory of Alaska:
Kuskulana Bridge\$ 750.00

2. For the Chief of Engineers, U. S. Army:
Rivers and Harbors, Fish Traps, etc. 1,602.50

Total\$ 2,352.50

Fiscal Year 1922:

1. For the Territory of Alaska:
Chairman, 3rd Division\$ 7,812.19
Chairman, 4th Division 21,365.00

2. For the Chief of Engineers, U. S. Army:
Rivers and Harbors, Fish Traps, etc. 47,503.46

3. For the Quartermaster General, U. S. Army:
Chilkoot Barracks water supply 2,502.02

Total\$ 79,182.67

Fiscal Year 1923:

1. For the Territory of Alaska:
Chairman, 3rd Division\$ 10,855.72
Chairman, 4th Division 15,717.11
Seward Peninsula Railroad 24,014.00

2. For the Chief of Engineers, U. S. Army:
Rivers and Harbors, Fish Traps, etc. 21,146.12

Total\$ 71,731.95

Fiscal Year 1924:

1. For the Territory of Alaska:
Chairman, 3rd Division\$ 14,993.86
Chairman, 4th Division 20,000.50
Tolovana Tram Road 6,425.00

2. For the Chief of Engineers, U. S. Army:
Rivers and Harbors, Fish Traps, etc. 97,931.56

3. For the National Park Service:
Mt. McKinley National Park Road 700.25

Total\$ 80,051.17

Fiscal Year 1925:

1. For the Territory of Alaska:
Chairman, 3rd Division\$ 11,806.14
Chairman, 4th Division 9,000.00
Kaltag Portage Survey 312.72

2. For the Chief of Engineers, U. S. Army:
Rivers and Harbors, Fish Traps, etc. 51,417.89

3. For the Quartermaster General, U. S. Army:
Chilkoot Barracks Water Supply 2,600.00

Total\$ 78,036.75

Fiscal Year 1926:

1. For the Territory of Alaska:
Chairman, 3rd Division\$ 9,332.86
Chairman, 4th Division 12,360.00

2. For the Chief of Engineers, U. S. Army:
Rivers and Harbors, Fish Traps, etc. 47,521.95

3. For the Quartermaster General, U. S. Army:
Chilkoot Barracks Water Supply 5,000.00

4. Miscellaneous; 8,276.25

Total\$ 83,041.06

Fiscal Year 1927:

1. For the Territory of Alaska:
Chairman, 3rd Division\$ 13,052.15
Chairman, 4th Division 13,844.42

2. For the Chief of Engineers, U. S. Army:
Rivers, Harbors, Fish Traps, etc. 129,169.18

3. For the Quartermaster General, U. S. Army:
Chilkoot Barracks Water Supply 1,073.89

4. Miscellaneous; 3,218.00

Total\$ 160,302.61

Fiscal Year 1928:

1. For the Territory of Alaska:

Acct. No.	Name	Miles	Expenditure
	Overhead		\$ 70.00
10B	Seward-Nash	2 1/2	500.00
35C	Palmer-Matanuska River	1 1/2	153.50
35G	Palmer-Springer	3	427.51
35I	Moose-Palmer	8	3,826.50
35L	Palmer-Matanuska	6 1/2	2,868.17
35Q	Edlund Road	3 1/2	1,468.00
35R	Bogard Road	7 1/2	3,970.00
75A	Anchorage-Lake Spenard	4	864.66
75C	Chester Creek Boat Landing	1	30.00
Total by Chairman, 3rd Division			34 1/2 \$ 13,975.31

Acct. No.	Name	Miles	Expenditure
	Overhead		\$ 55.00
7AA	Cleary Creek Road	2	500.00
7B	Olmes-Dome Creek	5	500.00
7C	Summit-Fairbanks Creek	13	1,360.41
7CA	Lower Fish Creek Road	2 1/2	2,776.16
7DA	College Spur	2 1/2	83.79
7DB	Ester Dome Road	2	3.85
7DC	St. Patrick's-Happy	3 1/2	2,569.17
7DD	Ester-Beegler	3 1/2	500.00
7EA	Lazelle Road	2 1/2	500.00
7N	Farmer's-Hitch Hill	4 1/2	2,731.35
7NA	Isabella Creek	1 1/2	99.93
7NB	Bullaine-Rickert	1	97.86

7S	Grechl Bridge	21.84	
7T	Farmer's-Chena Slough	5	2,730.03
15A	Central House-Circle Hot Springs	9	400.00
15E	Miller House Spur	¼	1,559.55
15B	Eagle Creek Spur	1	81.17
Total by Chairman, 4th Division		57½	\$ 17,570.41

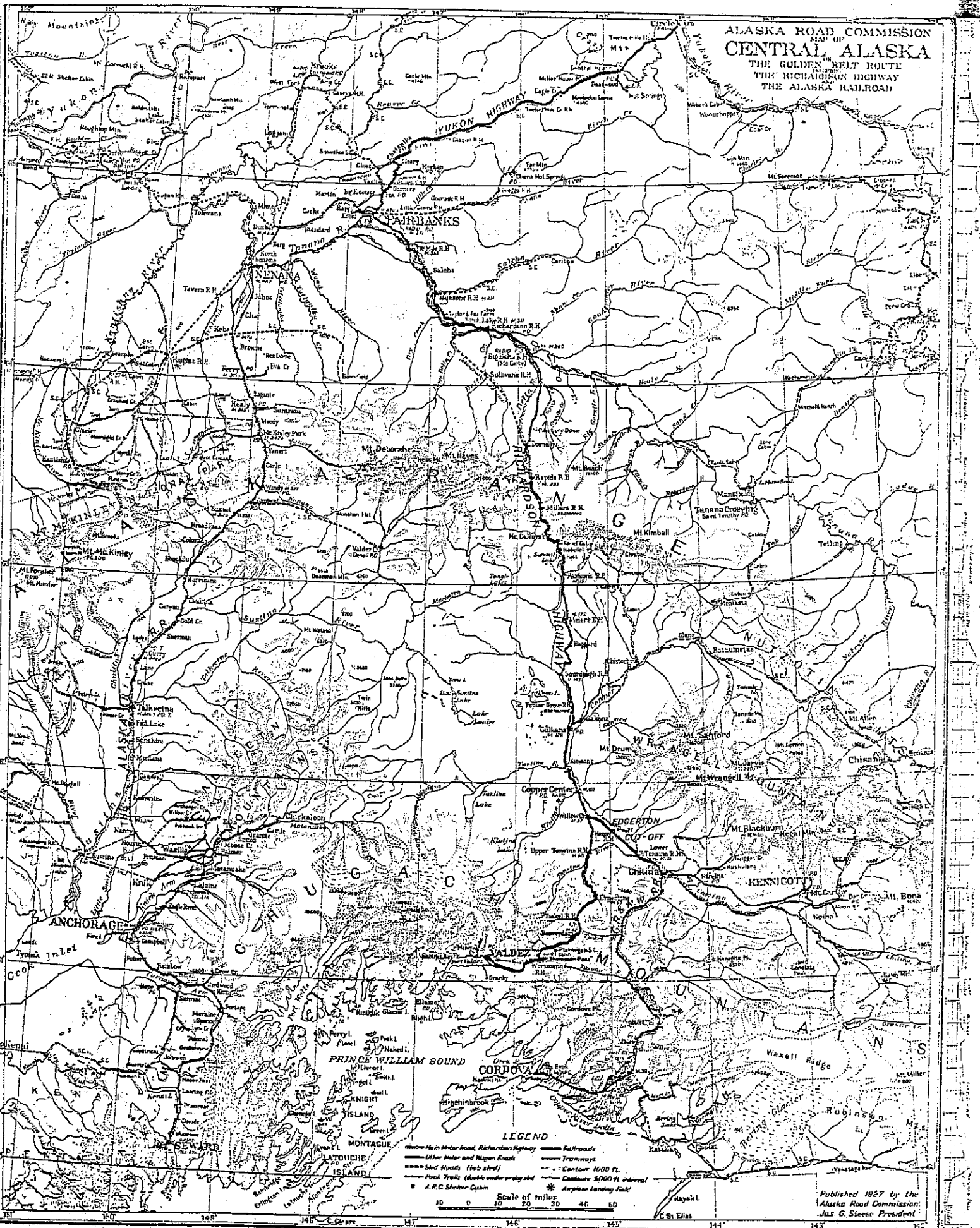
2. For the Chief of Engineers, U. S. Army:

Improvement of Nome Harbor	\$ 22,627.59
Improvement of Wrangell Harbor	74.83
Improvement of Wrangell Narrows	340,057.15
Preliminary Examination of Atognak	250.00
Preliminary Examination and Survey of Nome Harbor	350.00
Preliminary Examination and Survey of Dry Pass	1,077.47
Preliminary Examination of Cordova Harbor	217.63
Preliminary Examination of Fort Frederick	250.00
Preliminary Examination of Portage Bay and adjacent bays	250.00
Preliminary Examination of Sitka Harbor	235.37
Preliminary Examination of Anchorage Harbor	150.00
Preliminary Examination and Survey of Gastineau Channel	1,020.61
Preliminary Examination of William Henry Bay	250.00
Removing Sunken Vessels	99.34
Public Hearings, Fish Traps, etc.	8,880.14
Total for Rivers and Harbors, Fish Traps, etc.	\$ 375,890.13

3. Miscellaneous:

Lake Spenard Aviation Field	\$ 100.00
Curry Aviation Field	2,500.00
Livengood Aviation Field	400.00
Chandalar Aviation Field	615.00
Nenana Aviation Field	180.00
Total	\$ 3,795.00
Total Supervised Funds F. Y. 1928	411,230.38
III. Total Supervised Funds	\$ 2,187,563.71
Grand Total, All Funds	\$16,249,363.72

ALASKA ROAD COMMISSION
 CENTRAL ALASKA
 THE GOLDEN BELT ROUTE
 THE RICHARDSON HIGHWAY
 THE ALASKA RAILROAD



LEGEND

— Main Road, Richardson Highway — Railroads
 — Other Main and Highways — Trails
 — Steep Roads (not shown) — Contour 1000 ft.
 — Post Trails (dashed under original) — Contour 5000 ft. interval
 ■ A.R.C. Shelter Cabin * Airplane Landing Field

Scale of miles
 0 20 40 60

Published 1927 by the
 Alaska Road Commission,
 JAS. G. STREEB, President

ALASKA ROAD COMM.

MAP OF

ALASKA

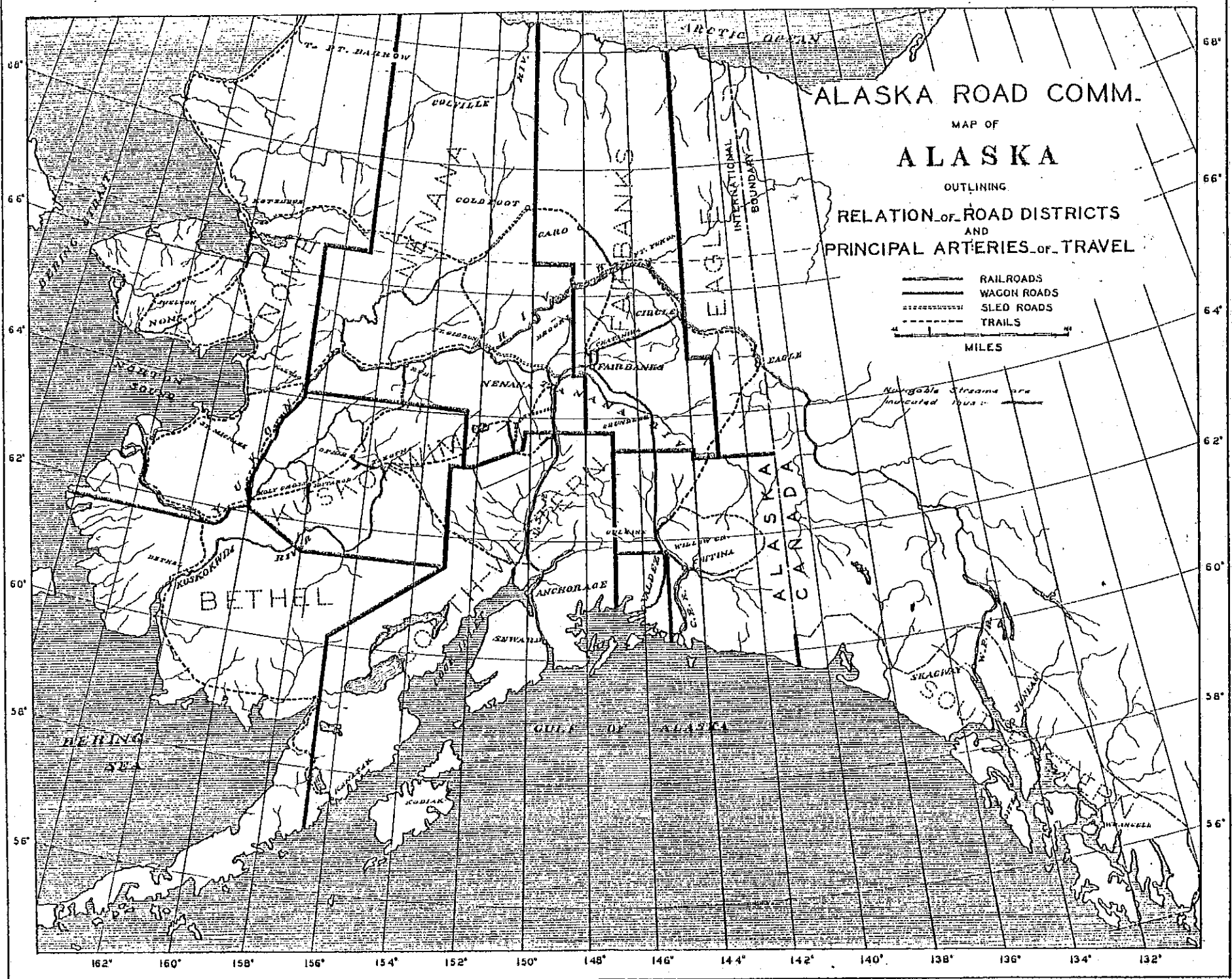
OUTLINING

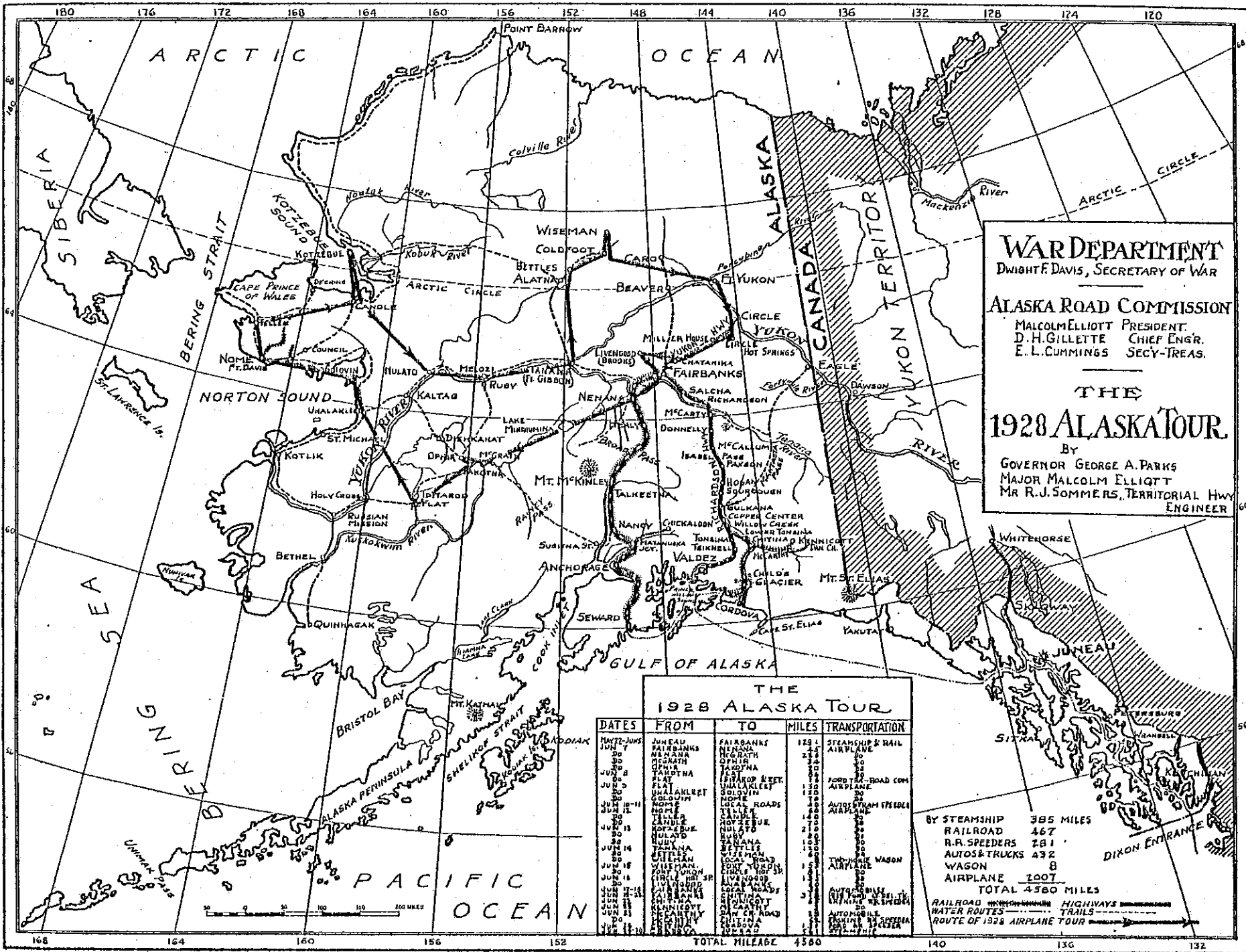
RELATION OF ROAD DISTRICTS
AND
PRINCIPAL ARTERIES OF TRAVEL

- RAILROADS
- WAGON ROADS
- SLED ROADS
- TRAILS

———— MILES

Navigable streams are indicated thus: ————





WAR DEPARTMENT
 DWIGHT F. DAVIS, SECRETARY OF WAR

ALASKA ROAD COMMISSION
 MALCOLM ELLIOTT, PRESIDENT.
 D. H. GILLETTE, CHIEF ENGR.
 E. L. CUMMINGS, SECY.-TREAS.

THE 1928 ALASKA TOUR

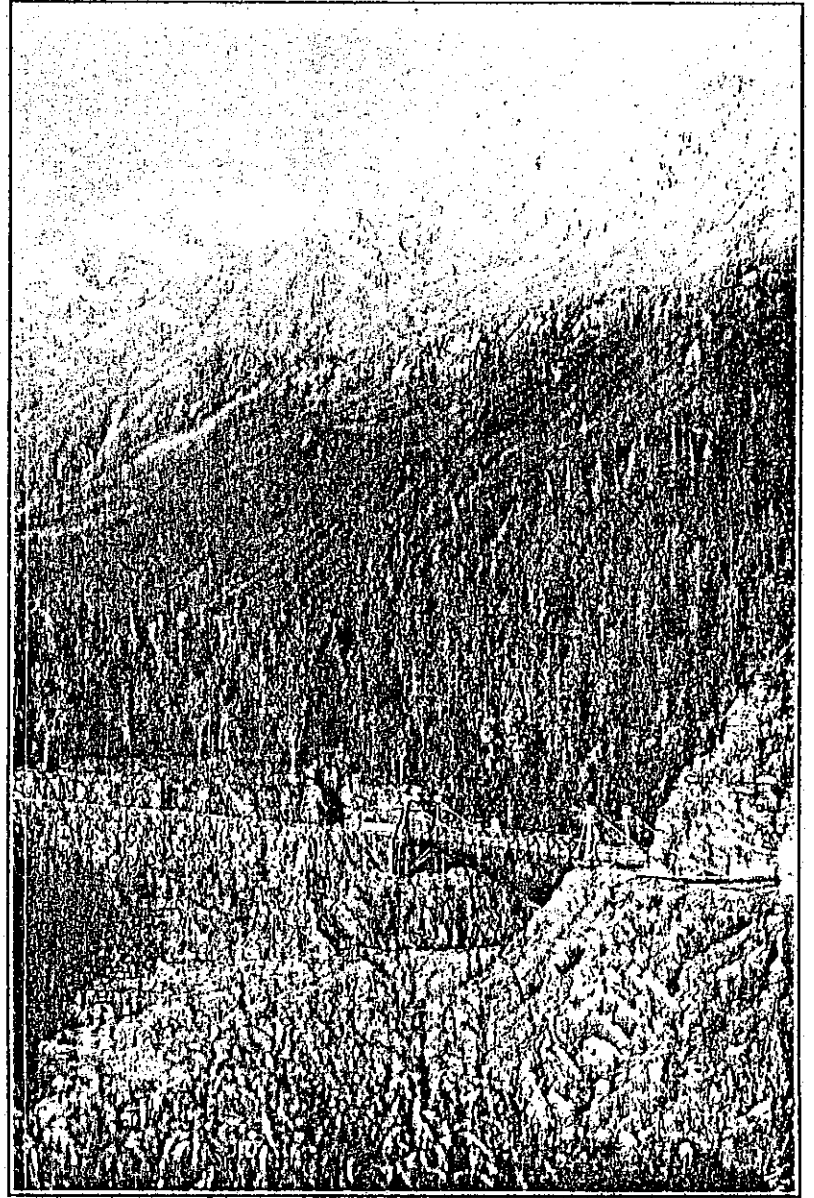
BY
 GOVERNOR GEORGE A. PARKS
 MAJOR MALCOLM ELLIOTT
 MR. R. J. SOMMERS, TERRITORIAL HWY ENGINEER

THE 1928 ALASKA TOUR

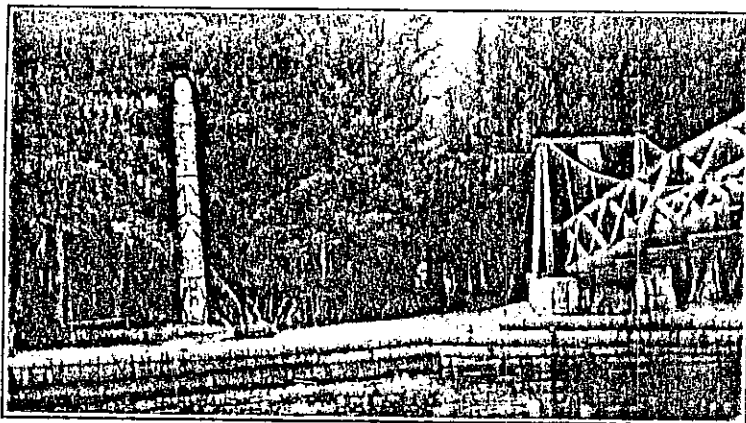
DATES	FROM	TO	MILES	TRANSPORTATION
MAY 22-JUNE 5	JUNEAU	FAIRBANKS	123 1/2	STEAMSHIP & RAIL
JUN 7	FAIRBANKS	NENANA	12 1/2	AIRPLANE
JUN 10	NENANA	HEGRAH	24 1/2	"
JUN 13	HEGRAH	OPHIR	30	"
JUN 16	OPHIR	TAPOFNA	30	"
JUN 18	TAPOFNA	FLAT	30	"
JUN 20	FLAT	STAROP RSET.	30	"
JUN 22	STAROP RSET.	UNALAKLEET	30	ROAD COM.
JUN 24	UNALAKLEET	GOLQUIN	120	AIRPLANE
JUN 26	GOLQUIN	NOME	120	"
JUN 28	NOME	LOCAL ROADS	120	AUTO & TRAM SPEEDER
JUN 30	LOCAL ROADS	TILLIE	120	AIRPLANE
JUL 2	TILLIE	CANDLE	120	"
JUL 4	CANDLE	NOY ZEBUE	120	"
JUL 6	NOY ZEBUE	HULATO	120	"
JUL 8	HULATO	MELOZ	120	"
JUL 10	MELOZ	CHATANIKA	120	"
JUL 12	CHATANIKA	FAIRBANKS	120	"
JUL 14	FAIRBANKS	WISMAN	120	"
JUL 16	WISMAN	COLD FOOT	120	"
JUL 18	COLD FOOT	CIRCLE	120	"
JUL 20	CIRCLE	YUKON	120	"
JUL 22	YUKON	FAIRBANKS	120	"
JUL 24	FAIRBANKS	LOCAL ROADS	120	"
JUL 26	LOCAL ROADS	FAIRBANKS	120	"
JUL 28	FAIRBANKS	FAIRBANKS	120	"
JUL 30	FAIRBANKS	FAIRBANKS	120	"
AUG 1	FAIRBANKS	FAIRBANKS	120	"
AUG 3	FAIRBANKS	FAIRBANKS	120	"
AUG 5	FAIRBANKS	FAIRBANKS	120	"
AUG 7	FAIRBANKS	FAIRBANKS	120	"
AUG 9	FAIRBANKS	FAIRBANKS	120	"
AUG 11	FAIRBANKS	FAIRBANKS	120	"
AUG 13	FAIRBANKS	FAIRBANKS	120	"
AUG 15	FAIRBANKS	FAIRBANKS	120	"
AUG 17	FAIRBANKS	FAIRBANKS	120	"
AUG 19	FAIRBANKS	FAIRBANKS	120	"
AUG 21	FAIRBANKS	FAIRBANKS	120	"
AUG 23	FAIRBANKS	FAIRBANKS	120	"
AUG 25	FAIRBANKS	FAIRBANKS	120	"
AUG 27	FAIRBANKS	FAIRBANKS	120	"
AUG 29	FAIRBANKS	FAIRBANKS	120	"
AUG 31	FAIRBANKS	FAIRBANKS	120	"
TOTAL MILEAGE			4380	

BY STEAMSHIP 385 MILES
 RAILROAD 467
 R.R. SPEEDERS 281
 AUTOS & TRUCKS 432
 WAGON 8
 AIRPLANE 2007
TOTAL 4580 MILES

RAILROAD ROUTES HIGHWAYS
 WATER ROUTES TRAILS
 ROUTE OF 1928 AIRPLANE TOUR



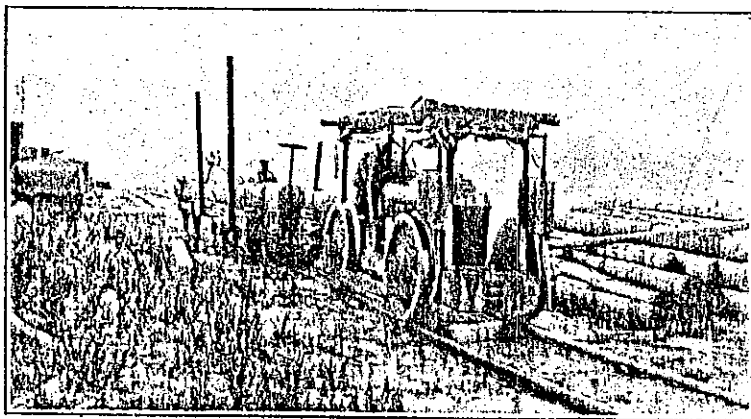
BEAR CREEK BRIDGE, RICHARDSON HIGHWAY



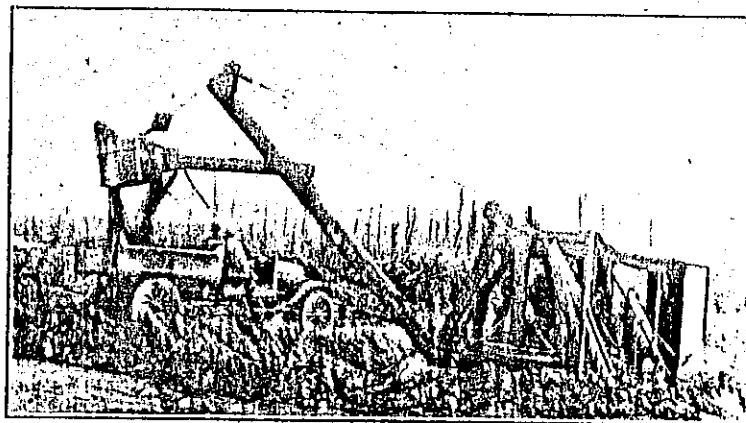
SUSPENSION FOOTBRIDGE AND BULKHEAD, INDIAN RIVER,
SITKA NATIONAL MONUMENT



305-FOOT SUSPENSION BRIDGE, CHULITNA RIVER



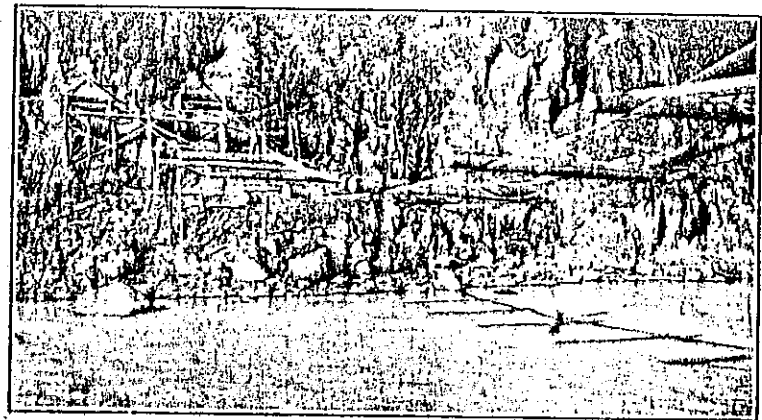
GAS LOCOMOTIVE, NOME-SHELTON TRAM



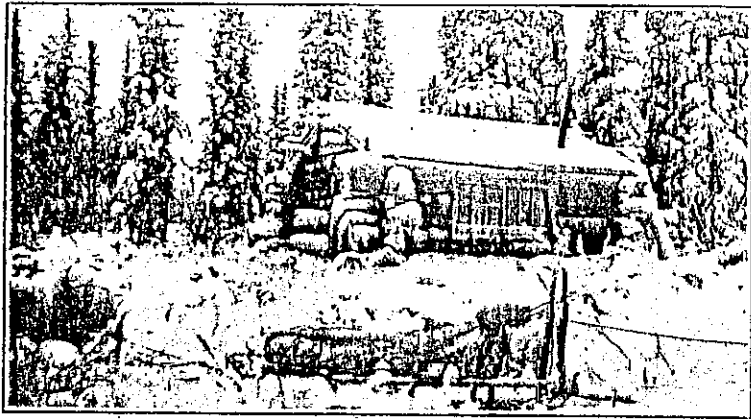
BEAR CAT SHOVEL IN OPERATION, RICHARDSON HIGHWAY



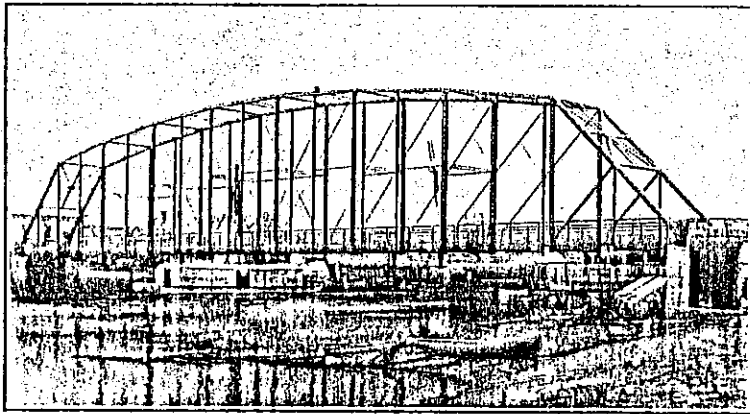
TESTING 12-FOOT GRADER, YUKON HIGHWAY



SUSPENSION BRIDGE, KOTSINA RIVER PACK TRAIL,
DURING CONSTRUCTION



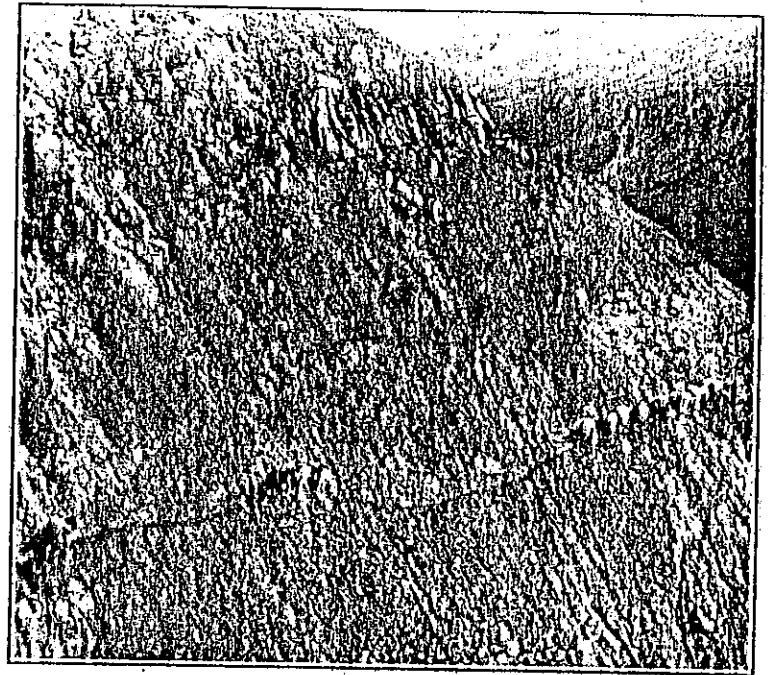
KIWALIK SHELTER CABIN, UNALAKLEET-KOTZEBUE MAIL TRAIL



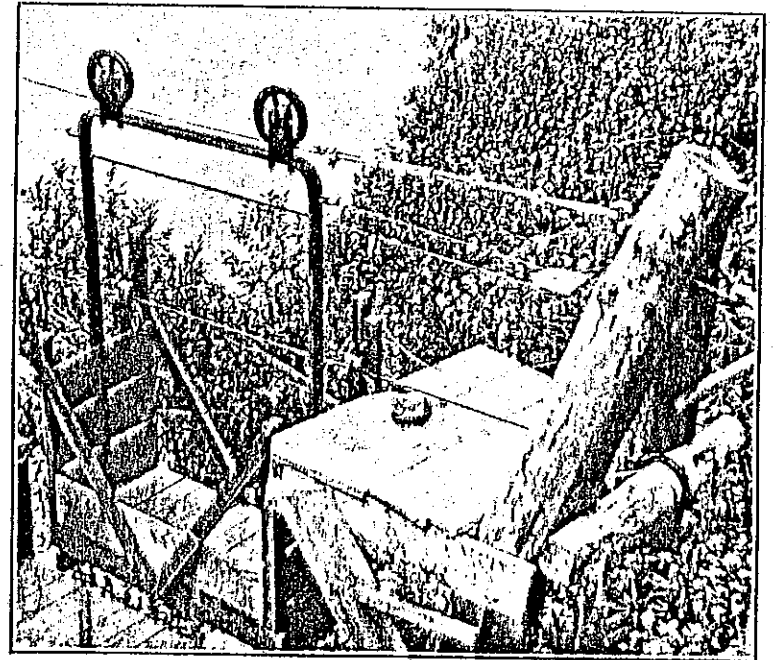
BRIDGE OVER CHENA SLOUGH, FAIRBANKS, SPAN 300 FEET



YUKON HIGHWAY AT MILE 35



PACK TRAIN ON "GOAT TRAIL"



CABLE CAR AT FISH POINT, KLEHINI RIVER