Report upon the construction and maintenance ...

United States. Alaska Road Commission, ...

Appropriations to June 30, 1921:	
Construction and maintenance of military and post roads, bridges, and trails, Alaska	$3,830,000.00
Wagon roads, bridges, and trails, Alaska fund	2,422,871.88
Increase of compensation, military establishment	1,035.20
Receipts from sales, etc	48,694.14
Refunds to Alaska fund	1,326.68
Refunds to Army appropriations	291.80
Reimbursement from Navy Department	3,976.19
Sales to accrue to Alaska fund	3,958.65
Funds contributed by Territory of Alaska for public roads, bridges, trails, and ferries, Alaska special fund	229,264.55
Total	6,541,469.09

Fiscal year ending June 30.	1917	1918	1919	1920	1921
Expended for improvement and new work	$374,738.90	$322,591.73	$114,829.11	$185,190.66	$432,243.90
Expended for maintenance	202,009.00	[1]274,573.65	184,195.15	173,410.59	234,545.18
Total expended	576,747.90	[1]597,165.38	299,024.26	358,601.25	666,789.08
Appropriated by Army act	500,000.00	500,000.00	100,000.00	100,000.00	350,000.00
Allotted from Alaska fund	76,716.15	272,020.18	52,372.31	124,992.96	218,237.10
Contributed by Territory of Alaska				115,517.94	113,746.61
Increase of compensation, military establishment		[2]145.20			940.00
Total	576,716.15	772,165.38	152,372.31	340,510.90	682,923.71

[1] Includes $145.20 omitted in 1918 report. [2] Omitted in 1918 report.

July 1, 1920, balance available		$586,242.95
Amount appropriated by Army act approved June 30, 1921		425,000.00
Amount accrued to Alaska fund during fiscal year 1921		137,122.14
Amount contributed by Territory of Alaska		50,579.47
Receipts from sales, etc., during fiscal year 1921		4,311.65
Increase of compensation, military establishment, 1921		940.00
Total resources		1,204,196.21
June 30, 1921, amount expended during fiscal year, including receipts from sales, etc.:		
New work	$432,243.90	
Maintenance	234,545.18	
		666,789.08
July 1, 1921, balance unexpended		537,407.13
July 1, 1921, outstanding liabilities		110,000.00
July 1, 1921, balance available		427,407.13
Amount available from Army act approved June 30, 1921		425,000.00
Amount available from Alaska fund on June 30, 1921		77,980.47
Amount available from funds contributed by the Territory of Alaska, June 30, 1921		30,468.01
Receipts from sales, etc., during fiscal year 1921		3,958.65
Amount available for fiscal year ending June 30, 1922		537,407.13
Amount (estimated) required to be appropriated for completion of existing project		[3]10,000,000.00
Amount that can be profitably expended in fiscal year ending June 30, 1923:		
For new work		[3]698,500.00
For maintenance		[3]501,500.00
Total		[3]1,200,000.00

[3] Exclusive of available funds.

* * * * * * *

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1923

EXTRACT

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

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1923

zz

[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 5, 1922.

* * * * * * *

BOARD OF ROAD COMMISSIONERS FOR ALASKA.

OFFICERS OF THE BOARD.

President: Maj. James G. Steese, Corps of Engineers, United States Army, retired.

Engineer officer: Maj. John C. Gotwals, Corps of Engineers, United States Army.

Secretary and disbursing officer: Capt. C. S. Ward, Corps of Engineers, United States Army, to May 2, 1922; and Capt. Aubrey H.

Bond, Corps of Engineers, United States Army, May 3, 1922, to date.

Military assistant, under the immediate orders of the president of the board: Capt. C. S. Ward, Corps of Engineers, United States Army, May 3, 1922, 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" (33 Stats. 616), and amended by act of May 14, 1906 (34 Stats. 192), prescribes in section 2 as follows:

> That there shall be a board of road commissioners in said district to be composed of an Engineer officer of the United States Army to be detailed and appointed by the Secretary of War, and two other officers of that part of the Army stationed in said district and to be designated by the Secretary of War. The said Engineer officer shall, during the term of his said detail and appointment, abide in said district. The said board shall have the power, and it shall be their duty, upon their own motion or upon petition, to locate, lay out, construct, and maintain wagon roads and pack trails from any point on the navigable waters of said district to any town, mining, or other industrial camp or settlement, or between any such town, camps, or settlements therein, if in their judgment such roads or trails are needed and will be of permanent value for the development of the district, but no such road or trail shall be constructed to any town, camp, or settlement which is wholly transitory or of no substantial value or importance for mining, trade, agricultural, or manufacturing purposes.
>
> * * * * * * *
>
> The 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 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 operations, 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.

The act of Congress approved March 3, 1911 (36 Stat. 1052), also contains the following language:

> *Provided*, That hereafter the Secretary of War may, in his discretion, assign suitable retired officers of the Army to active duty as members of the board of road commissioners for Alaska, and in the case of any officer so assigned the provisions of so much of the act of Congress approved April 23, 1904, entitled "An act making appropriations for the support of the Army for the fiscal year ending June 30, 1905, and for other purposes," as relates to the assignment of retired officers to active duty, shall apply.

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, Nenana, Anchorage, Seward, Takotna, and Nome, Alaska; Seattle, Wash.; and Washington, D. C.

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 operations, 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.

The act of Congress approved March 3, 1911 (36 Stat. 1052), contains the following language:

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.

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, Nenana, Anchorage, Seward, Takotna, and Nome, Alaska; Seattle, Wash.; and Washington, D. C.

LOCATION AND DESCRIPTION.

The work thus far acomplished includes the construction of 1,323¾ miles of wagon road, 1,115 miles of sled road, 6,150½ miles of permanent trail, and 712 miles of temporary flagged trail, a total of 9,301¼ 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 very little level area. The seaward slope, as far west as Cook Inlet, is especially rugged and subjected to a very heavy rain and snow fall.

The timber along the coast attains a very dense growth but in the interior is only to be found 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 or 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.

In the summers of 1885, 1898, and 1899 War Department expeditions under Captains Abercrombie and Glenn and Lieutenants Allen and Herron made explorations which collected much valuable data regarding the country and the best natural routes of travel. For the fiscal year 1901 Congress appropriated $100,000 for roads and bridges in Alaska, to be spent on the route leading from Valdez to Eagle, but this was sufficient only for the construction of a crude pack trail through sections otherwise impassable and the building of some of the most necessary bridges along the route. (Act of May 26, 1900, 31 Stat. 214, and act of June 30, 1902, 32 Stat. 507.)

The act of April 23, 1904 (33 Stat. 271), appropriated $25,000 for a survey and estimate for a wagon road along this route. A supplemental appropriation of $5,700.63 was made in the act of March 3, 1905 (33 Stat. 1225), for the completion of the work. The survey was made under the direction of the Chief of Engineers prior to the organization of the board. In the same acts an appropriation of $2,500 was made for a survey and estimate for a military trail between the Yukon River and Coldfoot, on the upper Koyukuk River, followed by a supplemental appropriation of $1,431.15 for the completion of this work. This survey was also made under the direction of the Chief of Engineers.

The act of April 27, 1904 (33 Stat. 391),[1] provided for local territorial road work and authorized each United States commissioner to appoint a road overseer for his precinct. Road districts were created corresponding to the precincts, such districts not to include incorporated cities and towns. The road commissioner served for one year and received $4 per day for his services, not to exceed 10 days within any one year. Revenues were provided by requiring all male persons between the ages of 18 and 50 years, of 30 days or more residence within the Territory, to perform in each year 2 days' work of 8 hours each and furnish implements or to hire substitutes

[1] This law remained in effect until Apr. 5, 1913, upon which date it was repealed by an act of the Territorial legislature (chap. 3, Session Laws 1913). While it was in force a great deal of work on local projects was accomplished, but no general scheme of construction was devised, nor was there any coordination among the activities of the various road commissioners. In some districts superintendents of the Board of Road Commissioners for Alaska supervised the work, but the board was never charged with authority or responsibility for handling it generally.

to perform the work or to contribute in cash at the rate of $4 per day.

The act approved January 27, 1905, authorizing the organization of the board of road commissioners, committed to the board general power to locate, lay out, construct, and maintain wagon roads and pack trails of permanent value for the development of the Territory. The funds for the work were to be provided by the allotment of a fixed percentage of a revenue known as the Alaska fund, derived from vocational and trade licenses outside of incorporated towns. This fund proved to be so inadequate and uncertain in amount that the matter was taken up by the Secretary of War with Congress. Appropriations in aid of the work were made for the fiscal year 1907, and have since been continued from year to year.

The early operations of the board were largely devoted to the construction of the military and post road from Valdez, on the southern coast, to Fairbanks, an interior point about 370 miles to the northward and to the construction of roads and trails connecting some of the more important localities in the Territory.

With the commercial development of the Territory the roads originally constructed chiefly for military purposes became more and more important for commercial purposes, particularly as they, themselves, have made possible the development of commercial activities and industrial enterprises in the regions they traverse.

By 1913 sufficient work had been done to warrant consideration of a general program of road and trail development. After a general study of the situation the board submitted a recommendation that $7,250,000 be appropriated during the next 10 years so as to provide Alaska with a complete road system, such as immediate needs justified and sufficient to meet all reasonable demands until the Territory should be sufficiently developed to take over internal public works as a part of its own government. This recommendation was to provide for:

(*a*) The maintenance of the existing routes.
(*b*) Completion of the projects already undertaken.
(*c*) Completion of projects already approved but not yet undertaken.
(*d*) Completion of projects likely to arise with the development during the succeeding 10 years.

PROJECT OF 1913.

Amounts required each year of 10-year period of road and trail development.

Fiscal year.	Maintenance existing roads.	Completion projects already undertaken.	Projects already approved, but not yet undertaken.	Projects that would arise with development of the Territory.	Total.	Amount actually appropriated.
1914	$125,000	$500,000	$250,000	.....	$875,000	$155,000
1915	125,000	250,000	750,000	$400,000	1,525,000	125,000
1916	125,000	250,000	750,000	350,000	1,475,000	165,000
1917	125,000	100,000	250,000	300,000	775,000	500,000
1918	125,000	100,000	200,000	250,000	675,000	500,000
1919	125,000	100,000	200,000	200,000	625,000	100,000
1920	125,000	30,000	200,000	150,000	505,000	100,000
1921	125,000	30,000	60,000	100,000	315,000	350,000
1922	125,000	30,000	60,000	50,000	265,000	[1] 425,000
1923	125,000	30,000	60,000	.....	215,000	[1] 465,000
Total	1,250,000	1,420,000	2,780,000	1,800,000	7,250,000	2,885,000

[1] Appropriated under project of 1920, described under "Existing project" below.

At the close of the fiscal year ended June 30, 1920, seven years of the ten-year period had elapsed and the average appropriations had actually been less than one-half of the $725,000 per year recommended and less than 30 per cent of the total recommended for the first seven years. For the two years immediately preceding the war $500,000 was appropriated each year (Army acts of 1916 and 1917), the program was well launched, and the act of July 9, 1918, definitely authorized the Secretary of War to submit estimates hereafter for the proper prosecution of this work. For the two war years, however, the appropriations, including the allotments from the Alaska fund, were only about one-fourth of the average amount recommended. The high prices and wages during the war years greatly curtailed the work and affected construction and maintenance of Alaskan roads almost as seriously as the meager funds available. In addition, Alaska received a very severe economic setback during the war and was prevented by Government interdiction from developing its internal resources to the extent contemplated in 1913.

As a result, large sections of the old system were not even kept in repair and some sections became impassable. During the fiscal year 1920 expenditures were made for repair and maintenance upon less than one-half of the total mileage.

For more extended information concerning the operations under previous projects see the annual reports of the Board of Road Commissioners for Alaska for 1909, 1913, and 1917, and the Annual Reports of the Chief of Engineers, United States Army, for 1918, 1920, and 1921.

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 proposed annual appropriations and the amounts annually appropriated to date are shown in the following table:

1920 PROGRAM.

Amounts required each year of the 10-year period of road and trail development.

Fiscal year.	Working season.	Amount estimated.	Amount actually appropriated.
First (1922)	1921	$955,000	$425,000
Second (1923)	1922	1,200,000	465,000
Third (1924)	1923	1,500,000	650,000
Fourth (1925)	1924	1,600,000	.....
Fifth (1926)	1925	1,400,000	.....
Total for first 5 years	.....	6,655,000	.....

Amounts required each year of the 10-year period of road and trail development—Continued.

Fiscal year.	Working season.	Amount estimated.	Amount actually appropriated.
Sixth (1927)	1926	$1,045,000	.....
Seventh (1928)	1927	750,000	.....
Eighth (1929)	1928	600,000	.....
Ninth (1930)	1929	500,000	.....
Tenth (1931)	1930	450,000	.....
Total for second 5 years	.....	3,345,000	.....
Total for 10 years	.....	10,000,000	.....

General indorsement of this program has been given by Federal interests as follows:

The Alaska advisory committee, consisting of representatives of the Department of the Interior, the Department of Agriculture, the Post Office Department, and the United States Shipping Board reported that "the construction of wagon roads and trails is one of the most important and urgent needs of Alaska" and recommended "an appropriation of at least $1,000,000 annually until the completion of an adequate road system in Alaska."

In May, 1921, the Inter-Departmental Alaska Board, consisting of representatives of each of the Federal executive departments, recommended: "That approval be given the general program of road construction submitted by the Alaska Road Commission in its Annual Report for 1920, and that definite adoption of the proposed program be urged before Congress, with a view of providing feeders to the Government railway as well as for the general development of the Territory."

The original plan of providing the money necessary for carrying on the work of the board is found in the act of January 27, 1905, which authorized the expenditure for the construction and maintenance of wagon roads, bridges, and trails in said district of 70 per cent, reduced by act of March 3, 1913, to 65 per cent, of what is known as the Alaska fund, derived from vocational and trade licenses outside of incorporated towns. This fund proved to be so inadequate and uncertain in amount that special appropriations in aid of the work were made for the fiscal year 1907, and appropriations have since been made from year to year.

Prior to 1919 the appropriations were available only for the fiscal year specified in the appropriation act. The construction season is very short, however, distances are great and communication is difficult. Supplies must therefore be purchased in advance and in many cases freighted in over the snow during the winter. Work can not be economically started after July 1 nor stopped and then started up again. These conditions necessitate making preparations for the operations of the season some time previous to the beginning of the fiscal year. The appropriation act of July 11, 1919, and the appropriations made since that date, have therefore included a provision that the funds shall be immediately available. Delay of the work on account of the lack of funds has also been occasioned, however, by the fact that appropriation bills were not passed until near or after the beginning of the fiscal year. To guard against such possibility

for the season of 1922 House Joint Resolution 282, approved April 6, 1922, provides as follows:

The Secretary of War is authorized to direct the Board of Road Commissioners for Alaska to incur obligations prior to July 1, 1922, for the construction and maintenance of roads, bridges, trails in Alaska of not to exceed 50 per cent of the appropriation for this purpose for the fiscal year ending June 30, 1922, payment of these obligations to be made from the appropriations for the fiscal year ending June 30, 1923.

Upon June 30, 1922, the date the appropriation for the current fiscal year became available, obligations amounting to $17,146.76 had been incurred under the provisions of the above joint resolution.

A similar provision for the season of 1923 was made by a paragraph, as follows, in the appropriation act approved June 30, 1922:

Provided, That if an appropriation for this purpose for the fiscal year ending June 30, 1924, shall not have been made prior to March 1, 1923, 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 ending June 30, 1923, payment of these obligations to be made from the appropriation for the fiscal year ending June 30, 1924.

The appropriation for the fiscal year 1924 was made in the act approved March 2, 1923, which carries similar language for the working season of 1924.

Though an item in aid of this work has been included each year in the appropriation bill for the support of the Army, the item was subject to a point of order prior to July 9, 1918, and was several times seriously endangered. In 1918 the Secretary of War finally announced he would submit no further estimates for the continuation of this work unless specifically authorized to do so. As a result the act of July 9, 1918 (40 Stat. 863) contains the following language:

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 the proper prosecution of the work.

Since that date, therefore, the Secretary of War has been definitely charged with responsibility for the submission of estimates for the construction and maintenance not only of "military and post" roads in Alaska, but of "other roads, bridges, and trails" as well. The act approved June 30, 1922, making appropriations for the activities of the War Department transferred the item to Title II, Nonmilitary Activities. The work will therefore no longer be a charge against the support of the Army.

The special acts of Congress authorizing and defining the scope of the work and the duties of the board and authorizing the submittal of estimates to Congress are as follows:

Act approved January 27, 1905 (33 Stat. 616).
Act approved May 14, 1906 (34 Stat. 192).
Act approved March 3, 1911 (36 Stat. 1052).
Act approved March 3, 1913 (37 Stat. 728).
Act approved July 9, 1918 (40 Stat. 843).
Act approved June 30, 1921.
H. J. Res. approved April 6, 1922.
Act approved June 30, 1922.
Act approved March 2, 1923.

For latest published maps see map following page 54, Part II, of the annual report of the Alaska Road Commission fiscal year 1921,

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.

"Road construction under the Alaska Commission," by Col. James G. Steese, The Highway Magazine, January, 1923, pages 11–12, illustrated; "Across Alaska by Automobile," by Col. James G. Steese, F. R. G. S., American Motorist, March, 1923, pages 12, 13, and 24, illustrated; "Recent Developments in Alaska," by Maj. John C. Gotwals, The Tech. Engineering News, April, 1923, pages 13 and 24, illustrated; "The Alaska Road Commission," by Col. James G. Steese, The Michigan Technic, March, 1923, pages 11–14, illustrated.

LOCAL COOPERATION.

The Federal funds disbursed are obtained from an annual appropriation, "Construction and maintenance of military and post roads, bridges, and trails, Alaska," and from receipts from the Alaska fund by act of Congress approved January 27, 1905, and amended by act approved May 14, 1906. About 40 per cent of the total cost of the road and trail system has been paid from the Alaska fund which is derived from Federal trade and occupational taxes collected outside of incorporated towns in Alaska.

As an indication of the close harmony and cooperation existing between this board and the Territory of Alaska, the following résumé of the Session Laws of Alaska is given:

[Act of Apr. 21, 1919: To provide for the construction, maintenance, and protection of public roads, bridges, trails, and ferries and property pertaining to public roads in the Territory of Alaska, etc.]

* * * * * * *

SEC. 2. The Territorial board of road commissioners shall have authority to enter into cooperative agreements with the Federal Board of Road Commissioners for Alaska, * * * for the construction, repair, and maintenance of any public road, bridge, or ferry, within the Territory of Alaska. In the case of cooperative work, the Territorial treasurer is authorized to deposit in the United States Treasury the funds agreed upon to cover the share of the Territorial road commission in such cooperative projects as are entered into, in accordance with the provisions of this act. Such funds shall be expended by the disbursing officer of the Federal authority designated in the cooperative agreement, and a detailed statement of expenditures from such funds so deposited, shall, upon the completion of the project for which they were deposited, be furnished to the Territorial treasurer.

* * * * * * *

SEC. 7. It shall be the duty of the divisional road commission to meet at a specified time and recommend the apportionment of road funds to the credit of the aforesaid division, so that such funds will not conflict with the apportionment allotted by the Federal Board of Road Commissioners for Alaska.

* * * * * * *

SEC. 17. On and after March 1, 1921, in each Territorial road division there shall be a divisional road commission consisting of three members, two of whom shall be elected as provided by law, and one shall be appointed by the Territorial board of road commissioners for a term of two years, or until his successor be appointed and qualified, who shall serve without pay or emolu-

mission; receive and account for all funds and property turned over to him as provided by law. He shall be a competent civil engineer, qualified by training and practical experience in highway engineering, * * *.

The above act immediately released cooperative funds of the Department of Agriculture which had been accumulating for several years. Until July 1, 1920, Maj. Wm. H. Waugh, Engineers, 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 on all work in Alaska coming under the provision of the Federal aid road acts.

Since July 1, 1920, the Department of Agriculture has maintained a separate organization to handle its work. All of the projects upon which it is working in cooperation with the Territory are former projects of this board. The funds available in the Territory for expenditure by the Department of Agriculture are only available for use within the Tongass and Chugach Forest Reserves. The funds of this board formerly absorbed in these projects are thereby available for use in other parts of the Territory.

While the Territorial funds are not usually applicable to military road systems, and the Department of Agriculture funds are limited to projects within, or partly within, the national forests, all road work in the Territory of Alaska is coordinated by informal agreement among the three agencies having funds available. The methods of this board, worked out through long years of successful experience and applied to as great an extent as was possible under the agreements drawn up, have greatly aided the Department of Agriculture and the Territorial road commission in the prosecution of this work.

Under the Territorial cooperative road law, above quoted, the board expended during the fiscal years 1920 and 1921 a total of $198,796.54, out of an available Territorial appropriation for the biennium of $400,000. The balance was allotted in part to the Department of Agriculture to release cooperative funds available for expenditure within the national forests and in part to local subprojects handled by Territorial agencies. The funds allotted to this board were deposited by the Territorial treasurer in the Treasury of the United States to the credit of the board and then expended as required by the disbursing officer of the board under the same safeguards as purely Federal funds.

The Treasury Department having taken the view that such expenditures can not be properly made by the board without specific authority of Congress, the following proviso was included in the act of Congress approved June 30, 1921:

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, 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.

Under the provisions of section 17 of the Territorial road law of April 21, 1919, Mr. Anton Eide, district superintendent of the board for southwestern Alaska, has acted as chairman and secretary of the Territorial divisional road commission for the third division since May 14, 1921. Similarly, Mr. Abe McKinnon, assistant superintendent of the board for the Yukon district, has acted as chairman and secretary of the divisional road commission for the fourth division since the same date.

[Act of May 7, 1921: To make appropriations for the expenses of the Territory of Alaska (from Apr. 1, 1921, to Mar. 31, 1923).]

SECTION 1. * * *

For roads:

For the construction, etc. $240,000

For shelter cabins:

For erection, etc. 10,000

Act of May 5, 1921: Providing for the construction of a bridge across the Nizina River, in the Nizina mining district, McCarthy recording precinct, at or near Young Creek (or at any point connecting with the road now being constructed by the Board of Road Commissioners for Alaska from the town of McCarthy to Nizina River), in the third judicial division of the Territory of Alaska; providing for cooperation between the Territorial board of road commissioners and the Board of Road Commissioners for Alaska in the construction of said bridge, and making an appropriation therefor.]

Be it enacted by the Legislature of the Territory of Alaska:

SECTION 1. There is hereby appropriated from any moneys in the Territorial treasury, not otherwise appropriated, the sum of $25,000 for the construction of a bridge across the Nizina River, in the Nizina mining district, McCarthy recording precinct, at or near Young Creek (or at any point connecting with the road now being constructed by the Board of Road Commissioners for Alaska from the town of McCarthy to Nizina River), in the third judicial division of the Territory of Alaska.

SEC. 2. The Territorial board of road commissioners shall have authority, and it shall be its duty to enter into a cooperative agreement with the Board of Road Commissioners for Alaska, for the construction of said bridge; and in case cooperative work is performed the Territorial treasurer is authorized to deposit in the United States Treasury the amount of $25,000 hereby appropriated to cover the share of the Territory of Alaska in the cooperative project of constructing said bridge: *Provided*, That an equal amount is expended in the construction of said bridge by the Federal Government acting through the Board of Road Commissioners for Alaska. The amount hereby appropriated shall be expended by the disbursing officer of the Board of Road Commissioners for Alaska.

Of the foregoing appropriations the board expended during the fiscal year $69,705.29 upon cooperative road and trail projects, $2,700 for shelter cabins, and $5,000 for preliminary work on the Nizina Bridge project. It also supervised the expenditure of $8,900 by the chairman of the Territorial road commission for the third division and $22,000 by the chairman of the Territorial road commission for the fourth division. The balance of the $120,000 available for the first year of the biennium was applied to cooperative agreements with the Secretary of Agriculture as heretofore. No Territorial road organization was maintained after March 31, 1921. On November 14, 1921, the governor of the Territory, with the approval of the Territorial board of road commissioners, of which he is chairman, appointed the president of the Federal Board of Road Commissioners for Alaska as the consulting engineer for the Territory and placed him in charge of all public works supported by appropriations made by the Territorial legislature.

the territorial road commission for the fourth division. The balance of the $120,000 of road funds and $8,579.40 of forest revenues available for the second year of the biennium was applied to cooperative agreements with the Secretary of Agriculture as heretofore.

For the working season of 1923 the territorial board has allotted to the Department of Agriculture $18,000 and to the Federal board the following amounts:

Cooperative projects	$75,000
Shelter cabins	7,500
Total	82,500
Chairman third division	15,000
Chairman fourth division	20,000
Grand total	117,500

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.

The city of Juneau contributed $777.71 in reimbursement of services in connection with improvement of the city streets.

The city of Valdez contributed $601.83, the cost of seasonal repairs to the Valdez Dike built by this board in 1913.

[Act of May 5, 1921: Providing for the purchase of the Seward Peninsula Railroad for operation as a public tram and highway.]

Be it enacted by the legislature of the Territory of Alaska:

SECTION 1. That the Federal Board of Road Commissioners for Alaska, with the consent and approval of the Territorial board of road commissioners, are hereby authorized and empowered to purchase in the name of and for and in behalf of the Territory of Alaska, the Seward Peninsula Railroad extending from the city of Nome, Alaska, to Shelton, Alaska, a distance of approximately 86 miles, together with the roadbed, rails, switches, spurs, lateral and other side lines, stations, roundhouses, and rights of way, and all realty owned or used by and in connection with the operation of said road; and all or any part of the equipment of said road which in their judgment is deemed advisable to purchase, including locomotives, freight and passenger cars, and other cars of all and every kind, and tools of every nature and kind pertaining or appurtenant to said railroad, at the lowest possible price for which said railroad and equipment may be obtained: *Provided, however*, That such purchase shall not be made for a greater sum than $30,000, nor unless agreement shall have been entered into by the said Federal Board of Road Commissioners and the said Territorial board of road commissioners to the effect that said Federal Board of Road Commissioners shall, from funds appropriated or assigned to it, place the said railroad, roadbed, and track in good condition for transportation of passengers and freight and operation as a public tram and highway: *And provided further*, That a full statement and inventory of the property, if purchased, so acquired shall be filed with the secretary of the Territory.

SEC. 2. That, when purchased, the railroad shall be, until otherwise provided for by law, under the management, control, operation, and regulation of the Federal Board of Road Commissioners, who shall, from funds appropriated or assigned to it for that purpose, repair, keep in condition, extend, and maintain said road, under such rules and regulations as they may promulgate, as a public highway.

SEC. 3. For the purpose of carrying out the provisions of this act there is hereby appropriated from the general funds of the Territory, not otherwise appropriated, the sum of $30,000 or so much thereof as may be necessary to purchase said railroad.

In accordance with the provisions of the act above quoted the board had a physical valuation of the property made in connection with its examination of the entire transportation situation in the Seward Peninsula, required by act of Congress approved June 30, 1921.

Upon the recommendation of the board, the purchase was finally negotiated October 3, 1922, for $24,000, title passing to the Territory as of December 29, 1921. The board assumed control of the property on October 4, 1922, and its rehabilitation for public use with cars using gas or dogs as motive power was begun.

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. Data collected by the board since 1911 indicate that the annual saving in cost of transportation of freight due to the construction of roads by the board 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 the indirect loss which 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 carried out recently to trails and roads in remote portions of the Territory. This gradual rehabilitation starting upon the more important projects has now reached trails extending to all parts of the Territory.

The important Richardson Road which was reopened in 1921 was maintained open during the entire season. Projects upon which new construction was carried out were prosecuted through the season. Construction work progressed well during 1922 in spite of a phenomenally wet summer.

The more important roads upon which new construction was performed were the Haines-Pleasant Camp, Ophir-Takotna, Cache Creek, Roosevelt-Kantishna, Circle-Chatanika and Long-Poorman. During the winter season of 1922–23 an extensive amount of bridge construction was performed. Bridges constructed during this period included the Ganes Creek Bridge in the Innoko, Solatna Bridge near Poorman, Chatanika River Bridge, Chulitna Bridge and the initiation of the very important Nizina River Bridge.

A very important addition to the duties and responsibilities of this board was made by the purchase of the Nome-Shelton tramway. This tramway was purchased by the Territory of Alaska and the duty of maintaining it has developed upon this board.

The total expenditures during the fiscal year amounted to $740,082.49, of which $314,195.39 was for construction and $425,887.10 was for maintenance.

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. The total mileage of roads and trails constructed or maintained by the board aggregate 9,301¼ miles, consisting of 1,323¾ miles of wagon road, 1,115 miles of sled road, 6,150½ miles of permanent trail, and 712 miles of temporary flagged trail. Work was performed on 5,987½ miles of the system during the fiscal year.

The Valdez-Chitina-Fairbanks Road has been reopened for traffic over its entire length. The surfacing of this road with gravel is progressing rapidly with two power shovels, tractors and trailers.

The total expenditures to the end of the fiscal year June 30, 1923, amounted to $7,028,293.66 not including outstanding liabilities or contributed funds, of which $4,113,508.01 was expended for new work and $2,914,785.65 for maintenance.

PROPOSED OPERATIONS.

In accordance with the 10-year program described under "Existing project," an amount of $1,500,000 was required for the fiscal year ending June 30, 1924, to prosecute the work. Only $650,000 was provided by the act of March 2, 1923. These funds will be expended on rehabilitation of the existing system. Little can be done to meet the pressing need for improvement and extensions of the system, especially in providing urgently needed feeders to the Government Railroad, now completed, without much greater annual appropriations.

The annual maintenance of the system after completion, as nearly as can be estimated at this time, will cost about $450,000.

AMOUNT WHICH CAN BE PROFITABLY EXPENDED DURING THE FISCAL YEAR ENDING JUNE 30, 1925.

An appropriation of $1,600,000 to be distributed approximately as follows, can be profitably expended on this work during the fiscal year ending June 30, 1925:

Name of route.	Mileage.	1. Repair and maintenance.	2. Improvement.	3. New construction.	Total.	Average per mile.
Southeastern Alaska:						
Haines-Pleasant Camp	43	$11,500	$20,000	$33,000	$64,500	$1,500
Porcupine extension	20	5,000			5,000	250
Douglas-Gastineau Channel	2	1,000			1,000	500
Haines-Mud Bay	10	2,500			2,500	250
Strawberry Point	1½	500	1,000	4,500	6,000	4,000
Total	76½	20,500	21,000	37,500	79,000	1,033

Name of route.	Mileage.	1. Repair and maintenance.	2. Improvement.	3. New construction.	Total.	Average per mile.
Eagle subdistrict:						
Eagle Fortymile	47	$10,000	$30,000	10,000	$50,000	$1,064
Eagle-Seventymile	20	2,000	.....	5,000	7,000	350
Steel Creek-Chicken	18½	3,700	.....	.....	3,700	200
Canyon Creek-Walkers Fork	10	2,500	.....	.....	2,500	250
Eagle-Circle	190	1,900	.....	.....	1,900	10
Tanana Crossing-Chicken	102	1,400	.....	.....	1,400	14
Fourth of July-Nation	10	2,500	.....	.....	2,500	250
Total	397½	24,000	30,000	15,000	69,000	174
Valdez district:						
Valdez-Willow Creek	92	46,000	.....	.....	46,000	500
Chitina-Willow Creek	39	19,500	.....	.....	19,500	500
Willow Creek Rapids	139½	69,750	.....	.....	69,750	50
Valdez-Mineral Creek	10½	2,550	.....	5,000	7,550	719
Chisana-Nizina	78	7,800	.....	.....	7,800	100
McCarthy-Nizina	16	8,000	10,000	20,000	38,000	2,375
Strelna-Kuskulana	16	4,000	3,000	.....	7,000	438
Gulkana-Tanana Crossing	180	1,800	10,000	20,000	31,800	177
Chistochina-Slate Creek	40	4,000	.....	.....	4,000	100
Total	611	163,400	23,000	45,000	231,400	380
Southwestern Alaska:						
Nancy-Rainy Pass (Government railroad)	152	2,000	.....	.....	2,000	13
Knik-Willow Creek (Government railroad)	53	26,500	7,400	10,000	43,900	828
Alaska Peninsula	40	10,000	10,000	10,000	30,000	750
Talkeetna-Cache Creek (Government railroad)	40	10,000	.....	80,000	90,000	2,250
Talkeetna-Iron Creek (Government railroad)	47	3,000	.....	.....	3,000	65
Anchorage-Eagle River (Government railroad)	10	5,000	.....	5,000	10,000	1,000
Matanuska Valley (Government railroad)	36	18,000	.....	.....	18,000	500
Anchorage Loop (Government railroad)	15	7,500	.....	.....	7,500	500
Total	393	82,000	17,400	105,000	204,400	520
Fairbanks district:						
Fairbanks-Rapids (Government railroad)	130½	62,250	.....	.....	62,250	479
Fairbanks-Chatanika (Government railroad)	30	15,000	.....	.....	15,000	500
Summit-Fairbanks Creek (Government railroad)	11	5,500	.....	.....	5,500	500
Fairbanks-Ester Creek (Government railroad)	13	6,500	.....	.....	6,500	500
Fairbanks-Chena Hot Springs (Government railroad)	64	6,400	10,000	.....	16,400	256
Chatanika-Circle (Government railroad)	130	20,000	65,800	20,000	105,800	814
Chatanika-Beaver (Gov't R. R.)	120	12,000	.....	.....	12,000	100
Olnes-Livengood (Gov't R. R.)	54	5,400	.....	.....	5,400	100
Beaver-Caro	75	7,500	.....	.....	7,500	100
Winter trails	165	4,650	.....	.....	4,650	28
Total	792½	145,200	75,800	20,000	241,000	300
Nenana district:						
Dunbar-Fort Gibbon (Government railroad)	121	12,100	.....	.....	12,100	100
Dunbar-Brooks (Government railroad)	63	6,300	.....	.....	6,300	100
Rampart-Eureka	27½	13,750	20,000	.....	33,750	123
Hot Springs Landing-Eureka	24	12,000	.....	.....	12,000	500
Hot Springs-Sullivan Creek	9	4,500	.....	.....	4,500	500
Roosevelt-Kantishna	34	17,000	.....	.....	17,000	500
Government railroad-Kantishna (Government railroad)	85	8,500	20,000	80,000	108,500	1,276
Coldfoot-Wiseman	11	1,100	.....	.....	1,100	100
Brooks-Terminal	13	4,000	10,000	10,000	24,000	1,846
Moose Creek (Government railroad)	6	3,000	.....	.....	3,000	500
Carlsons-Valdez Creek (Government railroad)	55	5,500	10,000	10,000	25,500	464
Winter trails	716	7,150	.....	.....	7,150	10
Total	1,164½	94,900	60,000	100,000	254,900	219

Name of route.	Mileage.	1. Repair and maintenance.	2. Improvement.	3. New construction.	Total.	Average per mile.
Kuskokwim district:						
Ruby-Poorman	59	$29,500	$10,000	$30,000	$69,500	$1,178
Ophir-Takotna	23½	11,750	10,000	10,000	31,750	1,351
Takotna Forks	11	2,200	10,000	9,000	21,200	1,927
Berrys Landing-Nixon Forks	12	6,000	3,000		9,000	750
Iditarod-Flat	8	4,000			4,000	500
Summit-Otter Creek	6	3,000			3,000	500
Poorman-Ophir (summer)	125	1,250			1,250	10
Takotna-Flat	80	800			800	25
Flat-Crooked Creek (summer)	65	650	1,000		1,650	10
Kalchagmut-Russian Mission	119	1,200			1,200	10
Winter trails	1,383	13,850	15,000		28,850	21
Total	1,891½	74,200	49,000	49,000	172,200	91
Nome district:						
Nome-Council	82	21,000			21,000	256
Candle-Candle Creek	6	3,000			3,000	500
Deering-Immachuck	25	7,500			7,500	300
Davidsons Landing-Taylor	40	15,000			15,000	375
Marshall Road	3	1,500	1,500		3,000	1,000
Nome-Dahl	99	29,000		150,000	179,000	1,808
Dahl-Immachuck	65			100,000	100,000	1,538
Winter Trails	1,959	19,600			19,600	10
Total	2,279	96,600	1,500	250,000	348,100	153
SUMMARY.						
Southeastern Alaska	76½	20,500	21,000	37,500	79,000	1,033
Eagle subdistrict	397½	24,000	30,000	15,000	69,000	174
Valdez district	611	163,400	23,000	45,000	231,400	380
Southwestern Alaska	393	82,000	17,400	105,000	204,400	520
Fairbanks district	792½	145,200	75,800	20,000	241,000	300
Nenana district	1,164½	94,900	60,000	100,000	254,900	219
Kuskowkim district	1,891½	74,200	49,000	49,000	172,200	91
Nome district	2,279	96,600	1,500	250,000	348,100	153
Total	7,605½	700,800	277,700	621,500	1,600,000	210

COMMERCIAL STATISTICS.

Total commerce of Alaska for the calendar year of 1922.

IMPORTS.

Merchandise from the United States	$26,777,806
Merchandise from foreign ports	870,927
Total imports	27,648,733

EXPORTS.

Merchandise to the United States	51,082,995
Merchandise and gold and silver to foreign ports	1,371,490
Domestic gold and silver to the United States	7,431,875
Foreign gold, etc	1,190
Total exports	59,887,550
Grand total, exports and imports	87,536,283

The value of Alaska's mineral output in 1922 was approximately $19,506,365, as compared with $17,004,124 in 1921. Minerals are being produced in the following order of value: Copper, gold, silver, coal, gypsum, marble, lead, petroleum, palladium, and platinum.

The high prices, now happily over their peak, were an obstacle in the continued working and the further development of the great placer deposits in Alaska. Lode mining of gold has continued in southeastern Alaska, but under the same handicap. With decreased prices and the return of miners to Alaska, lode mining is to be

expected in the interior. One lode mine in the Kuskokwim at Nixon Forks has made substantial progress during the past year. The deposits of the Kantishna are exciting interest and with the completion of the Government Railroad development can be looked for.

The copper mining industry has revived during the last year due to increased price for copper. The mining and development of coal has gone on with more or less vigor through the last year. One large property has been opened near Healy and is accessible to the Government Railroad by means of a four mile standard gauge spur. The properties formerly operated at Eska and Jonesville have continued in operation through the season. In addition, two properties on Moose Creek in the Matanuska District came into production this season and following the very excellent progress made there a spur is being constructed from the Government Railroad to these properties during the present season. The production of oil continues in the Katalla fields. The very important drilling now going on at Cold Bay is expected to lead to very important results in oil production in the Territory. With increased transportation and lower and stabilized prices production in all classes of mining shows a substantial increase.

The fisheries are principally located on the shores of the North Pacific and Bristol Bay. The production of canned salmon is the principal product. However, large quantities of halibut, cod, herring, and whaling products are also exported. With more stabilized economic conditions at home and abroad all classes of canned salmon are finding a substantial market.

INVESTIGATION AND REPORT REQUIRED BY THE ACT OF CONGRESS APPROVED JUNE 30, 1921.

In compliance with the following proviso contained in the act of Congress approved June 30, 1921:

Provided further, That not to exceed $10,000 of the foregoing amount shall be expended for a preliminary investigation and report on the feasibility, desirability, and cost of the best and most practicable connection between the Nome-Shelton system of communications and the coal deposits of the Kugruk River, Chicago Creek, and the Keewalik mining district, whether by wagon road, sled road, tramway, trail, or other means,

the board had a preliminary reconnaissance made of existing and prospective routes of communications on the Seward Peninsula in the fall of 1921. The investigation was completed during the summer of 1922. Report dated December 1, 1922, was transmitted to Congress and printed in House Document No. 514, Sixty-Seventh Congress, fourth session. A plan of improvement is presented to the extent of:

From Shelton to Dahl, extension of the Nome-Shelton tramway, 12 miles, at $12,500 per mile	$150,000
From Dahl to Immachuk, improvement of winter trail to summer trail standard, including bridges, 65 miles, at $3,000 per mile	195,000
From Immachuk to Candle Creek, construction of a tramway, 30 miles, at $13,500 per mile	505,000
Total	750,000

Maintenance is to be provided for by the board with its own funds, supplemented by contributions from the Territory.

ADDITIONAL DUTIES OF THE BOARD.

At the request of the commanding officer of the post of Fort Wm. H. Seward, Alaska, the president of the board made a special examination of the water main across Chilcat Inlet, which supplies the post and the town of Haines, Alaska, and submitted a report with recommendations for the repair and reconstruction of the line. This report was approved by the War Department and the board was charged with supervision of the work. Two thousand seven hundred and fifty dollars of quartermaster funds were allotted to the post finance officer in payment thereof. At the close of last fiscal year, the breaks and leaks were repaired, the water service restored and the reconstruction nearly completed. Total expenditues, $2,502.02.

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. Total expenditures, $21,145.12.

The president of the board, in addition to his other duties, was, under the provisions of acts of Congress approved June 17, 1910, and June 15, 1917, 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 was directed to report 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 superintendent for the southwestern district and its assistant superintendent for the Yukon 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.

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.

By letter of the Secretary of War, dated December 6, 1921, the president of the board was designated as the War Department representative upon the Inter-Departmental Alaska Council. Under the authority of the same letter the president of the board designated the engineer officer of the board to act in his absence.

By informal arrangement the president of the board 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.

Effective February 13, 1923, the president and the engineer officer of the board were, in addition to their other duties, detailed for duty with the Government railroad in Alaska under the provisions of an act of Congress approved March 12, 1914, and were appointed chairman and chief engineer and vice chairman, respectively, of the Alaskan Engineering Commission. They took over the management of the Alaska Railroad and allied activities of the Alaskan Engi-

neering Commission as of March 24, 1923. Expenditures for the fiscal year since that date, $1,590,570.09.

The practical result of the foregoing orders has been the development, without legislation but through executive order or interdepartmental or interbureau agreement of a practical working arrangement through which the facilities of all the services involved are used interchangeably. 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 activities involved in this arrangement: The construction, repair, and maintenance of federal roads, tramways, ferries, bridges, trails, and related works, now aggregating over 9,000 miles, and extending from open-all-the-year-round south coast ports to all inhabited parts of the Territory; Territorial roads, bridges, ferries, and trails throughout the Territory, covered by cooperative agreements; shelter cabins; Nizina River Bridge; Nome-Shelton Tramway (87 miles operated by cars drawn by dogs); Tolovana Tramway; Kaltag Portage Survey; Improvement of Nome Harbor; Improvement of Wrangell Harbor; the preliminary examination or survey of Wrangell Narrows, Tolovana River, Yukon-Kuskokwim Portage, English Bay, and Gastineau Channel and adjacent waters; the investigation of port facilities; the survey and design for a Government dock 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 Mount McKinley National Park; construction, maintenance, and operation of the Alaska Railroad from Seward to Fairbanks, 470½ miles; railway spurs to the Eska, Jonesville, Chickaloon, and Healy River coal mines, 46 miles; from Fairbanks to the gold creeks as far as Chatanika, 39 miles narrow gauge; Moose Creek coal spur, 4½ miles narrow gauge; also river boat service on the Tanana and Yukon Rivers between Nenana and Holy Cross, 750 miles, with through billing arrangements covering freight service from Seattle or Tacoma to points on the Yukon River and its principal tributaries between the International Boundary at Eagle and Bering Sea at St. Michael; also an agreement covering automobile service on the Richardson Highway from Fairbanks to Chitina and Valdez, 410 miles; also operates coal mines, hospitals, hotels, and commissaries.

The organization chart looks like an hourglass with the central office at the waist. All authorities and appropriations are gathered in from the four departments and six bureaus and then spread out again over the various jobs. Similarly the reports and vouchers are gathered up from the various outlying districts, viséed, and then passed up to the various departments and bureaus under whose direction the particular work has been handled.

Financial summary.

Amount expended on all projects to June 30, 1923, including receipts from sales, etc.:		
During fiscal years 1905–1922	$6,409,424.04	
Fiscal year 1923	618,869.62	
		$7,028,293.66
Alaska special fund fiscal years 1920–1922	277,885.60	
Alaska special fund fiscal year 1923	121,212.87	
		399,098.47
		7,427,392.13
Total for new work	4,277,696.99	
Total for maintenance	3,149,695.14	
Total expended		7,427,392.13
Balance available		669,118.41
Grand total to be accounted for		8,096,510.54
Appropriations to June 30, 1923:		
Construction and maintenance of military post roads, bridges and trails, Alaska		4,945,000.00
Wagon roads, bridges and trails, Alaska fund		2,652,892.56
Increase of compensation, War Department		34,265.01
Receipts from sales, etc		48,694.14
Refunds to Alaska fund		3,187.18
Refunds to War Department appropriations		2,120.49
Refunds to contributed funds		20.45
Reimbursement from Navy Department		3,976.19
Sales, etc., to accrue to Alaska fund		7,276.50
Funds contributed by Territory of Alaska and towns, for public roads, bridges, trails and ferries, Alaska special fund		399,078.02
Total		8,096,510.54

Fiscal year ending June 30.	1919	1920	1921	1922	1923
Expended for improvement and new work	$114,829.11	$185,190.66	$432,243.90	$236,251.91	$314,195.39
Expended for maintenance	184,195.15	173,410.59	234,545.18	446,995.77	425,887.10
Total expended	299,024.26	358,601.25	666,789.08	683,247.68	740,082.49
Appropriated by War Department acts	100,000.00	100,000.00	350,000.00	425,000.00	1,115,000.00
Allotted from Alaska fund	52,372.31	124,992.96	218,237.10	173,029.19	34,398.23
Contributed by Territory of Alaska and others	.....	115,517.94	113,746.61	56,421.05	113,412.87
Increase of compensation, War Department	.....	.....	940.00	4,322.09	28,857.72
Total	152,372.31	340,510.90	682,923.71	658,772.33	1,291,668.82

July 1, 1922, balance available		$490,239.86
Amount appropriated by War Department act, approved Mar. 2, 1923		650,000.00
Amount accrued to Alaska fund during fiscal year 1923		119,227.10
Amount contributed by Territory of Alaska and others		113,412.87
Refund, War Department appropriation		21.35
Receipts from sales, etc., during fiscal year 1923		7,442.00
Increase of compensation, War Department, 1923		28,857.72
Total resources		1,409,200.90
June 30, 1923, amount expended during fiscal year, including receipts from sales, etc.:		
New work	$314,195.39	
Maintenance	425,887.10	
		740,082.49
July 1, 1923, balance unexpended		669,118.41
July 1, 1923, outstanding liabilities		312,909.21
July 1, 1923, balance unobligated		356,209.20
Amount available from War Department act, approved Mar. 2, 1923		559,407.68
Amount available from Alaska fund on June 30, 1923		102,434.23
Receipts from sales, etc., during fiscal year 1923		7,276.50
Amount available for fiscal year ending June 30, 1924		669,118.41
Amount (estimated) required to be appropriated for completion of existing projects		8,460,000.00
Amount that can be profitably expended in fiscal year ending June 30, 1925:		
For new work		621,500.00
For maintenance		978,500.00
Total		[1] 1,600,000.00

APPROPRIATIONS.

Construction and maintenance, military and post roads, bridges and trails, Alaska.	
Total amount appropriated to and including June 5, 1922	$4,295,000.00
(See detailed statement on p. 2252, Annual Report of the Chief of Engineers, 1922.)	
March 2, 1923	650,000.00
Total	4,945,000.00
Receipts from Treasury, United States, account "Alaska fund," wagon roads, bridges and trails, Alaska fund:	
Grand total to end of fiscal year 1921	2,422,871.88
(See statement on p. 51, Part II, Annual Report of the Alaska Road Commission, fiscal year 1921.)	
1922	97,461.62
Proceeds from sales	4,213.20
1923	119,227.10
Proceeds from sales	9,118.76
Total	2,652,892.56
Increase of compensation, Military Establishment:	
Fiscal year 1918	145.20
1919	----------
1920	----------

[1] Exclusive of available funds

Increase of compensation, Military Establishment—Continued.	
1921	$940.00
1922	4,322.09
1923	28,857.72
Total	34,265.01
Grand total, Federal funds	7,632,157.57

CONTRIBUTED FUNDS.

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

1. By the Territory of Alaska:		
Act of legislature approved Apr. 21, 1919—		
Public roads, bridges, trails, and ferries—		
Fiscal year 1920	$115,517.94	
1921	85,746.61	
		$201,264.55
Approved May 7, 1921, roads, etc.—		
Fiscal year 1921	28,000.00	
1922	43,237.28	
1923 (includes $20.45 refund)	88,533.33	
		159,770.61
Approved May 5, 1921, Nizina River Bridge—		
Fiscal year 1922	5,000.00	
1923	20,000.00	
		25,000.00
Approved May 7, 1921, Shelter Cabins—		
Fiscal year 1922	6,500.00	
1923	3,500.00	
		10,000.00
Total, territory		396,035.16
2. By others:		
Fiscal year 1922—		
City of Valdez	220.02	
City of Wrangell	500.00	
City of Sitka	500.00	
Alpine Club of Skagway	463.75	
		1,683.77
Fiscal year 1923:		
City of Valdez	601.83	
City of Juneau	777.71	
		1,379.54
Grand total, contributed funds		399,098.47

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1924

EXTRACT

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

BOARD OF ROAD COMMISSIONERS FOR ALASKA

PART 1.—1924

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

ZZ

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1924

EXTRACT

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

BOARD OF ROAD COMMISSIONERS FOR ALASKA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

ZZ

[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 3, 1924.

* * * * * * *

BOARD OF ROAD COMMISSIONERS FOR ALASKA

OFFICERS OF THE BOARD

President: Maj. James G. Steese, Corps of Engineers, United States Army, retired.

Engineer officer: Maj. John C. Gotwals, Corps of Engineers, United States Army, to March 26, 1924, and Maj. James G. Steese, from March 27, 1924, to date.

Secretary and disbursing officer: First Lieut. Pierre A. Agnew, Corps of Engineers, United States Army.

Military assistants, under the immediate orders of the president of the board: Maj. John C. Gotwals, Corps of Engineers, United States Army, March 27, 1924, to April 26, 1924, and Maj. Lunsford E. Oliver, Corps of Engineers, United States Army, May 21, 1924, 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" (33 Stats. 616), as amended by act of May 14, 1906 (34 Stats. 192), prescribes in section 2 as follows:

> That there shall be a board of road commissioners in said district to be composed of an Engineer officer of the United States Army to be detailed and appointed by the Secretary of War, and two other officers of that part of the Army stationed in said district and to be designated by the Secretary of War. The said Engineer officer shall, during the term of his said detail and appointment, abide in said district. The said board shall have the power, and it shall be their duty, upon their own motion or upon petition, to locate, lay out, construct, and maintain wagon roads and pack trails from any point on the navigable waters of said district to any town, mining or other industrial camp or settlement, or between any such town, camps, or settlements therein, if in their judgment such roads or trails are needed and will be of permanent value for the development of the district, but no such road or trail shall be constructed to any town, camp, or settlement which is wholly transitory or of no substantial value or importance for mining, trade, agricultural, or manufacturing purposes.
>
> * * * * * * *
>
> The 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 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 operations, 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.

The act of Congress approved March 3, 1911 (36 Stat. 1052), contains the following language:

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.

The act of Congress approved June 15, 1917 (40 Stat. 231) contains the following language:

Provided, That when retired officers of the Army, any portion of whose active service was in the Corps of Engineers, are called back into active service they shall be eligible to fill any position required by law to be filled by an officer of the Corps 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, Nenana, Anchorage, Seward, Takotna, and Nome, Alaska; Seattle, Wash.; and Washington, D. C.

Location and description.—The work thus far accomplished includes the construction of 1,497¾ miles of wagon road, 1,088½ miles of sled road, 6,326½ miles of permanent trail, and 712 miles of temporary flagged trail, a total of 9,624¾ 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 very little level area. The seaward slope, as far west as Cook Inlet, is especially rugged and subjected to a very heavy rain and snow fall.

The timber along the coast attains a very dense growth, but in the interior is only to be found 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 or 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.

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 proposed annual appropriations and the amounts annually appropriated to date are shown in the following table:

1920 PROGRAM

Amounts required each year of the 10-year period of road and trail development

Fiscal year	Working season	Amount estimated	Amount actually appropriated
First (1922)	1921	$955,000	$425,000
Second (1923)	1922	1,200,000	465,000
Third (1924)	1923	1,500,000	650,000
Fourth (1925)	1924	1,600,000	
Fifth (1926)	1925	1,400,000	
Total for first 5 years		6,655,000	
Sixth (1927)	1926	1,045,000	
Seventh (1928)	1927	750,000	
Eighth (1929)	1928	600,000	
Ninth (1930)	1929	500,000	
Tenth (1931)	1930	450,000	
Total for second 5 years		3,345,000	
Total for 10 years		10,000,000	

General indorsement of this program has been given by Federal interests as follows:

In June, 1920, the Alaska advisory committee, consisting of representatives of the Department of the Interior, the Department of Agriculture, the Post Office Department, and the United States Shipping Board, reported that "the construction of wagon roads and trails is one of the most important and urgent needs of Alaska," and recommended "an appropriation of at least $1,000,000 annually until the completion of an adequate road system in Alaska."

In May, 1921, the Inter-Departmental Alaska Board, consisting of representatives of each of the Federal executive departments, recommended: "That approval be given the general program of road construction submitted by the Alaska Road Commission in its Annual

Report for 1920, and that definite adoption of the proposed program be urged before Congress, with a view of providing feeders to the Government railway as well as for the general development of the Territory."

On July 27, 1923, the late President Harding, in his Seattle speech after his return from the interior of Alaska, said in part:

In another direction there is justification for a most liberal disposition—that of road and trail building. * * * Roads constitute a prime need in every new country, and our long national experience in pushing our highways ahead of the onrolling wave of settlement ought to convince us that the broadest liberality towards roads in Alaska will be certain to bring manifold returns. * * * The present road system is but a beginning, and I am willing to be charged with a purpose of something like prodigality in my wish to serve Alaska generously, and more, in this matter of road building.

The original plan of providing the money necessary for carrying on the work of the board is found in the act of January 27, 1905, which authorized the expenditure for the construction and maintenance of wagon roads, bridges, and trails in said district of 70 per cent, reduced by act of March 3, 1913, to 65 per cent, of what is known as the Alaska fund, derived from vocational and trade licenses outside of incorporated towns. This fund proved to be so inadequate and uncertain in amount that special appropriations in aid of the work were made for the fiscal year 1907, and appropriations have since been made from year to year.

Prior to 1919 the appropriations were available only for the fiscal year specified in the appropriation act. This policy seriously interfered with expeditious and economical prosecution of the work as the conditions necessitate making preparations and beginning operations some time previous to the beginning of the fiscal year. The construction season opens before that date, is very short, distances are great, and communication is difficult. Supplies must therefore be purchased in advance and in many cases freighted in over the snow during the winter. Work can not be economically started after July 1 nor stopped and then started up again. The appropriation act of July 11, 1919, and the appropriations made since that date have therefore included a provision that the funds shall be immediately available. Delay of the work on account of the lack of funds has also been occasioned, however, by the fact that appropriation bills were not passed until near or after the beginning of the fiscal year. To guard against such possibility for the season of 1922 House Joint Resolution 282, approved April 6, 1922, provided as follows:

The Secretary of War is authorized to direct the Board of Road Commissioners for Alaska to incur obligations prior to July 1, 1922, for the construction and maintenance of roads, bridges, trails in Alaska of not to exceed 50 per cent of the appropriation for this purpose for the fiscal year ending June 30, 1922, payment of these obligations to be made from the appropriations for the fiscal year ending June 30, 1923.

A similar provision for the season of 1923 was made by a paragraph, as follows, in the appropriation act approved June 30, 1922:

Provided, That if an appropriation for this purpose for the fiscal year ending June 30, 1924, shall not have been made prior to March 1, 1923, 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 ending June 30, 1923, payment of these obligations to be made from the appropriation for the fiscal year ending June 30, 1924.

A similar provision for the season of 1924 was included in the appropriation act approved March 2, 1923, but was dropped out on conference from the act approved June 7, 1924, as the regular appropriation for the 1925 working season should become a law before March 5, 1925.

Though an item in aid of this work has been included each year in the appropriation act for the support of the Army, the item was subject to a point of order prior to July 9, 1918, and was several times seriously endangered. In 1918 the Secretary of War finally announced he would submit no further estimates for the continuation of this work unless specifically authorized to do so. As a result the act of July 9, 1918 (40 Stat. 863) contains the following language:

> *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 the proper prosecution of the work.

Since that date, therefore, the Secretary of War has been definitely charged with responsibility for the submission of estimates for the construction and maintenance not only of "military and post" roads in Alaska, but of "other roads, bridges, and trails" as well. The act approved June 30, 1922, making appropriations for the activities of the War Department transferred the item to Title II, Nonmilitary Activities. The work is therefore no longer a charge against the support of the Army.

The special acts of Congress authorizing and defining the scope of the work and the duties of the board and authorizing the submittal of estimates to Congress are as follows:

Act approved January 27, 1905 (33 Stat. 616).
Act approved May 14, 1906 (34 Stat. 192).
Act approved March 3, 1911 (36 Stat. 1052).
Act approved March 3, 1913 (37 Stat. 728).
Act approved July 9, 1918 (40 Stat. 843).
Act approved June 30, 1921 (42 Stat. 90).
Act approved March 2, 1923 (42 Stat. 1420)).
Act approved June 7, 1924.

For latest published maps see map following page 54, Part II, of the annual report of the Alaska Road Commission fiscal year 1921, 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 by the Alaska Road Commission," Engineering News-Record, September 27, 1923, pages 506–8, illustrated; "The Alaska Railroad," The Michigan Technic, November, 1923, pages 4–8, and 26, illustrated; and "Public Works in Alaska," the Military Engineer, January-February, 1924, pages 13–17, illustrated, all by Col. James G. Steese.

Local coöperation.—The Federal funds disbursed are obtained from an annual appropriation, "Construction and maintenance of military and post roads, bridges, and trails, Alaska," and from receipts from the Alaska fund by act of Congress approved January 27, 1905, and amended by act approved May 14, 1906. About 35 per cent of the total cost of the road and trail system has been paid from the Alaska fund which is derived from Federal trade

and occupational taxes collected outside of incorporated towns in Alaska.

As an indication of the close harmony and coöperation existing between this board and the Territory of Alaska, the following résumé of the Session Laws of Alaska is given:

[Act of Apr. 21, 1919: To provide for the construction, maintenance, and protection of public roads, bridges, trails, and ferries and property pertaining to public roads in the Territory of Alaska, etc.]

* * * * * * *

SEC. 2. The Territorial board of road commissioners shall have authority to enter into coöperative agreements with the Federal Board of Road Commissioners for Alaska, * * * for the construction, repairs, and maintenance of any public road, bridge, or ferry, within the Territory of Alaska. In the case of coöperative work, the Territorial treasurer is authorized to deposit in the United States Treasury the funds agreed upon to cover the share of the Territorial road commission is such coöperative projects as are entered into, in accordance with the provisions of this act. Such funds shall be expended by the disbursing officer of the Federal authority designated in the coöperative agreement, and a detail statement of expenditures from such funds so deposited, shall, upon the completion of the project for which they were deposited, be furnished to the Territorial treasurer.

* * * * * * *

SEC. 7. It shall be the duty of the divisional road commission to meet at a specified time and recommend the apportionment of road funds to the credit of the aforesaid division, so that such funds will not conflict with the apportionment allotted by the Federal Board of Road Commissioners for Alaska.

* * * * * * *

SEC. 17. On and after March 1, 1921, in each Territorial road division there shall be a divisional road commission consisting of three members, two of whom shall be elected as provided by law, and one shall be appointed by the Territorial board of road commissioners for a term of two years, or until his successor be appointed and qualified, who shall serve without pay or emolument. The appointed member shall be chairman and secretary of the commission; receive and account for all funds and property turned over to him as provided by law. He shall be a competent civil engineer, qualified by training and practical experience in highway engineering. * * *.

The above act immediately released cooperative funds of the Department of Agriculture which had been accumulating for several years. Until July 1, 1920, Maj. Wm. H. Waugh, Engineers, 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 on all work in Alaska coming under the provision of the Federal aid road acts.

Since July 1, 1920, the Department of Agriculture has maintained a separate organization to handle its work. All of the projects upon which it is working in cooperation with the Territory are former projects of this board. The funds available in the Territory for expenditure by the Department of Agriculture are only available for use within the Tongass and Chugach Forest Reserves. The funds of this board formerly absorbed in these projects are thereby available for use in other parts of the Territory.

While the Territorial funds are not usually applicable to military road systems, and the Department of Agriculture funds are limited to projects within, or partly within, the national forests, all road work in the Territory of Alaska is coordinated by informal agree-

ment among the three agencies having funds available. The methods of this board, worked out through long years of successful experience and applied to as great an extent as was possible under the agreements drawn up, have greatly aided the Department of Agriculture and the Territorial road commission in the prosecution of this work.

Under the Territorial cooperative road law, above quoted, the board expended during the fiscal years 1920–1923 a total of $361,035.16, out of an available Territorial appropriation for the two bienniums of $615,000. The balance was allotted in part to the Department of Agriculture to release cooperative funds available for expenditure within the national forests and in part to local subprojects handled by Territorial agencies. The funds allotted to this board were deposited by the Territorial treasurer in the Treasury of the United States to the credit of the board and then expended as required by the disbursing officer of the board under the same safeguards as purely Federal funds.

The Treasury Department having taken the view that such expenditures can not be properly made by the board without specific authority of Congress, the following proviso was included in the act of Congress approved June 30, 1921:

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, 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.

Under the provisions of this act the board expended during the fiscal year 1922–23 a total of $3,063.31 contributed by various municipalities and $10,000 appropriated by the Territorial legislature for shelter cabins.

During the current fiscal year it has similarly expended funds amounting to $9,324.32 for shelter cabins and $81,961.13 for roads contributed by the Territory and $1,040 contributed by others.

Under the provisions of section 17 of the Territorial road law of April 21, 1919, Mr. Anton Eide, district superintendent of the board for southwestern Alaska, has acted as chairman and secretary of the Territorial divisional road commission for the third division since May 14, 1921. Similarly, Mr. Abe McKinnon, assistant superintendent of the board of the Yukon district, acted as chairman and secretary of the divisional road commission for the fourth division to August 4, 1923. Mr. M. C. Edmunds, superintendent of the Alaska road commission of the Yukon district, has acted as chairman and secretary of the fourth divisional road commission from August 5, 1923, to date. During the fiscal years 1922–23 the board supervised the expenditure of $18,667.91 by the chairman of the Territorial road commission for the third division and $37,082.11 by the chairman of the Territorial road commission for the fourth division.

No Territorial road organization was maintained after March 31, 1921. On November 14, 1921, the governor of the Territory, with

the approval of the Territorial board of road commissioners, of which he is chairman, appointed the president of the Federal Board of Road Commissioners for Alaska as the consulting engineer for the Territory and placed him in charge of all public works supported by appropriations made by the Territorial legislature. In May, 1923, he was appointed Director of Public Works for the Territory.

During the current fiscal year the board supervised the expenditure of $14,993.86 by the chairman of the Territorial road commission for the third division, and $20,000.50 by the chairman of the Territorial road commission for the fourth division.

For the working season of 1924 the Territorial board has allotted to the Department of Agriculture $16,875 and to the Federal board the following amounts:

Cooperative projects	$80,478.45
Shelter cabins	5,675.68
Total	86,154.13
Chairman third division	15,006.14
Chairman fourth division	9,000.00
Grand total	110,160.27

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.

The board has also cooperated with the Territory under the provisions of the following Territorial law, in the construction of a bridge over the Nizina river.

Act of May 5, 1921: Providing for the construction of a bridge across the Nizina River, in the Nizina mining district, McCarthy recording precinct, at or near Young Creek (or at any point connecting with the road now being constructed by the Board of Road Commissioners for Alaska from the town of McCarthy to Nizina River), in the third judicial division of the Territory of Alaska; providing for cooperation between the Territorial board of road commissioners and the Board of Road Commissioners for Alaska in the construction of said bridge, and making an appropriation therefor.

Be it enacted by the Legislature of the Territory of Alaska:

SECTION 1. There is hereby appropriated from any moneys in the Territorial treasury, not otherwise appropriated, the sum of $25,000 for the construction of a bridge across the Nizina River, in the Nizina mining district, McCarthy recording precinct, at or near Young Creek (or at any point connecting with the road now being constructed by the Board of Road Commissioners for Alaska from the town of McCarthy to Nizina River), in the third judicial division of the Territory of Alaska.

SEC. 2. The Territorial board of road commissioners shall have authority, and it shall be its duty to enter into a cooperative agreement with the Board of Road Commissioners for Alaska, for the construction of said bridge; and in case cooperative work is performed the Territorial treasurer is authorized to deposit in the United States Treasury the amount of $25,000 hereby appropriated to cover the share of the Territory of Alaska in the cooperative project of constructing said bridge: *Provided*, That an equal amount is expended in the construction of said bridge by the Federal Government acting through the Board of Road Commissioners for Alaska. The amount hereby appropriated shall be expended by the disbursing officer of the Board of Road Commissioners for Alaska.

Of the foregoing appropriation the board expended $5,000 during the fiscal year 1922 and $20,000 during 1923.

There has been cooperation with the Territory also 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. Details are as follows:

[Act of May 5, 1921: Providing for the purchase of the Seward Peninsula Railroad for operation as a public tram and highway]

Be it enacted by the legislature of the Territory of Alaska:

SECTION 1. That the Federal Board of Road Commissioners for Alaska, with the consent and approval of the Territorial board of road commissioners, are hereby authorized and empowered to purchase in the name of and for and in behalf of the Territory of Alaska, the Seward Peninsula Railroad extending from the city of Nome, Alaska, to Shelton, Alaska, a distance of approximately 86 miles, together with the roadbed, rails, switches, spurs, lateral and other side lines, stations, roundhouses, and rights of way, and all realty owned or used by and in connection with the operation of said road; and all or any part of the equipment of said road which in their judgment is deemed advisable to purchase, including locomotives, freight and passenger cars, and other cars of all and every kind, and tools of every nature and kind pertaining or appurtenant to said railroad, at the lowest possible price for which said railroad and equipment may be obtained: *Provided, however*, That such purchase shall not be made for a greater sum than $30,000, nor unless agreement shall have been entered into by the said Federal Board of Road Commissioners and the said Territorial board of road commissioners to the effect that said Federal Board of Road Commissioners shall, from funds appropriated or assigned to it, place the said railroad, roadbed, and track in good condition for transportation of passengers and freight and operation as a public tram and highway: *And provided further*, That a full statement and inventory of the property, if purchased, so acquired shall be filed with the secretary of the Territory.

SEC. 2. That, when purchased, the railroad shall be, until otherwise provided for by law, under the management, control, operation, and regulation of the Federal Board of Road Commissioners, who shall, from funds appropriated or assigned to it for that purpose, repair, keep in condition, extend, and maintain said road, under such rules and regulations as they may promulgate, as a public highway.

SEC. 3. For the purpose of carrying out the provisions of this act there is hereby appropriated from the general funds of the Territory, not otherwise appropriated, the sum of $30,000 or so much thereof as may be necessary to purchase said railroad.

In accordance with the provisions of the act above quoted the board had a physical valuation of the property made in connection with its examination of the entire transportation situation in the Seward Peninsula, required by act of Congress approved June 30, 1921.

Upon the recommendation of the board, the purchase was finally negotiated October 3, 1922, for $24,000, title passing to the Territory as of December 29, 1921. The board assumed control of the property on October 4, 1922, and its rehabilitation for public use with cars using gas or dogs as motive power was begun in the spring of 1923 and continued during the current fiscal year.

The Territorial act of May 3, 1923, provided for the purchase of the Tolovana Tram Road for not to exceed $8,000 under the same conditions as the Seward Peninsula Railroad. Upon the recommendation of the board the purchase was finally negotiated for $6,400, title passing to the Territory as of June 11, 1924. The board

assumed control of the property on June 1, 1924, and its rehabilitation for public use with gas cars was begun shortly before the close of the fiscal year.

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. Data collected by the board since 1911 indicate that the annual saving in cost of transportation of freight due to the construction of roads by the board 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 the indirect loss which 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 starting upon the more important projects 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, 34½ miles wagon road, 96½ miles sled road, 280 miles trail, and 1,234 linear feet of bridges of over 60 foot span. Improvement, 20½ miles wagon road reconstructed, 53¼ miles wagon road graveled, 42 miles Nome-Shelton Tramway opened for traffic, and innumerable small bridges and culverts rebuilt. Maintenance, 1,151 miles wagon road, 661 miles sled road, 3,598 miles permanent trail, and 477½ miles temporary flagged trail. Total for all classes of work, 6,414¼ miles, consisting of 1,259¼ miles of wagon road, 42 miles of tramway, 757½ miles of sled road, 3,878 miles of permanent trail, and 477½ miles of temporary flagged trail.

The more important roads upon which new construction was performed were the Haines-Pleasant Camp, McCarthy-Nizina, Chatanika-Circle, Mt. McKinley National Park, Roosevelt-Kantishna, Talkeetna-Cache Creek, Long-Poorman, and Ophir-Tokotna. The extensive bridge program inaugurated the previous year was continued. The more important structures upon which new construction or extensive repairs were performed included bridges across Little Boulder above Haines, Nizina River, Tazlina, Gulkana, and Gakona Rivers, Gun Creek in Isabelle Pass, Millers at Mile 223, McCarthy Slough, Piledriver Slough, Chena Slough (Fairbanks), Bull River (Colorado), Otter Creek near Flat, Snake River (Nome), and Nome River on the Nome-Shelton Tramway.

The important Richardson Highway, which was reopened in 1921, was maintained open during the entire season. The late President Harding motored over about 20 miles of this highway on the Fairbanks end and later an equal amount on the Valdez end.

There was an increased tourist travel during the 1923 season. Traffic reports show the following movement over the Richardson Highway during the calendar year 1923: 1,517 persons, 817 motor-driven vehicles, 30 wagons, 24 double bobsleds, 26 pack horses, and 384½ tons of freight. During the 1924 season, tourist travel had already begun in June, nearly a month earlier than would be possible in an ordinary year.

Construction work progressed unusually well during the 1923 season on account of very dry weather. An unusually early and dry spring in 1924 enabled work to be aggressively undertaken for the current season nearly six weeks earlier than has been customary in previous years.

The total expenditures during the fiscal year amounted to $936,107.65, of which $490,360.53 was for construction, and $445,747.12 was for maintenance.

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. The total mileage of roads and trails constructed or maintained by the board aggregate 9,624¾ miles, consisting of 1,497¾ miles of wagon road, 1,088½ miles of sled road, 6,326½ miles of permanent trail, and 712 miles of temporary flagged trail. Work was performed upon 6,414¼ miles of the system during the fiscal year.

The 410-mile Valdez-Chitina-Fairbanks road received special attention in view of the visit of the late President Harding. Two more seasons should see this important overland route completed to a uniform standard and given a gravel surface throughout. Over 100 miles of the 160-mile extension from Fairbanks to Circle on the Upper Yukon are now passable for wagons, and the entire route is utilized for winter travel by double bobsled.

The total expenditures to the end of the fiscal year June 30, 1924, amounted to $7,872,075.86 not including outstanding liabilities or contributed funds, of which $4,468,057.52 was expended for new construction and $3,404,018.34 for maintenance.

Proposed operations.—The 10-year program described under "Existing project," proposed the appropriation of $1,600,000 for the prosecution of the work for the fiscal year ending June 30, 1925. Only $725,000 was provided by the act of June 7, 1924. These funds will be expended on rehabilitation of the existing system. Unless much greater annual appropriations are made little can be done to meet the pressing need for improvement and extensions of the system, especially in providing urgently needed feeders to the Government railroad, now completed.

The annual maintenance of the system after completion, as nearly as can be estimated at this time, will cost about $550,000.

Amount which can be profitably expended during the fiscal year ending June 30, 1926.—An appropriation of $1,400,000 to be distributed approximately as follows, can be profitably expended on this work during the fiscal year ending June 30, 1926:

Estimate of funds, 1926

Name of route	Mileage	Items				Average per mile
		Repair and maintenance	Improvement	New construction	Total	
Southeastern Alaska:						
Haines-Pleasant Camp	43	$10,500	$7,000	$40,000	$57,500	$1,337
Porcupine Extension	20	6,000			6,000	300
Douglas-Gastineau Channel	2	600	400		1,000	500
Haines-Chilkoot	3	900	1,500		2,400	800
Haines-Mud Bay	10	3,000		2,000	5,000	500
Strawberry Point	1½	450	750		1,200	800
Total	79½	21,450	9,650	42,000	75,100	920
Eagle subdistrict:						
Eagle-Fortymile	50	4,550	10,000	10,000	24,550	491
Eagle-Seventymile	60	1,725	5,000		6,725	112
Steel Creek-Jack Wade	15	1,200	1,800	1,000	4,000	267
Canyon Creek-Walkers Fork	21	500			500	24
Eagle-Circle	190	1,900	1,000	1,100	4,000	21
Woodchopper Creek	8	2,400	1,600	1,000	5,000	625
Fourth of July-Nation	10	3,000	2,000	5,000	10,000	1,000
Miscellaneous trails	261	2,610			2,610	10
Total	615	17,885	21,400	18,100	57,385	93
Bethel subdistrict: Miscellaneous trails	831	8,310			8,310	10
Total	831	8,310			8,310	10
Valdez district:						
Valdez-Ptarmigan Drop	32	16,000	16,000		32,000	1,000
Valdez-Mineral Creek	10½	3,500	1,500	3,000	8,000	762
Chisana-Nizina	78	780			780	10
McCarthy-Nizina	16	4,800	1,200		6,000	375
Strelna-Kuskulana	16	4,800	1,200	4,000	10,000	625
Total	152½	29,880	19,900	7,000	56,780	372
Chitina district:						
Ptarmigan Drop-Willow Creek	60	30,000	30,000		60,000	1,000
Chitina-Willow Creek	39	19,500	19,500		39,000	1,000
Willow Creek Rapids	139	69,500	69,500		139,000	1,000
Gulkana-Tanana Crossing	180	3,000	2,000	10,000	15,000	83
Chistochina-Slate Creek	40	400			400	10
Total	458	122,400	121,000	10,000	253,400	553
Southwestern Alaska:						
Knik-Willow Creek (Government railroad)	53½	16,050	10,470	2,500	29,020	542
Alaska Peninsula	30	9,000	10,000		19,000	633
Talkeetna-Cache Creek (Government railrad)	42	12,600	10,000	20,000	42,600	1,014
Talkeetna-Iron Creek (Government railroad)	45	1,150		40,000	41,150	914
Anchorage-Eagle River (Government railroad)	19½	5,850	5,000		10,850	505
Matanuska Valley (Government railroad)	31½	9,450	10,000		19,450	617
Kenai-Russian River	60	1,500	2,500		4,000	67
Kodiak	5	1,500			1,500	300
Trails	287½	2,875			2,875	10
Total	574	59,975	47,970	62,500	170,445	297
Fairbanks district:						
Fairbanks-Rapids (Government railroad)	138½	69,250	69,250		138,500	1,000
Fairbanks-Chatanika (Government railroad)	30	9,000	6,000		15,000	500
Summit-Fairbanks Creek (Government railroad)	13	3,900			3,900	300
Fairbanks-Ester Creek (Government railroad)	13	3,900			3,900	300
Fairbanks-Chena Hot Springs (Government railroad)	64	1,600	1,400	7,000	10,000	156
Chatanika-Circle (Government railroad)	130	22,000	8,000	50,000	80,000	615

Estimate of funds, 1926—Continued

Name of route	Mileage	Items				Average per mile
		Repair and maintenance	Improvement	New construction	Total	
Fairbanks district—Continued.						
Olnes-Beaver (Government railroad)	115	$1,150	$330		$1,560	$13
Olnes-Livergood (Government railroad)	54	1,350			1,350	25
Beaver-Caro	75	22,500			22,500	300
Winter trails	261	2,610			2,610	10
Total	893½	137,260	85,000	$57,000	279,260	313
Nenana district:						
Dunbar-Fort Gibbon (Government railroad)	121	3,000	2,000	5,000	10,000	83
Fort Gibbon-Kaltag	257	3,000	2,000	5,000	10,000	39
Dunbar-Brooks (Government railroad)	63	1,600			1,600	25
Ruby-Poorman	59	9,000	6,000	15,000	30,000	508
Rampart-Eureka	27½	2,000	3,000		5,000	182
Hot Springs Landing-Eureka	24	7,200	2,800		10,000	417
Hot Springs-Sullivan Creek	9	2,700	1,300		4,000	444
Roosevelt-Kantishna	34	10,000			10,000	294
Coldfoot-Wiseman	12	1,000			1,000	83
Moose Creek-Eva Creek (Government railroad)	14	1,800	3,200		5,000	357
Carlsons-Valdez Creek (Government railroad)	55	1,500			1,500	27
Winter trails	457½	4,575			4,575	10
Total	1,133	47,375	17,100	28,200	92,675	82
Kuskokwim district:						
Ophir-Tokotna Landing	25	7,500	2,500	25,000	35,000	1,400
Medra-Nixon Forks	12	3,600			3,600	300
Iditarod-Flat	8	2,400	1,600		4,000	500
Poorman-Ophir (summer)	125	1,250			1,250	10
Tokotna-Flat	95	950			950	10
Flat-Georgetown (summer)	65	650			650	10
Winter trails	956	9,560			9,560	10
Total	1,286	25,910	4,100	25,000	55,010	43
Nome district:						
Nome-Council	82	24,600			24,600	300
Candle-Candle Creek	6	1,800	1,200	5,000	8,000	1,333
Deering-Inmachuk	25	7,500	7,500	10,000	25,000	1,000
Nome-Dahl	99	8,700		150,000	158,700	1,603
Dahl-Inmachuk	65	6,500		100,000	106,500	1,485
Winter trails	3,083½	30,835			30,835	10
Total	3,360½	79,935	8,700	265,000	353,635	105
SUMMARY						
Southeastern Alaska	79½	21,450	9,650	42,000	73,100	920
Eagle subdistrict	615	17,885	21,400	18,100	57,385	93
Bethel subdistrict	831	8,310			8,310	10
Valdez district	152½	29,880	19,900	7,000	56,780	372
Chitina district	458	122,400	121,000	10,000	253,400	553
Southwestern Alaska	574	59,975	47,970	62,500	170,445	297
Fairbanks district	893½	137,260	85,000	57,000	279,260	313
Nenana district	1,333	47,375	17,100	28,200	92,675	82
Kuskokwim district	1,286	25,910	4,100	25,000	55,010	43
Nome district	3,360½	79,935	8,700	265,000	353,635	105
Total	9,383	550,380	334,820	514,800	1,400,000	149

Commercial statistics.—Total commerce of Alaska for the calendar year 1923:

IMPORTS

Merchandise from the United States	$30,781,206
Merchandise from foreign ports	514,466
Gold and silver from foreign ports	4,769
Total imports	31,300,441

EXPORTS

Merchandise to the United States	$54,878,426
Merchandise, gold and silver to foreign ports	1,325,773
Domestic gold and silver to the United States	6,569,139
Foreign gold and silver to the United States	1,969
Total exports	62,775,307
Grand total, exports and imports	94,075,748

The value of Alaska's mineral output in 1923 was approximately $20,300,000, as compared with $19,506,365 in 1922 and $17,004,124 in 1921. Minerals are being produced in the following order of value: Copper, gold, silver, coal, lead, gypsum, marble, petroleum, palladium, and platinum.

The production of gold declined during the year while the output of copper and coal increased about 20 per cent. Placer mining was greatly handicapped during the summer of 1923 by the lack of water, due to the unusually dry season. In spite of this, the mineral production of the area tributary to the Alaska Railroad in 1923 was $2,100,000, which is an increase over 1922. This was due to the increased production of coal and lode gold stimulated by the cheaper transportation made available by the completion of the Alaska Railroad.

Quoting from Dr. A. H. Brooks, Chief Alaskan Geologist of the 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.

In spite of the continued low price of copper, this industry showed an increase in production in 1923 over 1922 of 9,000,000 pounds. Total production for 1923 was 86,000,000 pounds. The mining and production of coal in 1923 was about 100,000 tons from 12 small mines, an increase over 1922 of 21,000 tons. The largest producers are the Evan Jones, in the Matanuska field, and the Healy River mine in the Nenana field. The significant feature of the coal-mining industry for the year is that the Territory is supplying more and more of its own fuel. The production of oil in the Katalla fields continues, one new well having been drilled during the year. The Standard Oil and Associated oil companies continued drilling in the Cold Bay region. The Associated suspended drilling after having reached a depth of 950 feet. The Standard was reported to have reached a depth of about 1,800 feet by May, 1924, and was planning the installation of another new drill.

The fisheries are located principally on the shores of the North Pacific and Bristol Bay, canned salmon being the main product. However, large quantities of halibut, cod, herring, and whaling products are exported. The relative value of the chief fish products exported in 1923 is as follows: Canned salmon, fresh frozen halibut, cured or preserved herring, cured or preserved salmon, clams, fish oil and cod, fresh and frozen salmon, shrimps, meal, and crabs.

Additional duties of the board.—The president of the board is also district engineer for the Juneau, Alaska, river and harbor dis-

trict. 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. Total expenditures, $37,802.90.

The president of the board, in addition to his other duties, was, under the provisions of acts of Congress approved June 17, 1910, and June 15, 1917, 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 was directed to report 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 superintendent for the southwestern district and its superintendent for the Yukon 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.

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.

By informal arrangement the president of the board 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.

Effective February 13, 1923, the president and the engineer officer of the board were, in addition to their other duties, detailed for duty with the Government railroad in Alaska under the provisions of an act of Congress approved March 12, 1914. The president was appointed chairman and chief engineer and the engineer officer vice chairman, respectively, of the Alaskan Engineering Commission. They took over the management of the Alaska Railroad and allied activities of the Alaskan Engineering Commission as of March 24, 1923. The Alaskan Engineering Commission was abolished on August 15, 1923, upon the recommendation of the chairman thereof, and the designation "The Alaska Railroad" substituted therefor.

On October 1, 1923, the joint management of the roads and railroad was terminated. No reason was assigned for this sudden and unexpected change of policy. The president of the Alaska Road Commission remained chairman of the Alaska Railroad until March 17, 1924, to handle estimates, Congressional hearings, and other matters in Washington, D. C. He had no railway-operating functions or responsibilities in Alaska after October 1, 1923.

The title of the engineer officer of the Alaska Road Commission, so far as concerned his connection with railway work, was changed from vice chairman to chief engineer of the Alaska Railroad on September 29, 1923. After December 24, 1923, he had no railway-operating functions or responsibilities in Alaska, but was retained on special duty in Washington, D. C., under the Secretary of the Interior. He was relieved from further duty with the Alaska Railroad on March 26, 1924.

Since October 1, 1923, the Alaska Railroad has been operated independently. Expenditures for the fiscal year to include September 30, 1923, were $1,511,878.05.

The practical result of the foregoing orders was the development, without legislation but through Executive order or interdepartmental or interbureau agreement, of a practical working arrangement through which the facilities of all the services involved were used interchangeably. A careful account was kept so that each appropriation was eventually expended for the purpose intended by Congress and no appropriation was 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 was 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 numerous references between different bureaus which formerly sometimes required papers to travel to Washington and back several times, matters were handled promptly upon the ground, or where the approval of Washington was required such approval was usually obtained by a single telegram covering the various angles or the views of the bureaus concerned.

Financial summary

Amount expended on all projects to June 30, 1924, including receipts from sales, etc.:		
During fiscal years 1905–1923	$7,028,293.66	
Fiscal year 1924	843,782.20	
		$7,872,075.86
Alaska special fund, fiscal years 1920–1923	399,098.47	
Alaska special fund, fiscal year 1924	92,325.45	
		491,423.92
		8,363,499.78
Total for new work	4,768,057.52	
Total for maintenance	3,595,442.26	
Total expended		8,363,499.78
Balance available		749,252.05
Grand total to be accounted for		9,112,751.83
Appropriations to June 30, 1924:		
Construction and maintenance of military and post roads, bridges, and trails, Alaska		5,670,600.00
Wagon roads, bridges, and trails, Alaska fund		2,775,208.93
Increase of compensation, War Department		93,223.96
Receipts from sales, etc		48,694.14
Refunds to Alaska fund		3,187.18
Refunds to War Department appropriations		4,639.67
Refunds to contributed funds		656.23
Reimbursement from Navy Department		3,976.19
Sales, refunds, etc., to accrue to Alaska fund		2,617.88
Refunds to increase of compensation		4.28
Funds contributed by Territory of Alaska and towns for public roads, bridges, trails, and ferries, Alaska special fund		509,943.37
Total		9,112,751.83

Fiscal year ending June 30	1920	1921	1922	1923	1924
Expended for improvement and new work	$185,190.66	$432,243.90	$236,251.91	$314,195.39	$490,360.53
Expended for maintenance	173,410.59	234,545.18	446,995.77	425,887.10	445,747.12
Total expended	358,601.25	666,789.08	683,247.68	740,082.49	936,107.65
Appropriated by War Department acts	100,000.00	350,000.00	425,000.00	1,115,000.00	725,600.00
Allotted from Alaska fund	124,992.96	218,237.10	173,029.19	34,398.23	67,683.67
Contributed by Territory of Alaska and others	115,517.94	113,746.61	56,421.05	112,412.87	111,501.13
Increase of compensation, War Department	0.00	940.00	4,322.09	28,857.72	58,963.23
Total	340,510.00	682,923.71	658,772.33	1,291,668.82	963,748.03

July 1, 1923, balance available		$669,118.41
Amount appropriated by War Department act, approved March 2, 1923		600.00
Amount appropriated by War Department act, approved June 7, 1924		725,000.00
Amount accrued to Alaska fund during fiscal year 1924		115,803.20
Amount contributed by Territory of Alaska and others		111,501.13
Refund, War Department appropriations		2,519.18
Receipts from sales, etc., during fiscal year 1924		1,854.55
Increase of compensation, War Department, 1923		3,988.95
Increase of compensation, War Department, 1924		54,974.28
Total resources		1,685,359.70
June 30, 1924, amount expended during fiscal year, including receipts from sales, etc.:		
New work	$490,360.53	
Maintenance	445,747.12	
		936,107.65
July 1, 1924, balance unexpended		749,252.05
July 1, 1924, outstanding liabilities		329,208.49
July 1, 1924, balance unobligated		420,043.56
Amount available from War Department act, approved June 7, 1924		557,103.69
Amount available from Alaska fund on June 30, 1924		157,066.93
Receipts from sales, etc., during fiscal year (not credited)		2,617.88
Amount available from contributed funds on June 30, 1924		19,175.68
Amount available from increase of compensation, War Department, 1924, on June 30, 1924		13,287.87
Amount available for fiscal year ending June 30, 1925		749,252.05
Amount (estimated) required to be appropriated for completion of existing projects		7,735,000.00
Amount that can be profitably expended in fiscal year ending June 30, 1926:		
For new work		514,000.00
For maintenance		886,000.00
Total		[1] 1,400,000.00

[1] Exclusive of available funds.

APPROPRIATIONS

Construction and maintenance, military and post roads, bridges and trails, Alaska:	
Total amount appropriated to and including June 5, 1922	$4,295,000.00
(See detailed statement on p. 2252, Annual Report of the Chief of Engineers, 1922.)	
March 2, 1923	650,600.00
June 7, 1924	725,000.00
Total	5,670,600.00
Receipts from Treasury, United States, account "Alaska fund" wagon roads, bridges, and trails, Alaska fund:	
Grand total to end of fiscal year 1921	2,422,871.88
(See statement on p. 51, part II, Annual Report of the Alaska Road Commission, fiscal year 1921.)	
1922	97,461.62
Proceeds from sales	4,213.20
1923	119,227.10
Proceeds from sales	9,118.76
1924	115,803.20
Proceeds from sales	6,513.17
Total	2,775,208.93
Increase of compensation, Military Establishment:	
Fiscal year 1918	145.20
Fiscal year 1919	
Fiscal year 1920	
Fiscal year 1921	940.00
Fiscal year 1922	4,322.09
Fiscal year 1923	32,846.67
Fiscal year 1924	54,970.00
Total	93,223.96
Grand total, Federal funds	8,539,032.89

CONTRIBUTED FUNDS

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

1. By the Territory of Alaska:		
Act of legislature approved April 21, 1919—		
Public roads, bridges, trails and ferries—		
Fiscal year 1920	$115,517.94	
Fiscal year 1921	85,746.61	
		$201,264.55
Approved May 7, 1921, roads, etc.—		
Fiscal year 1921	28,000.00	
Fiscal year 1922	43,237.28	
Fiscal year 1923 (includes $20.45 refund)	88,533.33	
		159,770.61
Approved May 5, 1921, Nizina River Bridge—		
Fiscal year 1922	5,000.00	
Fiscal year 1923	20,000.00	
		25,000.00
Approved May 7, 1921, Shelter Cabins—		
Fiscal year 1922	6,500.00	
Fiscal year 1923	3,500.00	
		10,000.00
Approved May 4, 1923—		
Fiscal year 1924:		
Shelter cabins	15,000.00	
Roads, etc., (Refunds $635.78)	91,961.13	
		106,961.13
Total, territory		502,996.29

2. By others:

Fiscal year 1922:		
City of Valdez	$220.02	
City of Wrangell	500.00	
City of Sitka	500.00	
Alpine Club of Skagway	463.75	
		$1,683.77
Fiscal year 1923:		
City of Valdez	601.83	
City of Juneau	777.71	
		1,379.54
Fiscal year 1924:		
City of Nome	3,500.00	
Stewart and Denhart	540.00	
National Park Service	500.00	
		4,540.00
Grand total, contributed funds		510,599.60

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1925

EXTRACT

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

BOARD OF ROAD COMMISSIONERS FOR ALASKA

PART I 1925

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1925

EXTRACT

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

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

[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 1, 1925.

* * * * * * *

BOARD OF ROAD COMMISSIONERS FOR ALASKA

OFFICERS OF THE BOARD

President: Maj. James G. Steese, Corps of Engineers, United States Army, retired.

Engineer officer: Maj. James G. Steese to August 4, 1924, and Maj. Lunsford E. Oliver, Corps of Engineers, United States Army, from August 5, 1924 to date.

Secretary and disbursing officer: First Lieut. Pierre A. Agnew, Corps of Engineers, United States Army, to January 31, 1925, and Second Lieut. Harry E. Fisher, Corps of Engineers, United States Army, February 1, 1925 to date.

Military assistant, under the immediate orders of the president of the board: Maj. Lunsford E. Oliver to August 4, 1924; Second Lieut. Harry E. Fisher, from October 22, 1924, to January 31, 1925; and First Lieut. Pierre A. Agnew, from February 1, 1925 to June 20, 1925.

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" (33 Stats. 616), as amended by act of May 14, 1906 (34 Stats. 192), prescribes in section 2 as follows:

> 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 to other officers of that part of the Army stationed in said district and to be designated by the Secretary of War. The said Engineer officer shall, during the term of his said detail and appointment, abide in said district. The said board shall have the power, and it shall be their duty, upon their own motion or upon petition, to locate, lay out, construct, and maintain wagon roads and pack trails from any point on the navigable waters of said district to any town, mining or other industrial camp or settlement, or between any such town, camps, or settlements therein, if in their judgment such roads or trails are needed and will be of permanent value for the development of the district, but no such road or trail shall be constructed to

any town, camp, or settlement which is wholly transitory or of no substantial value or importance for mining, trade, agriculture, or manufacturing purposes.

* * * * * * *

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 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 operations, 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 Engineers.

A retired officer of the Corps of Engineers has been appointed president of the board under authority of the following provision in the act of Congress approved March 3, 1911 (36 Stat. 1052):

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.

He was subsequently appointed engineer officer under authority of the following provision in the act of Congress approved June 15, 1917 (40 Stat. 231):

Provided, That when retired officers of the Army, any portion of whose active service was in the Corps of Engineers, are called back into active service they shall be eligible to fill any position required by law to be filled by an officer of the Corps 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, Nenana, Anchorage, Seward, Takotna, and Nome, Alaska; Seattle, Wash.; and Washington, D. C.

Location and description.—The work thus far accomplished includes the construction of 1,472¼ miles of wagon road, 1,086¾ miles of sled road, 6,465 miles of permanent trail, and 712 miles of temporary flagged trail, a total of 9,736 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 each 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 only found 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 or 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.

Existing project.—For description of development of existing project, see Annual Report of the Chief of Engineers for 1924, beginning page 2069.

The proposed annual appropriations and the amounts actually appropriated to date under the 1920 program described in the Annual Report for 1924, are as stated in the table below:

Fiscal year	Working season	Amount estimated	Amount actually appropriated
First (1922)	1921	$955,000	$425,000
Second (1923)	1922	1,200,000	465,000
Third (1924)	1923	1,500,000	650,000
Fourth (1925)	1924	1,600,000	780,000
Fifth (1926)	1925	1,400,000	900,000
Total for first 5 years		6,655,000	3,220,000

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 of existing routes, 9,736 miles, at $542,000 per year	$2,710,000
(b) For improvement of existing routes to the same standard throughout	2,600,000
(c) For completion of projects already undertaken	1,735,000
(d) For completion of projects already approved but not yet undertaken	1,780,000
(e) For completion of projects likely to arise with development during the five years	1,135,000
Total for five years	9,960,000
Less Alaska fund and Territorial contributions (estimated)	960,000
Net Federal appropriations	9,000,000

1924 PROGRAM

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

Fiscal year	Working season	(a) Maintenance,[1] existing routes	(b) Improvement, existing routes	(c) Completion, approved projects already under way	(d) Construction, approved projects not yet under way	(e) Construction, new projects likely to develop	Total
1927	1926	$350,000	$600,000	$510,000	$290,000		$1,750,000
1928	1927	350,000	500,000	475,000	575,000	$100,000	2,000,000
1929	1928	350,000	500,000	400,000	550,000	200,000	2,000,000
1930	1929	350,000	500,000	250,000	300,000	350,000	1,750,000
1931	1930	350,000	500,000	100,000	65,000	485,000	1,500,000
Total		1,750,000	2,600,000	1,735,000	1,780,000	1,135,000	9,000,000

[1] Exclusive of Alaska fund and territorial contributions for maintenance estimated at $192,000 per year

The act of Congress approved February 12, 1925, contains the following language:

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.

Under this general authority, plans can be made in advance, supplies purchased and shipped in over the snow, and full advantage taken of the very short working season.

The special acts of Congress authorizing and defining the scope of the work and the duties of the board are as follows:

Act approved January 27, 1905 (33 Stat. 616).
Act approved May 4, 1906 (34 Stat. 192).
Act approved March 3, 1913 (37 Stat. 728).
Act approved July 9, 1918 (40 Stat. 843).
Act approved June 30, 1921 (42 Stat. 90).
Act approved February 12, 1925.

For latest published maps see map following page 54, Part II, of the annual report of the Alaska Road Commission fiscal year 1921, 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.—"Building Roads to Develop Alaska," the Highway Magazine, December, 1924, pages 13–15, illustrated, by Col. James G. Steese.

Local cooperation.—For description of development of local cooperation, 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 divisional road commission for the third division. Similarly, Mr. M. C. Edmunds, superintendent of the Alaska Road Commission 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.

Durng the fiscal year the board supervised the expenditure of $11,806.14 by the chairman of the Territorial road commission for the third division and $9,000 by the chairman of the Territorial road commission for the fourth division.

During the fiscal year it has expended directly funds amounting to $7,335.93 for shelter cabins and $86,478.45 for roads contributed by the Territory, and $3,849.77 contributed by others.

The last item includes $2,966.65 expended in the construction of a 150-foot municipal wharf for the city of Nome.

For the working season of 1925 the Territorial board has allotted to the Department of Agriculture $16,500 and to the Federal board the following amounts:

Cooperative projects	$111,600
Shelter cabins	10,000
Total	121,600
Chairman third division	9,900
Chairman fourth division	8,600
Grand total	140,100

These funds are held subject to the call of the Federal board. The sum of $2,500 of shelter-cabin fund has been deposited in the United States Treasury to the credit of the board; $1,660.25 of this is included in total of shelter-cabin expenditures reported above. 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.

There has been cooperation with the Territory also 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, $33,518.12 was spent on its rehabilitation.

The Tolovana tramroad was purchased on June 11, 1924, for $6,425. During the fiscal year, $9,386.30 was spent on its rehabilitation.

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.

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. Data collected by the board since 1911 indicate that the annual saving in cost of transportation of freight due to the construction of roads by the board 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 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, 46¼ miles wagon road, 45 miles sled road, 188 miles trail, 1,040 linear feet of bridges of over 60-foot span. Improvement, 22 miles wagon road reconstructed, 63 miles wagon road graveled, 45 miles Nome-Shelton tramway opened for traffic; 3 miles Tolovana tram reconstructed, and innumerable small bridges and culverts rebuilt. Maintenance, 982½ miles wagon road, 52 miles tramway, 702¼ miles sled road, 4,168 miles permanent trail, and 472 miles temporary flagged trail. Total for all classes of work, 6,789 miles, consisting of 1,113¾ miles of wagon road, 100 miles of

tramway, 747¼ miles of sled road, 4,356 miles of permanent trail, and 472 miles of temporary flagged trail.

The more important roads upon which new construction was performed were the Haines-Pleasant Camp, McCarthy-Nizina, Chatanika-Circle, Mount McKinley National Park, Talkeetna-Cache Creek, Long-Poorman, and Ophir-Takotna. The extensive bridge program inaugurated the previous year was continued. The more important structures upon which the new construction or extensive repairs were performed included bridges across Big Boulder, above Haines, Nizina, Tazlina, and Gulkana Rivers, Gun Creek in Isabelle Pass, Millers at mile 223, Chena Slough (Fairbanks), Bull River (Colorado), and Iron and Charette Creeks on Nome-Shelton tramway.

The important Richardson Highway, which was reopened in 1921, was maintained open during the entire season. There was an increased tourist travel during the 1924 season. Traffic reports show the following movement over the highway during the calendar year 1924: 2,603 persons, 1,007 motor-driven vehicles, 33 wagons, 60 double bobsleds, 20 pack horses, and 80 tons of freight. During the 1925 season tourist travel began in June, nearly a month earlier than had been possible heretofore.

Construction work progressed unusually well during the 1924 season on account of very dry weather. A late spring in 1925 has delayed work somewhat.

The total expenditures during the fiscal year amounted to $1,138,347.64, of which $728,040.04 was for construction and $410,307.60 was for maintenance.

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. The total mileage of roads and trails constructed or maintained by the board aggregate 9,736 miles, consisting of 1,472¼ miles of wagon road, 1,086¾ miles of sled road, 6,465 miles of permanent trail, and 712 miles of temporary flagged trail. Work was performed upon 6,789 miles of the system during the fiscal year.

The 410-mile Valdez-Chitina-Fairbanks road received special attention. Two more seasons should see this important overland route completed to a uniform standard and given a gravel surface throughout. Over 100 miles of the 160-mile extension from Fairbanks to Circle on the Upper Yukon are now passable for wagons, and the entire route is utilized for winter travel by double bobsled.

The total expenditures to the end of the fiscal year, June 30, 1925, amounted to $8,911,714.97, not including outstanding liabilities or contributed funds, of which $5,196,097.56 was expended for new construction and $3,715,617.41 for maintenance.

Proposed operations.—The 10-year program described under "Existing project" proposed the appropriation of $1,400,000 for the prosecution of the work for the fiscal year ending June 30, 1926. Only $900,000 was provided by the act of February 12, 1925. These funds will be expended on rehabilitation of the existing system. 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 1925 Congress has provided for a maintenance and operations deficit on the Alaska Railroad of $1,605,000.

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

Amount which can be profitably expended during the fiscal year ending June 30, 1927.—An appropriation, in accordance with the 1924 program, of $1,750,000, to be distributed approximately as follows, can be profitably expended on the work during the fiscal year ending June 30, 1927:

District	Mileage	Maintenance		Total	New construction		Total	Grand total	Average per mile
		(a) Repair	(b) Improvement		(c) Approved projects already under way	(d) Approved projects not yet started			
Southeastern	85	$24,050	$26,400	$50,450	$30,000		$30,000	$80,450	$946.47
Bethel	834	8,340	9,200	17,540				17,540	21.03
Eagle	596	17,160	18,800	35,960	15,000		15,000	50,960	85.50
Valdez	145¼	33,400	36,000	69,400	100,000		100,000	169,400	1,166.26
Chitina	523½	66,000	73,600	139,600				139,600	266.67
Fairbanks	1,049¼	116,550	129,000	245,550	200,000		200,000	445,550	424.64
Nenana	1,206	57,500	64,000	121,500	70,000	$50,000	120,000	241,500	200.25
Southwestern	633	58,500	65,000	123,500	50,000	120,000	170,000	293,500	463.67
Kuskokwim	1,177½	50,500	56,000	106,500	45,000		45,000	151,500	129.51
Nome	3,486½	110,000	122,000	232,000		120,000	120,000	352,000	100.96
Total	9,736	542,000	600,000	1,142,000	510,000	290,000	800,000	1,942,000	199.45
Less Alaska fund and Territorial contributions for maintenance, estimated at								192,000	
Net Federal appropriation								1,750,000	

COMMERCIAL STATISTICS

Total commerce of Alaska for the calendar year 1924:

IMPORTS

Merchandise from the United States	$32,050,433
Merchandise from foreign ports	529,618
Total imports	32,580,051

EXPORTS

Merchandise to the United States	54,525,026
Merchandise, gold, and silver to foreign ports	1,351,380
Domestic gold and silver to the United States	5,138,656
Total exports	61,015,062
Grand total, exports and imports	93,595,113

The value of Alaska's mineral output in 1924 was approximately $17,670,000, as compared with $20,300,000 in 1923 and $19,506,365 in 1922. Minerals are being produced in the following order of value: Copper, gold, coal, silver, lead, petroleum, marble, gypsum, tin, and platinum.

The production of gold increased over 5 per cent during the year, while the total production of lead, petroleum, marble, gypsum, tin,

and platinum increased about 10 per cent and copper declined about 20 per cent. Taking into consideration serious fires which occurred in the mills of the copper-producing properties, thus temporarily handicapping their output, also the fact that the average price of copper in 1924 was considerably below the already low average in 1923, a temporary decline in copper production was to be expected.

Quoting from Dr. A. H. Brooks, chief Alaskan geologist of the 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.

In 1924 Alaska produced about 90,000 tons of coal from 10 mines, as compared with 119,826 tons from 12 mines in 1923. A very large part of the total output came from the Evan Jones mine in the Matanuska field, which produces bituminous coal, and from the mine of the Healy River Coal Corporation in the Nenana field, which produces good lignite. Some development work was done during the year in new coal fields. Beds of bituminous coal were opened 8 miles below Kaltag, along the Yukon River, and also 6 miles above Tanana. Excellent cannel coal in very large quantities was discovered along the upper Healy River and is now being developed. The significant feature of the coal-mining industry for the year is that the Territory is supplying more and more of its own fuel.

In 1924, as in the past, all the petroleum produced in Alaska was obtained from 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. Interest in the exploration of promising oil fields in Alaska continues. Drilling in the Cold Bay district was continued on the Pearl Creek dome by the Standard Oil Co. of California. The Associated Oil Co. renewed operations in June, 1924, and continued drilling during the remainder of the year.

Geologic and topographic surveys of naval petroleum reserve No. 4, in northern Alaska, were made during the year. The Geological Survey has not as yet made a study of these surveys and a statement has not been made regarding the possibility of obtaining oil in that region. The work done, however, confirms the finding of the expedition that visited the coastal region of the reserve in 1923 and reported the occurrence of seeps of oil there.

Canned salmon shipped from Alaska to the United States and Canada totaled 246,130,455 pounds, valued at $31,415,190, or an increase over 1923 of 13,638,868 pounds and $900,904 in value. The product of this industry is greater than all other products of Alaska put together, including gold and silver. The value of fish and fish products for 1924, $39,140,740, constituted over 64 per cent of the shipments from the Territory. Shipments of fresh, smoked, and mild-cured salmon amounted to $1,943,313, or an increase of $414,441 over 1923. The relative value of the chief fish products exported in 1924 is as follows: Canned salmon, fresh frozen halibut, cured or preserved herring, cured or preserved salmon, clams, fish oil and cod, fresh and frozen salmon, shrimps, meal, and crabs.

INVESTIGATION AND REPORT REQUIRED BY THE ACT OF CONGRESS APPROVED MARCH 2, 1923

In compliance with the following provision contained in the act of Congress approved March 2, 1923: "For cost of survey and preparation of plans and estimates for a Government dock at Juneau, Alaska, $600," the board made a survey of the harbor of Juneau during the summer of 1923, selected a suitable site for a wharf, negotiated for an approach and access to the uplands, and prepared plans and estimates for construction. Its report, dated July 10, 1924, was transmitted to Congress through the Chief of Engineers and the Secretary of War, and printed in House Document No. 561, Sixty-eighth Congress, second session. Recommendation is made for the construction of a wharf 400 feet long and 40 feet wide, at an estimated cost of $22,500.

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 the disbursing officer of the board is disbursing officer for the district. Expenditures, $54,417.89.

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 chairman 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, $20,806.14.

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, $99,008.53.

By informal arrangement the president of the board 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, $80,342.37.

At the request of the Secretary of the Interior, the board 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. Expenditures, $80.75.

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, $300.

At the request of the Quartermaster General of the Army, the board submitted a special report upon the water-supply system of Chilkoot Barracks, Alaska, and has assumed charge of the construction of a 1,000,000-gallon concrete reservoir and repairs to the pipe line crossing Chilkat Inlet. Expenditures, $7,500.

Financial summary

Amount expended on all projects to June 30, 1925, including receipts from sales, etc.:		
During fiscal years 1905–1924	$7,872,075.86	
Fiscal year 1925	1,039,639.11	
		$8,911,714.97
Alaska special fund, fiscal years 1920–1924	491,423.92	
Alaska special fund, fiscal year 1925	98,708.53	
		590,132.45
		9,501,847.42
Total for new work	5,496,097.56	
Total for maintenance	4,005,749.86	
Total expended		9,501,847.42
Balance available		879,560.78
Grand total to be accounted for		10,381,408.20

Appropriations to June 30, 1925:	
Construction and maintenance of military and post roads, bridges, and trails, Alaska	6,625,600.00
Wagon roads, bridges, and trails, Alaska fund	2,910,714.88
Increase of compensation, War Department	95,059.50
Receipts from sales, etc., prior to 1921	48,694.14
Funds contributed by Territory of Alaska and others for public roads, bridges, trails, and ferries, Alaska special fund	589,804.94
Roads and trails, national parks	80,000.00
National cemeteries	300.00
Refunds to War Department appropriations	15,248.88
Refunds to increase of compensation	16.95
Refunds to contributed funds	1,700.61
Refunds to roads and trails, national parks	20.00
Reimbursement from Navy Department	3,976.19
Sales, refunds, etc., to accrue to Alaska fund	10,272.21
Total	10,381,408.20

Fiscal year ending June 30	1921	1922	1923	1924	1925
Expended for improvement and new work	$432,243.90	$236,251.91	$314,195.30	$490,360.58	$723,040.04
Expended for maintenance	234,545.18	446,995.77	425,887.19	445,747.12	410,307.60
Total expended	666,789.08	683,247.68	740,082.49	936,107.65	1,133,347.64
Appropriated by War Department acts	350,000.00	425,000.00	1,115,000.00	725,000.00	955,000.00
Allotted from Alaska fund	218,237.10	173,029.19	34,398.23	67,653.67	168,518.01
National cemeteries					300.00
Contributed by Territory of Alaska and others	112,746.61	56,421.05	113,392.42	110,365.35	79,961.57
Roads and trails, national parks					80,000.00
Increase of compensation, War Department	940.00	4,322.09	28,857.72	58,963.23	1,335.54
Total	682,923.71	658,772.33	1,291,648.37	962,112.26	1,285,515.12

July 1, 1924, balance available		$749,252.05
Amount appropriated by deficiency act approved Dec. 6, 1924		55,000.00
Amount appropriated by War Department act approved Feb. 12, 1925		900,000.00
Amount accrued to Alaska fund during fiscal year 1925		123,871.33
Amount contributed by Territory of Alaska and others		79,861.57
Refunds, all appropriations		11,686.21
Receipts from sales, etc., during fiscal year 1925		16,101.72
Increase of compensation, War Department, 1924		1,835.54
National cemeteries, 1925		300.00
Roads and trails, national parks, 1925–26		80,000.00
Total resources		2,017,908.42
June 30, 1925, amount expended during fiscal year, including receipts from sales, etc.:		
New work	$728,040.04	
Maintenance	410,307.60	
		1,138,347.64
July 1, 1925, balance unexpended		879,560.78
July 1, 1925, outstanding liabilities		259,925.79
July 1, 1925, balance unobligated		619,634.99
Amount available from War Department act approved Feb. 12, 1925		747,047.83
Amount available from Alaska fund on June 30, 1925		120,867.64
Receipts from sales, refunds, etc., during fiscal year (not credited)		10,272.21
Amount available from contributed funds on June 30, 1925		1,373.10
Amount available for fiscal year ending June 30, 1926		879,560.78
Amount (estimated) required to be appropriated for completion of existing projects		9,000,000.00
Amount that can be profitably expended in fiscal year ending Junt 30, 1927:		
For new work		800,000.00
For maintenance		950,000.00
Total		[1] 1,750,000.00

APPROPRIATIONS

Construction and maintenance, military and post roads, bridges, and trails, Alaska:		
Total amount appropriated to and including June 7, 1924 (see detailed statement on p. 2084, Annual Report of the Chief of Engineers, 1924)	$5,670,600.00	
Dec. 6, 1925	55,000.00	
Feb. 12, 1925	900,000.00	
		$6,625,600.00
Receipts from Treasury United States, account "Alaska fund" wagon roads, bridges, and trails, Alaska fund:		
Total receipts to end of fiscal year 1924 (see statement on p. 163, Pt. II, Annual Report of the Alaska Road Commission, fiscal year 1924)	2,775,208.93	
1925	123,871.33	
Proceeds from sales, etc	11,634.57	
		2,910,714.83

[1] Exclusive of available funds.

Increase of compensation, Military Establishment:		
Fiscal years 1918–1924 (see detailed statement on p. 2084, Annual Report of the Chief of Engineers, 1924)	$93,223.96	
Fiscal year 1924 (expended during 1925)	1,835.54	
		$95,059.50
National cemeteries:		
Fiscal year 1925		300.00
Roads and trails, national parks:		
March 3, 1925		80,000.00
Total, Federal funds		9,711,674.33

CONTRIBUTED FUNDS

(Act of Congress approved June 30, 1921, Alaska special fund)

1. By the Territory of Alaska (see detailed statement on p. 2084, Annual Report of the Chief of Engineers, 1924):		
Fiscal year 1920		$115,517.94
Fiscal year 1921		113,746.61
Fiscal year 1922		54,737.28
Fiscal year 1923		112,012.88
Fiscal year 1924		106,325.35
Fiscal year 1925—		
Public roads, etc	$76,478.45	
Shelter cabins	2,500.00	
		78,978.45
Total, Territory		581,318.51
2. By others (see detailed statement on p. 2085, Annual Report of the Chief of Engineers, 1924):		
Fiscal year 1922		1,683.77
Fiscal year 1923		1,379.54
Fiscal year 1924		4,540.00
Fiscal year 1925:		
National Park Service	$342.37	
Tanana Valley Dredging Co	360.00	
P. L. McDonald	100.00	
The Alaska Railroad	80.75	
		883.12
Total, contributed funds		589,804.94
Grand total, all funds		10,301,479.27

O

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1926

EXTRACT

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

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

Part 1, 1926

WASHINGTON
GOVERNMENT PRINTING OFFICE
1926

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1926

EXTRACT

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

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1926

[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 5, 1926.

* * * * * * *

BOARD OF ROAD COMMISSIONERS FOR ALASKA

OFFICERS OF THE BOARD

President: Maj. James G. Steese, Corps of Engineers, United States Army, retired.

Engineer officer: Maj. Lunsford E. Oliver, Corps of Engineers, United States Army.

Secretary and disbursing officer: First Lieut. Harry E. Fisher, Corps of Engineers, United States Army.

Military assistants, under the immediate orders of the president of the board: Second Lieuts. Arleigh T. Bell and Frank A. Pettit, Corps of Engineers, United States Army, since September 28, 1925.

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. 616, 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, 36 Stat. 1052.)

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, $900,000, to be immediately available. (Act of April 15, 1926.)

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 operations, 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, Nenana, Anchorage, Seward, Takotna, and Nome, Alaska; Seattle, Wash.; and Washington, D. C.

Location and description.—The work thus far accomplished includes the construction of 1,433½ miles of wagon road, 100 miles of tramroad, 1,086 miles of sled road, 6,671½ miles of permanent trail, and 712 miles of temporary flagged trail, a total of 10,003 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 only found 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 or 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.—For description of development of existing project, see Annual Report of the Chief of Engineers for 1924, page 2069.

The proposed annual appropriations and the amounts actually appropriated under the 1920 program described in the Annual Report for 1924, are as stated in the table below:

Fiscal year	Working season	Amount estimated	Amount actually appropriated
First (1922)	1921	$955,000	$425,000
Second (1923)	1922	1,200,000	465,000
Third (1924)	1923	1,500 000	650,000
Fourth (1925)	1924	1,600,000	780,000
Fifth (1926)	1925	1,400,000	900,000
Total for first 5 years		6,655,000	3,220,000

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 of existing routes, 9,736 miles, at $542,000 per year	$2,710,000
(*b*) For improvement of existing routes to the same standard throughout	2,600,000
(*c*) For completion of projects already undertaken	1,735,000
(*d*) For completion of projects already approved but not yet undertaken	1,780,000
(*e*) For completion of projects likely to arise with development during the five years	1,135,000
Total for five years	9,960,000
Less Alaska fund and Territorial contributions (estimated)	960,000
Net Federal appropriations	9,000,000

1924 PROGRAM

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

Fiscal year	Working season	(a) Maintenance,[1] existing routes	(b) Improvement, existing routes	(c) Completion, approved projects already under way	(d) Construction, approved projects not yet under way	(e) Construction, new projects likely to develop	Total estimated	Amount actually appropriated
1927	1926	$350,000	$600,000	$510,000	$290,000		$1,750,000	$900,000
1928	1927	350,000	500,000	475,000	575,000	$100,000	2,000,000	
1929	1928	350,000	500,000	400,000	550,000	200,000	2,000,000	
1930	1929	350,000	500,000	250,000	300,000	350,000	1,750,000	
1931	1930	350,000	500,000	100,000	65,000	485,000	1,500,000	
Total		1,750,000	2,600,000	1,735,000	1,780,000	1,135,000	9,000,000	900,000

[1] Exclusive of Alaska fund and territorial contributions for maintenance estimated at $192,000 per year.

For latest published maps see map following page 54, Part II, of the annual report of the Alaska Road Commission fiscal year 1921, and also a wall map of Alaska published by the board of road commissioners, 1923.

Recommended modifications of project.—None.

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 divisional road commission for the third division. Similarly, Mr. M. C. Edmunds, superintendent of the Alaska Road Commission 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 $9,882.86 by the chairman of the Territorial road commission for the third division and $12,360 by the chairman of the Territorial road commission for the fourth division.

During the fiscal year it has expended directly $9,715.41 for shelter cabins, $107,505.28 for roads, $10,226.08 for aviation fields, and $2,149.10 for telephone lines, from funds contributed by the Territory, and $2,819.01 contributed by others.

For the working season of 1926 the Territorial board has allotted to the Department of Agriculture $29,325 and to the Federal board the following amounts:

Cooperative projects	$66,000.00
Shelter cabins	8,624.34
Aviation fields	14,773.92
Telephone lines	1,850.90
Total	91,249.16
Chairman third division	15,217.14
Chairman fourth division	16,440.00
Grand total	122,906.30

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 $25,049.25 was spent on its rehabilitation.

The Tolovana tramroad was purchased on June 11, 1924, for $6,425. During the fiscal year $4,190.59 was spent on its rehabilitation.

During the year the board assumed responsibility for the construction of eight aviation fields and the repair and maintenance of 400 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.

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. Data collected by the board since 1911 indicate that the annual saving in cost of transportation of freight due to the construction of roads by the board 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 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 67½ miles wagon road, 14 miles sled road, 212 miles trail, 380 linear feet of bridges of 60-foot span and over, 8 airplane landing fields. Improvement, 62 miles wagon road reconstructed, 96 miles wagon road graveled, 5 miles Nome-Shelton tramway raised to standard of 10-ton loads, and innumerable small bridges and culverts rebuilt. Maintenance, 1,035¼ miles wagon road, 95 miles tramway, 935 miles sled road, 3,631½ miles permanent trail, 368½ miles temporary flagged trail. and 400 miles telephone lines. Total for all classes of work, 6,495½ miles, consisting of 1,234½ miles of wagon road, 100 miles of tramway, 949 miles of sled road, 3,843½ miles of permanent trail, and 368½ miles of temporary flagged trail.

The more important roads upon which new construction was performed were the Haines-Pleasant Camp, McCarthy-Nizina, Chatanika-Circle, Mount McKinley National Park, Gulkana-Chistochina, Long-Poorman, and Ophir-Tokotna. The extensive bridge program inaugurated the previous year was continued. The more important structures upon which new construction or extensive repairs were performed included bridges across Savage and Sanctuary Rivers in McKinley Park, Big Goldstream, Hot Springs Slough, Valdez Glacier Stream, Bear Creek, Klutina River, Miller's Glacier Stream at mile 223, Banner Creek, Gasoline Creek, and Tanana Slough at mile 348.

The important Richardson Highway, which was reopened in 1921, was maintained open during the entire season. There was an increased tourist travel during the 1925 season. Traffic reports show the following movement over the highway during the calendar year 1925: 4,208 persons, 1,853 motor-driven vehicles, 139 wagons, 479 double bobsleds, 6 pack horses, and 1,704 tons of freight. During the 1926 season tourist travel began in June, nearly a month earlier than had been possible heretofore.

Construction work was delayed somewhat during the 1925 season on account of very wet weather. An early spring in 1926 has helped in opening up work.

The total expenditures during the fiscal year amounted to $1,311,317.69, of which $828,045.38 was for construction and $483,272.31 was for maintenance.

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 6,495½ miles of the system during the fiscal year.

The 410-mile Valdez-Chitina-Fairbanks road received special attention. Two more seasons should see this important overland route completed to a uniform standard and given a gravel surface throughout. Over 110 miles of the 165-mile extension from Fairbanks to Circle, on the Upper Yukon, are now passable for wagons, and the entire route is utilized for winter travel by double bobsled.

The total expenditures to the end of the fiscal year, June 30, 1926, amounted to $10,090,617.78, not including outstanding liabilities or contributed funds, of which $5,937,942.94 was expended for new construction and $4,152,674.84 for maintenance.

Proposed operations.—The 10-year program described under "Existing project" proposed the appropriation of $1,750,000 for the prosecution of the work for the fiscal year ending June 30, 1927. Only $900,000 was provided by the act of April 15, 1926. These funds will be expended on rehabilitation and some improvement of the existing system. 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 1925 Congress provided for a maintenance and operations deficit on the Alaska Railroad of $1,605,000.

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

Amount which can be profitably expended during the fiscal year ending June 30, 1928.—An appropriation, in accordance with the 1924 program, of $2,000,000, to be distributed approximately as follows, can be profitably expended on the work during the fiscal year ending June 30, 1928:

District	Mileage existing system			Existing projects			Average per mile		
	Roads	Sled roads	Trails	(a) Maintenance	(b) Improvement	Total	Roads	Sled roads	Trails
Southeastern	79		5	23,750	20,000	43,750	553		10
Bethel			970	4,850		4,850			5
Eagle	29	173	388	13,000	10,000	23,000	533	25	8
Valdez	105¼			34,000	180,000	214,000	2,033		
Chitina	220½		346	96,000	145,000	241,000	1,078		10
Fairbanks	404¾	209½	440	138,000	125,000	263,000	623	26	10
Nenana	145½	446	630	40,000		40,000	204	16	5
Southwestern	191½	183	269	65,000		65,000	299	25	11
Kuskokwim	77½	47½	1,156½	29,000	20,000	49,000	557	25	4
Nome	280½	27	[1] 2,467	98,400		98,400	305	18	5
Total	1,533½	1,086	6,671½	542,000	500,000	1,042,000	638	21	6

[1] Exclusive of 712 miles of temporary flagged trails.

District	New Construction				Grand total of estimates (a), (b), (c), (d), and (e)
	(c) Approved projects already under way	(d) Approved projects not yet started	(e) New projects likely to develop	Total	
Southeastern					43,750
Bethel			10,000	10,000	14,850
Eagle					23,000
Valdez					214,000
Chitina	100,000		60,000	160,000	401,000
Fairbanks	240,000	200,000		440,000	703,000
Nenana	60,000	105,000		165,000	205,000
Southwestern	65,000	150,000		215,000	280,000
Kuskokwim	10,000		30,000	40,000	89,000
Nome		120,000		120,000	218,400
Total	475,000	575,000	100,000	1,150,000	2,192,000
Less Alaska fund and Territorial contributions for maintenance, estimated at					192,000
Net Federal appropriation					2,000,000

COMMERCIAL STATISTICS

Total commerce of Alaska for the calendar year 1925:

IMPORTS

Merchandise from the United States	$32,352,530
Merchandise from foreign ports	846,981
Total imports	33,199,511

EXPORTS

Merchandise to the United States	55,639,050
Merchandise, gold, and silver to foreign ports	901,843
Domestic gold and silver to the United States	5,682,842
Total exports	62,223,735
Grand total, exports and imports	95,423,246

This is an increase of $1,828,133 over the corresponding figure for 1924.

The value of Alaska's mineral output in 1925 was $17,850,000, as compared with $17,457,333 in 1924.

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

The production of gold decreased slightly during the year, while the total production of lead, petroleum, marble, gypsum, tin, platinum, and copper increased about 10 per cent.

Quoting from Dr. A. H. Brooks, chief Alaskan geologist of the 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.

In 1925 Alaska produced about 60,000 tons of coal as compared with 90,000 tons from 10 mines in 1924 and 119,826 tons from 12 mines in 1923. A very large part of the total output came from the

Evan Jones mine in the Matanuska field, which produces bituminous coal, and from the mine of the Healy River Coal Corporation in the Nenana field, which produces good lignite.

Excellent cannel coal in very large quantities was discovered along the upper Healy River and is now being developed.

In 1925, as in the past, all the petroleum produced in Alaska was obtained from 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. Interest in the exploration of promising oil fields in Alaska continues. Drilling in the Cold Bay district was continued on the Pearl Creek dome by the Standard Oil Co. of California. The Associated Oil Co. renewed operations in June, 1925, and continued drilling during the remainder of the year. The General Petroleum Co. landed an outfit late in the fall and plans drilling in the Yakataga field in the spring.

Geologic and topographic surveys of naval petroleum reserve No. 4, in northern Alaska, were continued during the year. The Geological Survey has not as yet made a study of these surveys and a statement has not been made regarding the possibility of obtaining oil in that region. The work done, however, confirms the finding of the expedition that visited the coastal region of the reserve in 1923 and reported the occurrence of seeps of oil there.

Canned salmon shipped from Alaska to the United States and Canada totaled 218,146,509 pounds, valued at $28,845,821. The product of this industry is greater than all other products of Alaska put together, including gold and silver. The value of fish and fish products for 1925, $37,609,451, constituted over 60 per cent of the shipments from the Territory.

The relative value of the chief fish products exported in 1925 is as follows: Canned salmon, cured or preserved herring, cured or preserved salmon, fresh frozen halibut, clams, fish oil and cod, fresh and frozen salmon, shrimps, meal, and crabs.

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. Expenditures, $47,521.95.

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, $22,242.86.

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, $132,414.88.

By informal arrangement the president of the board 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, $50,562.01.

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, $290.17.

At the request of the Quartermaster General of the Army, the board submitted a special report upon the water-supply system of Chilkoot Barracks, Alaska, and has assumed charge of the construction of a 1,000,000-gallon concrete reservoir and repairs to the pipe line crossing Chilkat Inlet. This work was practically completed at the end of the fiscal year. Expenditures, $7,500.

Financial summary

Amount expended on all projects to June 30, 1926, including receipts from sales, etc.:		
During fiscal years 1905–1925	$8,911,714.97	
Fiscal year 1926	1,178,902.81	
		$10,090,617.78
Alaska special fund, fiscal years 1920–1925	590,132.45	
Alaska special fund, fiscal year 1926	132,414.88	
		722,547.33
		10,813,165.11
Total for new work	6,324,142.94	
Total for maintenance	4,489,022.17	
Total expended		10,813,165.11
Balance available		812,070.22
Grand total to be accounted for		11,625,235.33
Appropriations to June 30, 1926:		
Construction and maintenance of military and post roads, bridges, and trails, Alaska		7,525,600.00
Wagon roads, bridges, and trails, Alaska fund		3,060,090.18
Increase of compensation, War Department		95,059.50
Receipts from sales, etc., prior to 1921		48,694.14
Funds contributed by Territory of Alaska and others for public roads, bridges, trails, and ferries, Alaska special fund		726,123.05
Roads and trails, national parks		130,000.00
National cemeteries		602.17
Refunds, etc., to War Department appropriations		16,910.91
Refunds to increase of compensation		16.95
Refunds, etc., to contributed funds		7,855.89
Refunds to roads and trails, national parks		20.00
Reimbursement from Navy Department		3,976.19
Sales, refunds, etc., to accrue to Alaska fund		10,286.35
Total		11,625,235.33

Fiscal year ending June 30	1922	1923	1924	1925	1926
Expended for improvement and new work	$236, 251. 91	$314, 195. 39	$490, 360. 53	$728, 040. 04	$828, 045. 38
Expended for maintenance	446, 995. 77	425, 887. 10	445, 747. 12	410, 307. 60	483, 272. 31
Total expended	683, 247. 68	740, 082. 49	936, 107. 65	1, 138, 347. 64	1, 311, 317. 69
Appropriated by War Department acts	425, 000. 00	1, 115, 000. 00	725, 600. 00	955, 000. 00	900, 000. 00
Allotted from Alaska fund	173, 029. 19	34, 398. 23	67, 683. 67	168, 518. 01	115, 035. 11
National cemeteries				300. 00	302. 17
Contributed by Territory of Alaska and others	56, 421. 05	113, 392. 42	110, 865. 35	79, 861. 57	136, 318. 11
Roads and trails, national parks				80, 000. 00	50, 000. 00
Increase of compensation, War Department	4, 322. 09	28, 857. 72	58, 963. 23	1, 835. 54	
Total	658, 772. 33	1, 291, 648. 37	963, 112. 25	1, 285, 515. 12	1, 201, 655. 39

July 1, 1925, balance available		$879, 560. 78
Amount appropriated by War Department act approved Apr. 15, 1926		900, 000. 00
Amount accrued to Alaska fund during fiscal year 1926		137, 431. 66
Amount contributed by Territory of Alaska and others		136, 318. 11
Refunds, etc., all appropriations		7, 817. 36
Receipts from sales, etc., during fiscal year 1926		11, 957. 83
National cemeteries, 1925		2. 17
National cemeteries, 1926		300. 00
Roads and trails, national parks, 1926–27		50, 000. 00
Total resources		2, 123, 387. 91
June 30, 1926, amount expended during fiscal year, including receipts from sales, etc.:		
New work	$828, 045. 38	
Maintenance	483, 272. 31	
		1, 311, 317. 69
July 1, 1926, balance unexpended		812, 070. 22
July 1, 1926, outstanding liabilities		288, 660. 14
July 1, 1926, balance unobligated		523, 410. 08
Amount available from War Department act approved Apr. 15, 1926		635, 132. 38
Amount available from Alaska fund on June 30, 1926		155, 207. 88
Receipts from sales, refunds, etc., during fiscal year (not credited)		10, 286. 35
Amount available from contributed funds on June 30, 1926		11, 431. 61
Amount available from national cemeteries, 1926		12. 00
Amount available for fiscal year ending June 30, 1927		812, 070. 22
Amount (estimated) required to be appropriated for completion of existing projects		8, 100, 000. 00
Amount that can be profitably expended in fiscal year ending June 30, 1928:		
For new work		1, 150, 000. 00
For maintenance		850, 000. 00
Total		[1] 2, 000, 000. 00

[1] Exclusive of available funds.

APPROPRIATIONS

Construction and maintenance, military and post roads, bridges, and trails, Alaska:		
Total amount appropriated to and including June 7, 1924 (see detailed statement on p. 2084, Annual Report of the Chief of Engineers, 1924)	$5,670,600.00	
Dec. 6, 1924	55,000.00	
Feb. 12, 1925	900,000.00	
Apr. 15, 1926	900,000.00	
		$7,525,600.00
Receipts from Treasury, United States, account "Alaska fund," wagon roads, bridges, and trails, Alaska fund:		
Total receipts to end of fiscal year 1924 (see statement on p. 163, Pt. II, Annual Report of the Alaska Road Commission, fiscal year 1924)	2,775,208.93	
1925	123,871.33	
Proceeds from sales, etc	11,634.57	
1926	137,431.66	
Proceeds from sales, etc	11,943.69	
		3,060,090.18
Increase of compensation, Military Establishment:		
Fiscal years 1918–1924 (see detailed statement on p. 2084, Annual Report of the Chief of Engineers, 1924)	93,223.96	
Fiscal year 1924 (expended during 1925)	1,835.54	
		95,059.50
National cemeteries:		
Fiscal year 1925	302.17	
Fiscal year 1926	300.00	
		602.17
Roads and trails, national parks:		
Mar. 3, 1925	80,000.00	
May 10, 1926	50,000.00	
		130,000.00
Total, Federal funds		10,811,351.85

CONTRIBUTED FUNDS

(Act of Congress approved June 30, 1921, Alaska special fund)

1. By the Territory of Alaska (see detailed statement on p. 2084, Annual Report of the Chief of Engineers, 1924):		
Fiscal year 1920		$115,517.94
Fiscal year 1921		113,746.61
Fiscal year 1922		54,737.28
Fiscal year 1923		112,012.88
Fiscal year 1924		106,325.35
Fiscal year 1925		78,978.45
Fiscal year 1926—		
Public roads, etc	$113,850.00	
Shelter cabins	17,500.00	
Telephone lines	2,149.10	
		133,499.10
Total, Territory		714,817.61

2. By others (see detailed statement on p. 2085, Annual Report of the Chief of Engineers, 1924):

Fiscal year 1922		$1,683.77
Fiscal year 1923		1,379.54
Fiscal year 1924		4,540.00
Fiscal year 1925		883.12
Fiscal year 1926—		
National Park Service	$562.01	
The Alaska Railroad	500.00	
Fairbanks Exploration Co	802.00	
City of Fairbanks	955.00	
		2,819.01
Total, contributed funds		726,123.05
Grand total, all funds		11,537,474.90

O

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1927

EXTRACT

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

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1927

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1927

EXTRACT

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

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1927

[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 4, 1927.

* * * * * * *

1975

BOARD OF ROAD COMMISSIONERS FOR ALASKA

OFFICERS OF THE BOARD

President: Maj. James G. Steese, Corps of Engineers, United States Army, retired.

Engineer officer: Maj. Lunsford E. Oliver, Corps of Engineers, United States Army, to June 19, 1927, and Maj. James G. Steese from June 20, 1927, to date.

Secretary and disbursing officer: Second Lieut. Frank A. Pettit, Corps of Engineers, United States Army, to December 31, 1927, and Second Lieut. Arleigh T. Bell, Corps of Engineers, United States Army, from January 1, 1927, to date.

Military assistants, under the immediate orders of the president of the board: First Lieut. Harry E. Fisher, Corps of Engineers, United States Army, to November 1, 1926; Second Lieut. Arleigh T. Bell, to December 31, 1926; Second Lieut. John R. Noyes, Corps of Engineers, United States Army, from November 9, 1926, to date; Second Lieut. Frank A. Pettit, from January 1, 1927, to date; and Maj. Lunsford E. Oliver, June 20 and June 21, 1927.

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 Secreary 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. 616, 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, 36 Stat. 1052.)

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. 936.)

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, $1,000,000, to be immediately available. (Act of February 23, 1927.)

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 1,487½ miles of wagon road, 100 miles of tramroad, 1,221½ miles of sled road, 6,925½ miles of permanent trail, and 712 miles of temporary flagged trail, a total of 10,446½ 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 expecially rugged and subject to a heavy rain and snow fall.

The timber along the coast attains a dense growth, but in the interior is only found 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.—For description of development of existing project, see Annual Report of the Chief of Engineers for 1924, page 2069.

The proposed annual appropriations and the amounts actually appropriated under the 1920 program described in the Annual Report for 1924, are as stated in the table below:

Fiscal year	Working season	Amount estimated	Amount actually appropriated
First (1922)	1921	$955,000	$425,000
Second (1923)	1922	1,200,000	465,000
Third (1924)	1923	1,500,000	650,000
Fourth (1925)	1924	1,600,000	780,000
Fifth (1926)	1925	1,400,000	900,000
Total for first 5 years		6,655,000	3,220,000

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	$4,350.000
(*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 five years	1,135,000
Total for five years	9,000,000

Federal appropriations required each year of five-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	200,000	2,000,000	----------
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	1,900,000

For latest published maps see map following page 54, Part II, of the annual report of the Alaska Road Commission fiscal year 1921, 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.—"The Building of Roads in Alaska," the Military Engineer, January–February, 1927, pages 42–47, illustrated, by Maj. Lunsford E. Oliver, 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 divisional 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 $13,052.15 by the chairman of the Territorial road commission for

the third division and $13,844.42 by the chairman of the Territorial road commission for the fourth division.

During the fiscal year it has expended directly $8,624.34 for shelter cabins, $73,714.06 for roads, $10,366.74 for aviation fields, and $1,382.50 for telephone lines, from funds contributed by the Territory, and $6,289.98 contributed by others.

For the working season of 1927 the Territorial board has allotted to the Department of Agriculture $35,750 and to the Federal board the following amounts:

Cooperative projects	$127,550.00
Shelter cabins	25,000.00
Aviation fields	23,926.38
Telephone lines	7,468.40
Nome Harbor	2,500.00
Valdez Dike	10,000.00
Total	196,444.78
Chairman third division	14,100.00
Chairman fourth division	22,100.00
Grand total	232,644.78

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 $22,073.16 was spent on its rehabilitation.

The Tolovana tramroad was purchased on June 11, 1924, for $6,425. During the fiscal year $6,932.08 was spent on its rehabilitation.

During the year the board assumed responsibility for the construction and maintenance of 24 aviation fields and the repair and maintenance of 400 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.

The act of Congress approved February 10, 1927, contains the following proviso:

> *Provided*, That the charge and control of all matters relating to the construction and maintenance of roads in Alaska which may now be under the jurisdiction of any other department, bureau, or agency of the Government, together with the records or transcripts thereof, the property, including field and office equipment and the unexpended balances of appropriations pertaining thereto, may, with the concurrence of the Secretaries of the respective departments involved, be assigned to the Board of Road Commissioners for Alaska, created by and in pursuance of the provisions of section 2 of the act of Congress 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.

Action under this act awaits the concurrence of the Secretary of Agriculture. When it is put into effect, great economies will immediately result from the elimination of duplicate headquarters personnel, rent, heat, light, etc., in Juneau, and duplicate supervisory field organizations in the first and third divisions of the Territory. Subsequently additional economies and a more efficient and effective management will result from the coordination and consolidation of personnel, methods, equipment, etc.

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: 76 miles wagon road, 135 miles sled road, 387½ miles trail, 740 linear feet of bridges of 60-foot span and over, 16 airplane landing fields, and 19 shelter cabins.

Improvement: 96 miles wagon road reconstructed, 100 miles wagon road graveled, 15 miles Nome-Shelton tramway raised to standard of 8-ton loads, and innumerable small bridges and culverts rebuilt.

Maintenance: 1,067 miles wagon road, 85 miles tramway, 758½ miles sled road, 4,692¼ miles permanent trail, 313 miles temporary flagged trail, 400 miles telephone lines, 4 airplane landing fields and 25 shelter cabins. Total for all classes of work, 7,725¾ miles, consisting of 1,339½ miles of wagon road, 100 miles of tramway, 893½ miles of sled road, 5,079¾ miles of permanent trail, and 313 miles of temporary flagged trail.

The more important roads upon which new construction was performed were the Haines-Pleasant Camp, McCarthy-Nizina, Chatanika-Circle, Mount McKinley National Park, Gulkana-Chistochina, Long-Poorman, Ophir-Takotna, Wiseman-Nolan, Wiseman-Hammond, Kodiak-Abberts, Homer Spit, and Talkeetna-Cache Creek. The extensive bridge program inaugurated the previous year was continued. The more important structures upon which new construction or extensive repairs were performed included bridges across Valdez Glacier Stream, Stewart Creek, Tonsina, Tazlina, Glacier Streams at mile 222 and 223 on Richardson Highway, West Fork Tolovana River, Little Susitna, and two crossings of Kotsina River.

The important Richardson Highway, which was reopened in 1921, was maintained open during the entire season. Improvement to new standard was placed on a three-year program for completion and at least one-third of this program was accomplished during the year. As a result of the rapid improvement, both local and tourist travel has continued to increase over this route. During the 1927 season tourist travel began in June.

The extension of the Richardson Highway from Chatanika to Circle was also put on a three-year program to open for through traffic. Well over one-third of this program was accomplished during the year.

Excellent progress was made on all this work during the past season, due partly to an early spring and favorable weather conditions generally. A late spring in 1927 has somewhat retarded opening up work.

The total expenditures during the fiscal year amounted to $1,217,166.89, of which $706,792.46 was for construction and $510,374.43 was for maintenance.

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 7,725¾ miles of the system during the fiscal year.

The 410-mile Valdez-Chitina-Fairbanks road received special attention. One more season should see this important overland route completed to a uniform standard and given a gravel surface throughout. Over 140 miles of the 165-mile extension from Fairbanks to Circle, on the upper Yukon, are now passable for wagons, and the entire route is utilized for winter travel by double bobsled.

The total expenditures to the end of the fiscal year, June 30, 1927, amounted to $11,202,790.99, not including outstanding liabilities or contributed funds, of which $6,585,880.40 was expended for new construction and $4,616,910.59 for maintenance.

Proposed operations.—The 10-year program described under "Existing project" proposed the appropriation of $2,000,000 for the prosecution of the work for the fiscal year ending June 30, 1928. Only $1,000,000 was provided by the act of February 23, 1927. These funds will be expended on rehabilitation and some improvement of the existing system. 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 1927 Congress provided for a maintenance and operations deficit on the Alaska Railroad of $1,200,000.

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

Amount which can be profitably expended during the fiscal year ending June 30, 1929.—An appropriation, in accordance with the 1924 program, of $2,000,000, to be distributed approximately as follows, can be profitably expended on the work during the fiscal year ending June 30, 1929:

District	Maintenance of existing projects						
	Mileage, existing system			(a) Repair and improvement	Average per mile		
	Roads	Sled roads	Trails		Roads	Sled roads	Trails
Southeastern	81¾		5	36,025	440		5
Bethel			988	7,750			8
Eagle	29	174¼	388	22,500	500	30	7
Valdez	105¼			162,000	1,540		
Chitina	230½		461½	194,000	830		5
Fairbanks	575	783¾	1,071	244,030	380	20	10
Southwestern	202¾	183	413½	55,290	240	20	5
Kuskokwim	82¾	53½	1,156½	47,700	490	20	5
Nome	280½	27	[1] 3,154	80,705	230	30	5
Total	1,587½	1,221½	7,637½	850,000	490	22	6

[1] Includes 712 miles temporary flagged trails.

District	New construction			Total (b), (c), and (d)	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		
Southeastern			20,000	20,000	56,025
Bethel			20,000	20,000	27,750
Eagle					22,500
Valdez			25,000	25,000	187,000
Chitina	50,000		110,000	160,000	354,000
Fairbanks	275,000	305,000		580,000	824,030
Southwestern	60,000	125,000		185,000	240,290
Kuskokwim	15,000		25,000	40,000	87,700
Nome		120,000		120,000	200,705
Total	400,000	550,000	200,000	1,150,000	2,000,000

COMMERCIAL STATISTICS

Total commerce of Alaska for the calendar year 1926:

IMPORTS

Merchandise from the United States	$31,587,337
Merchandise from foreign ports	543,683
Silver and gold from foreign ports	30,014
Total imports	32,161,034

EXPORTS

Merchandise to the United States	74,720,587
Merchandise, gold, and silver to foreign ports	522,592
Domestic gold and silver to the United States	6,160,942
Foreign gold and silver to the United States	30,530
Total exports	81,434,651
Grand total, exports and imports	113,595,685

This in an increase of $18,172,439, or over 19 per cent over the corresponding figure for 1925. The increase in exports alone was 31 per cent.

The value of Alaska's mineral output in 1926 was $17,941,469 as compared with $17,850,000 in 1925.

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

Due to a general decline in price the slight increase in the value of mineral products does not indicate the full increase in mining activities.

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 was maintained in 1926 at approximately the same rate as heretofore and was furnished mainly by the Evan-Jones, Alaska-Matanuska, and Premier mines in the Matanuska region and the Suntrana mines in the Healy River region. Some development work under lease or permit was also done at the Rawson mine on Moose Creek and on Coal Creek opposite Chickaloon. Several of the producing mines carried out considerable construction work during the year.

In 1926 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. Interest in the exploration of promising oil field in Alaska continues. Drilling to test for oil in the vicinity of Johnson Creek in the Yakataga region was carried on by the General Petroleum Co. with quite encouraging results. Examination of the naval petroleum reserve No. 4 in northern Alaska and adjacent regions was continued by a party from the Geological Survey, which went over land during the winter and spent all the summer in field work in this area. No new seepages or other definite indications of petroleum were found, but the party reports that at many places excellent structural features were recognized which afford good collecting places for any oil that might have originated in the near-by rocks.

During 1926 the production of canned salmon reached the highest peak in the history of the fisheries of Alaska with a total of 323,396,942 pounds, valued at $48,405,279. This is an increase of more than 102,000,000 pounds over the 1925 production and a value of more than $19,559,000. This production exceeds the war-time peak of 1918 by 15,137,676 pounds and $3,485,513 in value. The product of this industry is of greater value than all other products of Alaska put together, including gold and silver. The value of fish and fish products for 1926 was $56,744,490, which is almost 70 per cent of the value of shipments from the Territory.

The relative value of the chief fish products exported in 1926 is as follows: Canned salmon, cured or preserved herring, fresh and frozen halibut; clams and shrimp, etc.; cured or frozen salmon, fish oil, fresh or frozen salmon, cured or preserved cod, and fish meal.

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. Expenditures, $129,169.18.

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, $26,896.57.

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, $103,001.10.

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, $16,549.62.

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, $812.

At the request of the Quartermaster General of the Army, the board submitted a special report upon the water-supply system of Chilkoot Barracks, Alaska, and has assumed charge of the construction of a 1,500,000-gallon concrete reservoir and repairs to the pipe line crossing Chilkat Inlet. This work was completed during the fiscal year. Expenditures, $8,578.89.

Financial summary

Amount expended on all projects to June 30, 1927, including receipts from sales, etc.:		
During fiscal years 1905–1920	$5,234,085.63	
During fiscal years 1921–1926	4,854,539.57	
Fiscal year 1927	1,114,165.79	
		$11,202,790.99
Alaska special fund, 1920	101,184.56	
Alaska special fund, 1921–1926	621,362.77	
Alaska special fund, 1927	103,001.10	
		825,548.43
		12,028,339.42
Total for new work	7,028,942.82	
Total for maintenance	4,999,396.60	
Total expended		12,028,339.42
Balance unexpended		888,399.68
Grand total to be accounted for		12,916,739.10

Appropriations to June 30, 1927:	
Construction and maintenance of military and post roads, bridges, and trails, Alaska	$8,548,100.00
Wagon roads, bridges, and trails, Alaska fund	3,156,026.52
Increase of compensation, War Department	95,059.50
National cemeteries	1,402.17
Roads and trails, national parks	146,000.00
Funds contributed by Territory of Alaska and others for public roads, bridges, trails, and ferries, Alaska special fund	819,895.44
Refunds to War Department appropriations	19,203.60
Sales, refunds, etc., Alaska fund to June 30, 1920	50,910.77
Sales, refunds, etc., Alaska fund since June 30, 1920	64,955.61
Sales, refunds, etc., to accrue to Alaska fund, June 30, 1927	692.04
Refunds to increase of compensation	16.95
Refunds to roads and trails, national parks	20.94
Refunds to contributed funds	10,479.37
Reimbursement from Navy Department	3,976.19
Total	12,916,739.10

Fiscal year ending June 30	1923	1924	1925	1926	1927
Expended for improvement and new work	$314,195.39	$490,360.53	$728,040.04	$828,045.88	$706,792.46
Expended for maintenance	425,887.10	445,747.12	410,307.60	483,272.31	510,374.43
Total expended (net)	740,082.49	936,107.65	1,138,347.64	1,311,317.69	1,217,166.89
Appropriated by War Department acts	1,115,000.00	725,600.00	955,000.00	900,000.00	1,022,500.20
Allotted from Alaska fund	119,227.10	115,803.20	123,871.33	137,431.66	142,905.08
National cemeteries			300.00	302.17	800.00
Contributed by Territory of Alaska and others	113,392.42	110,865.35	79,861.57	136,318.11	93,772.39
Roads and trails, national parks			80,000.00	50,000.00	16,000.00
Increase of compensation, War Department	28,857.72	58,958.95	1,835.54		
Total	1,376,477.24	1,011,227.50	1,240,868.44	1,224,051.94	1,275,977.67

July 1, 1926, available balance		$812,070.22
Amount appropriated by War Department, act approved Feb. 23, 1927		1,000,000.00
Amount appropriated by War Department, act approved Feb. 23, 1927, for Juneau Wharf		22,500.00
Amount accrued to Alaska fund during fiscal year 1927		142,905.28
Amount contributed by Territory of Alaska and others		93,772.39
Refunds, all appropriations		4,812.03
Receipts from sales, etc., during fiscal year 1927		12,706.65
National cemeteries, 1927		800.00
Roads and trails, national parks, 1927–28		16,000.00
Total resources		2,105,566.57
June 30, 1927, amount expended during fiscal year, including receipts from sales, etc.:		
New work	$706,792.46	
Maintenance	510,374.43	
		1,217,166.89
July 1, 1927, balance unexpended		888,399.68
July 1, 1927, outstanding liabilities		302,769.29
July 1, 1927, balance unobligated		585,630.39
Amount available from War Department, act approved Feb. 23, 1927		747,852.40

Amount available from War Department, act approved Feb. 23, 1927, for Juneau Wharf	$22,500.00
Amount available from Alaska fund on June 30, 1927	112,528.86
Sales to accrue to Alaska fund on June 30, 1927	692.04
Amount available from funds contributed on June 30, 1927	4,826.38
Amount available for fiscal year ending June 30, 1928	888,399.68
Amount (estimated) required to be appropriated for completion of existing projects	7,100,000.00
Amount that can be profitably expended in fiscal year ending June 30, 1929:	
New work	1,150,000.00
Maintenance	850,000.00
Total	[1] 2,000,000.00

APPROPRIATIONS

1. Construction and maintenance of military and post roads, bridges, and trails, Alaska:		
Total amount appropriated to June 30, 1920 (see detailed statement on p. 2105. Annual Report of the Chief of Engineers, 1920)	$3,370,000.00	
Act of—		
June 20, 1906	[2] 35,000.00	
June 30, 1921	425,000.00	
June 30, 1922	465,000.00	
Mar. 2, 1923	[3] 650,600.00	
June 7, 1924	725,000.00	
Dec. 6, 1924	[4] 55,000.00	
Feb. 12, 1925	900,000.00	
Apr. 15, 1926	900,000.00	
Feb. 23, 1927	[5] 1,022,500.00	
Total		$8,548,100.00
2. Construction and maintenance of wagon roads, bridges, and trails, Alaska fund, act of Congress approved Jan. 27, 1905, as amended by an act approved May 14, 1906:		
Total receipts to June 30, 1920 (see detailed statement on p. 2106, Annual Report of the Chief of Engineers, 1920)	$2,128,569.89	
Fiscal year—		
1920 (supplementary)	153,805.19	
1921	98,437.82	
1922	135,975.05	
1923	119,227.10	
1924	115,803.20	
1925	123,871.33	
1926	137,431.66	
1927	142,905.28	
Total		3,156,026.52

[1] Exclusive of available funds.
[2] For Fairbanks-Council Survey.
[3] Includes $600 for survey of Juneau wharf.
[4] Deficiency to cover increase of compensation, 1925.
[5] Includes $22,500 for Juneau wharf.

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	
Total		$95,059.50
4. National cemeteries:		
Fiscal year—		
1925	$302.17	
1926	300.00	
1927	800.00	
Total		1,402.17
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	
Total		146,000.00
Total Federal appropriations		11,946,588.19

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	54,737.28	
1923	112,012.88	
1924	106,325.35	
1925	78,978.45	
1926	133,499.10	
1927	88,015.76	
Total		$802,833.37
2. By others:		
Fiscal year—		
1922	$1,683.77	
1923	1,379.54	
1924	4,540.00	
1925	883.12	
1926	2,819.01	
1927	5,756.63	
Total		17,062.07
Total, contributed funds		819,895.44
Grand total, all funds		12,766,483.63

O

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 1 - 1928

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1928

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

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1928

[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.

147100YY—28

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. 616, 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, 36 Stat. 1052.)

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, $825,000, 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 1,523¼ miles of wagon road, 100 miles of tramroad, 1,375¼ miles of sled road, 7,044½ 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 apropriations 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	$4,350,000
(*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	200,000	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	$136,385.00
Shelter cabins	12,530.44
Aviation fields	35,490.63
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-Abberts, 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 acomplished 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 $1,253,668.18, 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	66¾		20	33,475	500		10
Bethel		26	988	8,900		40	8
Eagle	29	174¼	388	21,000	450	30	7
Valdez	105¼			84,200	800		
Chitina	239		483	143,400	590		5
Fairbanks	601½	879½	1,132	341,225	520	20	10
Southwestern	221¾	192	426	83,400	350	20	5
Kuskokwim	84	53½	1,175½	40,550	400	20	5
Nome	276	50	[1] 3,144	93,850	280	30	5
Total	1,623¾	1,375¼	7,756½	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	28,900
Eagle	$40,000			40,000	61,000
Valdez			25,000	25,000	109,200
Chitina	80,000	$100,000	110,000	290,000	433,400
Fairbanks	200,000	130,000		330,000	671,225
Southwestern	180,000	100,000		280,000	363,400
Kuskokwim			25,000	25,000	65,550
Nome		120,000		120,000	213,850
Total	500,000	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	$35,604,008
Merchandise from foreign ports	766,302
Silver and gold from foreign ports	6,060
Total imports	36,376,370

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 $4,215,336, or 13 per cent, over the corresponding figure for 1926.

The value of Alaska's mineral output in 1927 was $14,445,000, 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 mine in 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 Yakataga

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	$5,234,085.63	
During fiscal years 1921–1927	5,968,705.36	
During fiscal year 1928	1,055,578.84	
		$12,258,369.83
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
		13,282,007.60
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		14,223,715.12

Appropriations to June 30, 1928:	
Construction and maintenance of military and post roads, bridges, and trails, Alaska	9,350,600.00
Wagon roads, bridges, and trails, Alaska fund	3,229,680.16
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	20.94
Refunds to contributed funds	10,481.61
Reimbursement from Navy Department	3,976.19
Total	14,223,715.12

Fiscal year ending June 30	1924	1925	1926	1927	1928
Expended for new work [1]	$490,360.53	$728,040.04	$828,045.38	$706,792.46	$430,923.16
Expended for maintenance and improvement	445,747.12	410,307.60	483,272.31	510,374.43	822,745.02
Total expended (net)	936,107.65	1,138,347.64	1,311,317.69	1,217,166.89	1,253,668.18
Appropriated by War Department acts	725,600.00	955,000.00	900,000.00	1,022,500.00	825,000.00
Allotted from Alaska fund	115,803.20	123,871.33	137,431.66	142,905.28	73,653.64
Contributed by Territory of Alaska and others	110,865.35	79,861.57	136,318.11	93,772.39	210,862.74
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	58,958.95	1,835.54			
Total	1,011,227.50	1,240,868.44	1,224,051.94	1,275,977.67	1,295,306.38

[1] From 1924 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		6,275,000.00
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		[1] 2,000,000.00

APPROPRIATIONS

1. Construction and maintenance of military and post roads, bridges, and trails, Alaska:	
Total amount appropriated to June 30, 1920 (see detailed statement on p. 2105, Annual Report of the Chief of Engineers, 1920)	$3,370,000.00
Act of—	
June 30, 1906	[2] 35,000.00
June 30, 1921	425,000.00
June 30, 1922	465,000.00
Mar. 2, 1923	[3] 650,600.00
June 7, 1924	725,000.00

[1] Exclusive of available funds.
[2] For Fairbanks-Council survey.
[3] Includes $600 for survey of Juneau wharf.

1. Construction and maintenance of military and post roads, etc.—Continued.		
Act of—		
Dec. 6, 1924	[1] $55,000.00	
Feb. 12, 1925	900,000.00	
Apr. 15, 1926	900,000.00	
Feb. 23, 1927	[2] 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, 1905, as amended by an act approved May 14, 1906:		
Total receipts to June 30, 1920 (see detailed statement on p. 2106, Annual Report of the Chief of Engineers, 1920)	2,128,569.89	
Fiscal year —		
1920 (supplementary)	153,805.19	
1921	98,437.82	
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		3,229,680.16
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		13,006,041.83

[1] Deficiency to cover increase of compensation, 1925.
[2] Includes $22,500 for Juneau wharf.

5. Road 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	
Mar. 4, 1929	65,000.00	
Total		$271,000.00
Total Federal appropriations		14,022,467.34

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	54,737.28	
1923	112,012.88	
1924	106,325.35	
1925	78,978.45	
1926	133,499.10	
1927	88,015.76	
1928	191,363.59	
1929	189,982.45	
Total		$1,184,179.41
2. By others:		
Fiscal year—		
1922	1,683.77	
1923	1,379.54	
1924	4,540.00	
1925	883.12	
1926	2,819.01	
1927	5,756.63	
1928	19,489.15	
1929	23,430.32	
Total		59,981.54
3. Funds contributed for the control of Lowell Creek, Alaska		25,000.00
Total contributed funds		1,269,160.95
Grand total, all funds		15,291,628.29

EDGAR JADWIN,
Major General, Chief of Engineers.

O

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

PART 1

EXTRACT FROM THE ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1929

WAR DEPARTMENT

OFFICE OF THE CHIEF OF ENGINEERS

1929

YY

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1930

EXTRACT

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

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1930

AAA

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

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, September 22, 1930.

* * * * * * *

11714AAA—31

BOARD OF ROAD COMMISSIONERS FOR ALASKA

OFFICERS OF THE BOARD

President: Maj. Malcolm Elliott, Corps of Engineers, United States Army.

Engineer officer: Maj. Douglas H. Gillette, Corps of Engineers, United States Army, to February 15, 1930; Maj. Malcolm Elliott, February 16, 1930, to June 24, 1930; and Maj. Layson E. Atkins, Corps of Engineers, United States Army, June 25, 1930, to date.

Secretary and disbursing officer: First Lieut. Emerson C. Itschner, Corps of Engineers, United States Army, to July 31, 1929; First Lieut. Philip R. Garges, Corps of Engineers, United States Army, August 1, 1929, to January 31, 1930; and First Lieut. James G. Christiansen, Corps of Engineers, United States Army, February 1, 1930, to date.

Military assistants, under the immediate orders of the president of the board: First Lieut. Emerson L. Cummings, Corps of Engineers, United States Army, to August 29, 1929; First Lieut. Emerson C. Itschner to August 22, 1929; First Lieut. James G. Christiansen to January 31, 1930; First Lieut. Philip R. Garges to April 4, 1930; Second Lieut. Leland B. Kuhre, Corps of Engineers, United States Army, from August 19, 1929, to date; and Second Lieut. Raymond B. Oxrieder, Corps of Engineers, United States Army, from August 19, 1929, to date.

Organization and duties.—The board was constituted by an act of Congress approved January 27, 1905, and its duties are defined in that act as amended by Congress January 27, 1905, May 14, 1906, and March 3, 1913. The law prescribes that the board shall consist of three members, one of whom shall be an Engineer officer, and the others officers of that part of the Army stationed in said district.

The board has the power and the duty, upon its own motion, or upon petition to locate, lay out, construct, and maintain wagon roads and pack trails from any point on the navigable waters in the District of Alaska to any town, mining, or other industrial camp or settlement, or between any such towns, camps, or settlements therein, if in its judgment such roads or trails are needed and will be of permanent value for the development of the district.

The money therefor is derived, in part, from congressional appropriations and in part from the Alaska fund made up of moneys collected for occupation or trade license outside of the incorporated towns in the Territory, 65 per cent of which fund is devoted to the construction and maintenance of wagon roads, bridges, and trails in the said Territory.

The substance of the laws governing the operations of the board is printed on pages 2144 and 2145 of the Annual Report of the Chief of Engineers for 1929.

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 1,620½ miles of wagon road, 87 miles of

tramroad, 1,403¾ miles of sled road, 7,184 miles of permanent trail, and 712 miles of temporary, flagged trail, a total of 11,007¼ 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 material 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	$4,350,000
(*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

PROGRAM FOR 1924

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	200,000	2,000,000	825,000
1930	1929	850,000	250,000	300,000	350,000	1,750,000	800,000
1931	1930	850,000	100,000	65,000	·485,000	1,500,000	800,000
Total		4,350,000	1,735,000	1,780,000	1,135,000	9,0000,000	4,325,000

A new 10-year program to continue the work beginning with fiscal year 1932 has been submitted. It provides for maintenance and improvement of the existing system and for needed new construction to keep pace with the development of the territory.

The appropriations recommended for each year of this 10-year period are as follows:

PROGRAM FOR 1929

Fiscal year	Working season	For maintenance and improvements	For new construction	Total for maintenance, improvement, and new construction	Estimated receipts from Alaskan sources			Federal appropriations required
					Alaska fund	Territorial appropriations	Total from Alaska	
1932	1931	$886,000	$400,000	$1,286,000	$130,000	$100,000	$230,000	$1,056,000
1933	1932	871,000	600,000	1,471,000	130,000	100,000	230,000	1,241,000
1934	1933	866,000	900,000	1,766,000	130,000	100,000	230,000	1,536,000
1935	1934	856,000	900,000	1,756,000	130,000	100,000	230,000	1,526,000
1936	1935	841,000	900,000	1,741,000	130,000	100,000	230,000	1,511,000
1937	1936	882,000	1,000,000	1,882,000	130,000	100,000	230,000	1,652,000
1938	1937	918,000	900,000	1,818,000	130,000	100,000	230,000	1,588,000
1939	1938	954,000	900,000	1,854,000	130,000	100,000	230,000	1,624,000
1940	1939	978,000	600,000	1,578,000	130,000	100,000	230,000	1,348,000
1941	1940	995,000	400,000	1,395,000	130,000	100,000	230,000	1,165,000
Total		9,047,000	7,500,000	16,547,000	1,300,000	1,000,000	2,300,000	14,247,000

For latest published maps see map following page 151, Part II, of the Annual Report of the Alaska Road Commission, fiscal year 1929, 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.—None.

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.

During the fiscal year the board has expended directly $8,206.83 for shelter cabins, $96,273.99 for roads, $39,216.81 for aviation fields, $5,661.20 for the Valdez Dike, $361 for marking Gastineau Channel Bar, Yukon-Kuskokwim Portage $10,500, and $4,680.64 for telephone lines from funds contributed by the Territory, and $15,179.68 contributed by others.

For the working season of 1930 the Territorial board has allotted to the Department of Agriculture $11,000 and to the Federal board the following amounts:

Cooperative road projects	$53,500
Territorial road projects	29,750
Shelter cabins	8,000
Aviation fields	33,400
Telephone lines	5,000
Nome Harbor	2,500
Valdez Dike	7,500
Total	139,650

These funds are held subject to the call of the Federal board.

Cooperation with the Territory has been continued in connection with the purchase, rehabilitation, and operations of two tramroads, one extending from Nome to Shelton on the Seward Peninsula, a distance of about 74 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 $12,275.15 was spent on its maintenance.

The Tolovana tramroad was purchased on June 11, 1924, for $6,425. During the fiscal year $8,688.07 was spent on its rehabilitation and maintenance.

During the year the board assumed responsibility for the construction and maintenance of 40 aviation fields and the repair and maintenance of 736 miles of telephone lines for 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 maintaining the existing system and the improvement of the more important routes for the use of motor vehicles. New construction was confined to a few major projects upon which work has been in progress for several years.

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

New construction: 37 miles road, 38 miles trail, 780 linear feet bridges over 60-foot span, 11 airplane landing fields, and 14 shelter cabins.

Improvement: 58½ miles road reconstructed, 66¾ miles road surfaced, 2 miles Tolovana tramway rebuilt, and numerous small bridges and culverts rebuilt.

Maintenance: 1,342½ miles road, 85 miles tramway, 905¼ miles sled road, 4,277¼ miles permanent trail, 314 miles temporary flagged trail, 736 miles telephone lines, 29 airplane landing fields, and 40 shelter cabins.

Total for all classes of work: 7,126¼ miles consisting of 1,504¾ miles of road, 87 miles tramway, 905¼ miles sled road, 4,315¼ miles of permanent trail, 314 miles 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, Haines-Chilkoot, Kasilof, Iliamna, Circle Hot Springs, and Nome-Council. The bridge renewal program was continued. The more important structures upon which new construction or extensive repairs were performed included bridges across Chistochina River, Noyes slough, and East Fork.

The important Richardson Highway was maintained open during the entire season. Improvement to new standard was continued and except for a few short sections this road is now in excellent condition for auto traffic. As a result of the rapid improvement both local and tourist travel have continued to increase. During the 1930 season tourist travel began in June.

Surfacing of the Steese Highway was continued. As a result of the improvement traffic over this route continued to increase. During the 1930 season travel began over this route in May.

Construction of the road from Gulkana on the Richardson Highway to Chisana, through the mineralized belt north of the Wrangell Mountains was continued. This is now the major new project under construction. Grading is in progress and should be continued to open up hitherto inaccessible mineral deposits.

Work was started late in 1929 and an unusual amount of precipitation during the summer greatly retarded the progress of the work.

The total expenditures during the fiscal year amounted to $1,256,349.65, of which $515,093.39 was for new work and $741,256.26 was for maintenance and improvement.

Condition at end of fiscal year.—The work of maintenance and improvement during the fiscal year, provided additional mileage with a light surface and a large part of the roads are now suitable for the present traffic. Additional mileage requires surfacing to provide for increasing motor traffic.

The total expenditures to the end of the fiscal year, June 30, 1930, amounted to $14,532,308.63, not including outstanding liabilities or contributed funds, of which $7,969,443.90 was expended for new construction and $6,562,864.73 for maintenance and improvement.

Proposed operations.—Eight hundred thousand dollars was provided by the act of May 28, 1930. These funds will be expended on maintenance and improvement of the existing system and some new work. Surfacing of the recently graded Fairbanks-Circle Road will be continued and construction of new mileage on the Gulkana-Chisana and several minor projects will be accomplished. Unless much greater annual appropriations are made, little of the much needed new mileage can be constructed and but little can be done to meet the pressing need for extensions and improvements to the system as a whole.

Amount which can be profitably expended during the fiscal year ending June 30, 1932.—An appropriation of $1,056,000, in accordance with the 1929 program, could be profitably expended on the work during the fiscal year 1932. This sum will provide for reasonable maintenance and improvement of the existing system and for construction of some much needed new mileage on adopted projects.

These funds will be distributed approximately as follows:

District	Maintenance and improvement of existing projects						
	Mileage existing system			(a) Required from War Department appropriation	Average per mile		
	Roads	Sled roads	Trails		Roads	Sled roads	Trails
Southeastern	70½		26	$21,460	$300		$15
Bethel		26	985	8,900		$40	8
Eagle	29	174¼	388	15,790	300	25	7
Valdez	105¼			63,100	600		
Chitina	273		509	152,750	550		5
Fairbanks	619¼	887	1,160	211,750	300	20	7
Southwestern	246	186	458	[1] 66,900	[1] 300	20	5
Kuskokwim	85	82½	1,147½	32,900	300	20	5
Nome	275	50	[2] 3,169	82,450	250	20	4
Total	1,703	1,405¾	7,842½	656,000	349	21	6

[1] Exclusive of the cost of work on Mount McKinley Park Road, 43 miles, which is borne by the National Park Service.
[2] Includes 712 miles temporary flagged trails.

Estimated revenue from Alaskan sources	230,000
Total cost maintenance and improvement	886,000

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					$21,460
Bethel					8,900
Eagle					15,790
Valdez					63,100
Chitina	$250,000		$50,000	$300,000	452,750
Fairbanks	30,000	$50,000		80,000	291,750
Southwestern	20,000			20,000	86,900
Kuskokwim					32,900
Nome					82,450
Total	300,000	50,000	50,000	400,000	1,056,000

COMMERCIAL STATISTICS

Total commerce of Alaska for the calendar year 1929:

IMPORTS

Merchandise from the United States	$33,219,565
Merchandise from foreign ports	955,273
Silver and gold from foreign ports	480,885
Total imports	34,655,723

EXPORTS

Merchandise to the United States	63,567,177
Merchandise, gold, and silver to foreign ports	607,952
Domestic gold and silver to the United States	7,408,495
Foreign gold and silver to the United States	479,049
Total exports	72,062,673
Grand total, exports and imports	106,718,396

Exports declined $2,787,245, or 4 per cent, from the corresponding figure for 1928. This decrease is entirely due to decreased exports of canned salmon.

Imports increased $2,018,890, or 6 per cent, over the corresponding figure for 1928.

The value of Alaska's mineral output in 1929 was $16,105,000 as compared with $14,061,000 in 1928.

Minerals were produced in the following order of value: Gold, copper, coal, silver, lead, marble, tin, petroleum, and platinum.

Production of gold again exceeded in value that of copper. While the quantity of copper produced shows a decrease, the value increased $1,268,000, or 21 per cent. Gold production exceeded that of the previous year $903,000, or 13 per cent. This was due to increased production by large dredges from interior placer deposits and to increased production from lode mines in southeastern Alaska.

There are still large areas in Alaska not adequately prospected, and many promising properties are 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.

The production of coal showed a slight decrease in 1929 compared to that of the preceding year. The output was furnished mainly by the Evan Jones and Premier mines in the Matanuska region and the Suntrana mine in the Healy River field.

In 1929, 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.

The 1929 production of canned salmon, while above the average, showed a decrease of over 11 per cent compared to the previous year.

The relative value of the chief fish products exported in 1929 is as follows: Canned salmon, fresh and frozen halibut, cured or preserved salmon, fish oil, cured or preserved herring, fish meal, fresh and frozen salmon, shrimps, clams, cured or preserved cod and crabs.

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.

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, $180,080.15.

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, $161,432.96.

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, $1,499.08.

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. Expenditures, $3,482.81.

By authority of the Chief of Engineers the board has undertaken the supervision of the construction work and operations of licensee, including stream gaging, connected with the power development on Eklutna River, Alaska.

At the request of the commanding general, Ninth Corps Area, the board has undertaken a survey and report on the water supply for Chilkoot Barracks, Alaska.

At the request of the several departments interested the board has undertaken the construction of a float for Government boats at Juneau.

Financial summary

Amount expended on all projects:		
From Federal funds, including receipts from sales, etc., to June 30, 1929	$13,456,039.13	
Net expenditures, 1930	1,076,269.50	
		$14,532,308.63
From contributed funds, including re-receipts from sales, etc., to June 30, 1929	1,273,132.38	
Net expenditures, 1930	180,080.15	
		1,453,212.53
		15,985,521.16
Total for new work	8,605,506.32	
Total for maintenance and improvement	7,380,014.84	
Total expended		15,985,521.16
Balance unexpended		896,998.10
Grand total to be accounted for		16,882,519.26
Appropriations to June 30, 1930:		
Construction and maintenance of military and post roads, bridges, and trails, Alaska		10,950,600.00
Wagon roads, bridges, and trails, Alaska fund		3,596,870.70
Construction of wharf at Juneau		22,500.00
Flood control of Lowell Creek		100,000.00
Flood control of Lowell Creek (contributions)		25,000.00
Increase of compensation, War Department		95,059.50
National cemeteries		4,841.00
Roads and trails, national parks		491,000.00
Contributed funds (by Territory of Alaska and others)		1,432,610.82
Adjustments to June 30, 1929 (reimbursements, refunds, sales, etc.)		164,037.24
Total		16,882,519.26

Fiscal year ending June 30	1926	1927	1928	1929	1930
Expended for new work [1]	$828,045.38	$706,792.46	$430,923.16	$630,546.95	$515,093.39
Expended for maintenance and improvement	483,272.31	510,374.43	822,745.02	816,616.96	741,256.26
Total expended (net)	1,311,317.69	1,217,166.89	1,253,668.18	1,447,163.91	1,256,349.65
Appropriated by War Department acts	900,000.00	1,022,500.00	825,000.00	800,000.00	800,000.00
Allotted from Alaska fund	137,431.66	142,905.28	73,653.64	150,432.68	216,757.86
Contributed by Territory of Alaska and others	136,318.11	93,772.39	210,852.74	213,412.77	188,449.87
Flood control of Lowell Creek			100,000.00		
Flood control of Lowell Creek (contributions)			25,000.00		
National cemeteries	302.17	800.00	792.83	1,000.00	1,646.00
Roads and trails, national parks	50,000.00	16,000.00	60,000.00	65,000.00	220,000.00
Total	1,224,051.94	1,275,977.67	1,295,299.21	1,229,845.45	1,426,853,73

[1] From 1925 to 1927, inclusive, the figures shown include certain improvements classed as "New work" which for subsequent years are included under "Maintenance and improvement."

July 1, 1929, available balance		$726,494.02
Amount appropriated by War Department, act approved May 28, 1930		800,000.00
Amount accrued to Alaska fund during fiscal year 1930		216,757.86
Amount contributed by Territory of Alaska and others		188,449.87
National cemeteries, 1929		176.00
National cemeteries, 1930		1,470.00
Roads and trails, national parks, 1930–31		220,000.00
Total resources		2,153,347.75
June 30, 1930, net amount expended during fiscal year:		
New construction	$515,093.39	
Maintenance and improvement	741,256.26	
		1,256,349.65
July 1, 1930, balance unexpended		896,998.10
July 1, 1930, outstanding liabilities		357,327.23
July 1, 1930, balance unobligated		539,670.87
Amounts available on June 30, 1930:		
From War Department, act approved May 28, 1930		653,002.46
From War Department, act approved Mar. 23, 1928, for flood control, Lowell Creek, Alaska		9,518.88
From Alaska fund		160,182.15
From funds contributed		14,969.72
From national cemeteries		146.20
From roads and trails, national parks		59,178.69
Amount available for fiscal year ending June 30, 1931		896,998.10
Amount (estimated) required to be appropriated for completion of existing projects		4,675,000.00
Amount that can be profitably expended in fiscal year ending June 30, 1931:		
New construction		400,000.00
Maintenance and improvement		656,000.00
Total		[1] 1,056,000.00

[1] Exclusive of available funds.

APPROPRIATIONS

1. Construction and maintenance of military and post roads, bridges, and trails, Alaska:		
Total amount appropriated to June 30, 1920 (see detailed statement on p. 2105, Annual report of the Chief of Engineers, 1920)	$3,370,000.00	
Act of—		
June 30, 1906	[1] 35,000.00	
June 30, 1921	425,000.00	
June 30, 1922	465,000.00	
Mar. 2, 1923	[2] 650,600.00	
June 7, 1924	725,000.00	
Dec. 6, 1924	[3] 55,000.00	
Feb. 12, 1925	900,000.00	
Apr. 15, 1926	900,000.00	
Feb. 23, 1927	[4] 1,022,500.00	
Mar. 23, 1928	825,000.00	
Mar. 23, 1928, flood control, Lowell Creek	100,000.00	
Feb. 28, 1929	800,000.00	
May 28, 1930	800,000.00	
Total		$11,073,100.00
2. Construction and maintenance of wagon roads, bridges, and trails, Alaska fund, act of Congress approved Jan. 27, 1905, as amended by an act approved May 14, 1906:		
Total receipts to June 30, 1920 (see detailed statement on p. 2106, Annual Report of the Chief of Engineers, 1920)	2,128,569.89	
Fiscal year—		
1920 (supplementary)	153,805.19	
1921	98,437.82	
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	
1929	150,432.68	
1930	216,757.86	
Total		3,596,870.70
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	
Total		95,059.50

[1] For Fairbanks-Council survey.
[2] Includes $600 for survey of Juneau Wharf.
[3] Deficiency to cover increase of compensation, 1925.
[4] Includes $22,500 for Juneau Wharf.

4. National cemeteries:		
Fiscal year—		
1925	$302.17	
1926	300.00	
1927	800.00	
1928	792.83	
1929	1,176.00	
1930	1,470.00	
Total		$4,841.00
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. 4, 1928	60,000.00	
Mar. 4, 1929	65,000.00	
May 14, 1930	220,000.00	
Total		491,000.00
Total Federal appropriations		15,260,871.20

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	54,737.28	
1923	112,012.88	
1924	106,325.35	
1925	78,978.45	
1926	133,499.10	
1927	88,015.76	
1928	191,363.59	
1929	189,982.45	
1930	170,480.64	
Total		$1,354,660.05
2. By others:		
Fiscal year—		
1922	1,683.77	
1923	1,379.54	
1924	4,540.00	
1925	883.12	
1926	2,819.01	
1927	5,756.63	
1928	19,489.15	
1929	23,430.32	
1930	17,969.23	
Total		77,950.77
3. Funds contributed for the control of Lowell Creek, Alaska		25,000.00
Total contributed funds		1,457,610.82
Grand total, all funds		16,718,482.02

LYTLE BROWN,
Major General, Chief of Engineers.

O

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

EXTRACT FROM THE ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1931

WAR DEPARTMENT

OFFICE OF THE CHIEF OF ENGINEERS

1931

Part I

BBB

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1931

EXTRACT

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

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1932

BBB

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

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, September 28, 1931.

* * * * * * *

BOARD OF ROAD COMMISSIONERS FOR ALASKA

OFFICERS OF THE BOARD

President: Maj. Malcolm Elliott, Corps of Engineers, United States Army.

Engineer officer: Maj. Layson E. Atkins, Corps of Engineers, United States Army.

Secretary and disbursing officer: First Lieut. James G. Christiansen, Corps of Engineers, United States Army, to July 31, 1930; First Lieut. Raymond B. Oxrieder, Corps of Engineers, United States Army, August 1, 1930, to January 31, 1931; and First Lieut. Leland B. Kuhre, Corps of Engineers, United States Army, February 1, 1931, to date.

Military assistants, under the immediate orders of the president of the board: First Lieut. James G. Christiansen to November 3, 1930; First Lieut. Raymond B. Oxrieder to July 31, 1930, and from February 1, 1931, to date; First Lieut. Leland B. Kuhre to Jan-

[1] Exclusive of available funds.

77711 BBB—31

uary 31, 1931; First Lieut. Albert H. Burton, Corps of Engineers, United States Army, July 20, 1930, to date; and First Lieut. Walter W. Hodge, Corps of Engineers, United States Army, November 5, 1930, to date.

Organization and duties.—The board was constituted by an act of Congress approved January 27, 1905, and its duties are defined in that act as amended by Congress January 27, 1905, May 14, 1906, and March 3, 1913. The law prescribes that the board shall consist of three members, one of whom shall be an Engineer officer, and the others officers of that part of the Army stationed in said district.

The board has the power and the duty, upon its own motion or upon petition, to locate, lay out, construct, and maintain wagon roads and pack trails from any point on the navigable waters in the District of Alaska to any town, mining or other industrial camp or settlement, or between any such towns, camps, or settlements therein, if in its judgment such roads or trails are needed and will be of permanent value for the development of the district.

The money therefor is derived, in part, from congressional appropriations and in part from the Alaska fund made up of moneys collected for occupation or trade license outside of the incorporated towns in the Territory, 65 per cent of which fund is devoted to the construction and maintenance of wagon roads, bridges, and trails in the said Territory.

The substance of the laws governing the operations of the board is printed on pages 2144 and 2145 of the Annual Report of the Chief of Engineers for 1929. The following act of Congress, approved May 15, 1930 (Pub. No. 228, 71st Cong.), provides for a study regarding the construction of a highway from the United States to Alaska:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President of the United States is hereby authorized to designate three special commissioners to cooperate with representatives of the Dominion of Canada in a study regarding the construction of a highway to connect the northwestern part of the United States with British Columbia, Yukon Territory, and Alaska, with a view to ascertaining whether such a highway is feasible and economically practicable. Upon completion of such study the results shall be reported to Congress.

SEC. 2. The sum of $10,000 is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, for the purposes of carrying out the provisions of this Act.

The president of the board was appointed by the President, July 28, 1930, as a special commissioner for the purpose designated in the foregoing act.

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 1,664¾ miles of wagon road, 87 miles of tramroad, 1,399¼ miles of sled road, 7,326 miles of permanent trail, and 712 miles of temporary, flagged trail, a total of 11,189 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 material 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	$4,350,000
(*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

PROGRAM FOR 1924

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	200,000	2,000,000	825,000
1930	1929	850,000	250,000	300,000	350,000	1,750,000	800,000
1931	1930	850,000	100,000	65,000	485,000	1,500,000	800,000
1932	1931						800,000
Total		4,350,000	1,735,000	1,780,000	1,135,000	9,000,000	5,125,000

A new 10-year program to continue the work beginning with fiscal year 1932 has been submitted. It provides for maintenance and improvement of the existing system and for needed new construction to keep pace with the development of the territory.

The appropriations recommended for each year of this 10-year period are as follows:

PROGRAM FOR 1929

Fiscal year	Working season	For maintenance and improvements	For new construction	Total for maintenance, improvement, and new construction	Estimated receipts from Alaskan sources			Federal appropriations required
					Alaska fund	Territorial appropriations	Total from Alaska	
1932	1931	$886,000	$400,000	$1,286,000	$130,000	$100,000	$230,000	$1,056,000
1933	1932	871,000	600,000	1,471,000	130,000	100,000	230,000	1,241,000
1934	1933	866,000	900,000	1,766,000	130,000	100,000	230,000	1,536,000
1935	1934	856,000	900,000	1,756,000	130,000	100,000	230,000	1,526,000
1936	1935	841,000	900,000	1,741,000	130,000	100,000	230,000	1,511,000
1937	1936	882,000	1,000,000	1,882,000	130,000	100,000	230,000	1,652,000
1938	1937	918,000	900,000	1,818,000	130,000	100,000	230,000	1,588,000
1939	1938	954,000	900,000	1,854,000	130,000	100,000	230,000	1,624,000
1940	1939	978,000	600,000	1,578,000	130,000	100,000	230,000	1,348,000
1941	1940	995,000	400,000	1,395,000	130,000	100,000	230,000	1,165,000
Total		9,047,000	7,500,000	16,547,000	1,300,000	1,000,000	2,300,000	14,247,000

For latest published maps see map following page 89, Part II, of the Annual Report of the Alaska Road Commission, fiscal year 1930, 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.—None.

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.

During the fiscal year the board has expended directly $10,422.16 for shelter cabins, $95,758.41 for roads, $25,219.45 for aviation fields, $7,733.88 for the Valdez Dike, $220 for marking Gastineau Channel Bar, Yukon-Kuskokwim Portage $500, and $5,452.64 for telephone lines from funds contributed by the Territory, and $20,298.32 contributed by others.

For the working season of 1931 the Territorial board has allotted to the Department of Agriculture $10,000 and to the Federal board the following amounts:

Cooperative road projects	$77,350
Territorial road projects	18,300
Shelter cabins	3,650
Aviation fields	12,450
Telephone lines	3,100
Nome Harbor	2,500
Valdez Dike	15,000
Iditarod River	5,000
Total	137,350

These funds are held subject to the call of the Federal board.

Cooperation with the Territory has been continued in connection with the purchase, rehabilitation, and operations of two tramroads, one extending from Nome to Shelton on the Seward Peninsula, a distance of about 74 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 $11,671.40 was spent on its maintenance.

The Tolovana tramroad was purchased on June 11, 1924, for $6,425. During the fiscal year $6,314.23 was spent on its rehabilitation and maintenance.

During the year the board assumed responsibility for the construction and maintenance of 36 aviation fields and the repair and maintenance of 736 miles of telephone lines for 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 maintaining the existing system and the improvement of the more important routes for the use of motor vehicles. New construction was confined to a few major projects upon which work has been in progress for several years.

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

New construction: 52 miles road, 4½ miles sled road, 138 miles trail, 6 airplane landing fields, and 19 shelter cabins.

Improvement: 55¼ miles road reconstructed, 86½ miles road surfaced, and numerous small bridges and culverts rebuilt.

Maintenance: 1,387½ miles road, 87 miles tramway, 789½ miles sled road, 4,343¾ miles permanent trail, 329 miles temporary flagged trail, 736 miles telephone lines, 30 airplane landing fields, and 47 shelter cabins.

Total for all classes of work: 7,273 miles, consisting of 1,581¼ miles of road, 87 miles tramway, 794 miles sled road, 4,481¾ miles of permanent trail, and 329 miles temporary flagged trail.

The more important roads upon which new construction was performed were the McCarthy-Nizina, Mount McKinley National Park, Gulkana-Chisana, Long-Poorman, Kasilof, Iliamna, Circle Hot Springs, Nome-Council, and Lucky Shot Mine-St. Peters. The bridge renewal program was continued.

The important Richardson Highway was maintained open during the entire season. Improvement to new standard was continued and except for a few short sections this road is now in excellent condition for auto traffic. During the 1931 season tourist travel began in June.

Surfacing of the Steese Highway was continued. As a result of the improvement traffic over this route continued to increase. During the 1931 season travel began over this route in June.

Construction of the road from Gulkana on the Richardson Highway to Chisana through the mineralized belt north of the Wrangell Mountains was continued. This is now the major new project under construction.

Work was started early in 1930, but an unusual amount of precipitation during the summer greatly retarded the progress of the work.

The cost during the year was $907,576.62, of which $343,916.44 was for new work and $563,660.18 was for maintenance and improvement. Total expenditures during the fiscal year were $1,288,273.46.

Condition at end of fiscal year.—The work of maintenance and improvement during the fiscal year provided additional mileage with a light surface. New mileage opened requires additional improvement and surfacing, and increased traffic in certain sections requires heavier surfacing.

The total cost to the end of the fiscal year is $16,893,097.78, of which $8,949,422.76 was for new work and $7,943,675.02 for maintenance and improvement.

Total expenditures to date are $17,273,794.62, of which $15,654,977.23 was from United States funds and $1,618,817.39 from contributed funds.

Proposed operations.—Eight hundred thousand dollars was provided by the act of February 23, 1931. These funds will be expended on maintenance and improvement of the existing system and will provide for some new work. Surfacing will be continued on the Fairbanks-Circle Road and the construction of new mileage will be accomplished on the Gulkana-Chisana, the Fairbanks-Livengood, and the Willow Station-Lucky Shot Mine Roads. Unless much greater annual appropriations are made, little of the much needed new mileage can be constructed and but little can be done to meet the pressing need for extensions and improvements to the system. A reconnaissance will be made to obtain data on the most feasible route for the Alaskan portion of the Pacific Yukon International Highway.

Amount which can be profitably expended during the fiscal year ending June 30, 1933.—An appropriation of $1,241,000 in accordance with the 1929 program, could be profitably expended on the work during the fiscal year 1933. This sum will provide for reasonable maintenance and improvement of the existing system and for construction of much needed mileage on adopted projects and on new projects necessary for the development of the territory.

These funds will be distributed as follows:

District	Maintenance and improvement of existing projects						
	Mileage existing system			(a) Estimated cost	Average per mile		
	Roads	Sled roads	Trails		Roads	Sled roads	Trails
Southeastern	65½		23	$20,000	$300		$15
Bethel		26	985	8,660		$30	8
Eagle	26	177¼	388	14,070	300	20	7
Valdez	105¼			57,900	550		
Chitina	282		507	143,500	500		5
Fairbanks	642	880	1,160	218,540	300	20	7
Southwestern	[1] 214¾	189	509½	[1] 71,770	300	20	7
Kuskokwim	86¾	82½	1,147½	33,510	300	20	5
Nome	282	48	[2] 3,318	88,050	250	20	5
Total	1,704¼	1,402¾	8,038	656,000	340	21	6

[1] Does not include Mount McKinley National Park road, 46½ miles, supported by the National Park Service.

[2] Includes 712 miles temporary trails.

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
Bethel					8,660
Eagle					14,070
Valdez					57,900
Chitina	$200,000			$200,000	343,500
Fairbanks	50,000		$250,000	300,000	518,540
Southwestern	85,000			85,000	156,770
Kuskokwim					33,510
Nome					88,050
Total	335,000		250,000	585,000	1,241,000

Total commerce of Alaska for the calendar year 1930:

Commercial statistics

IMPORTS

Merchandise from the United States	$31,303,291
Merchandise from foreign ports	1,709,636
Silver and gold from foreign ports	32,340
Total imports	33,045,267

EXPORTS

Merchandise to the United States	48,996,962
Merchandise, gold, and silver to foreign ports	347,691
Domestic gold and silver to the United States	7,812,043
Foreign gold and silver to the United States	30,450
Total exports	57,187,146
Grand total, exports and imports	90,232,413

Exports declined $14,875,527, or 21 per cent, from the corresponding figure for 1929. This decrease is due entirely to decreased exports of canned salmon, copper ore, and raw furs.

Imports decreased $1,610,456, or 5 per cent, from the corresponding figure for 1929.

The value of Alaska's mineral output in 1930 was $13,602,000, as compared with $16,066,000 in 1929.

Minerals were produced in the following order of value: Gold, copper, coal, silver, lead marble, platinum, petroleum, and tin.

Production of gold again exceeded in value that of copper. The production of copper decreased both in quantity and in value. While the decrease in quantity is 14 per cent, the decrease in value is 39 per cent, compared with that for 1929. Gold production exceeded that of the previous year $633,000, or 8 per cent. This increase was due to increased production by large dredges from interior placer deposits.

There are still large areas in Alaska not adequately prospected, and many promising properties are 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.

The production of coal showed a slight increase in 1930 compared to that of the preceding year. The output was furnished mainly by the Evans Jones and Alaska-Matanuska mines in the Matanuska region and the Suntrana mine in the Healy River field.

In 1930, as in the past, all the petroleum produced in Alaska was obtained from the Katalla field. The gasoline and distillate produced by the refinery were sold in the local market.

Canned salmon exported in 1930 showed a decrease of over 5 per cent in quantity and a decrease of 22 per cent in value compared to the preceding year.

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.

Since 1921 the board has supervised or directed the construction of various public works for the Territory.

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, $168,488.22.

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, $937.47.

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. Expenditures, $8,265.02.

By authority of the Chief of Engineers the board has undertaken the supervision of the construction work and operations of licensee, including stream gaging, connected with the power development on Eklutna River, Alaska.

At the request of the commanding general, Ninth Corps Area, the board has undertaken the supervision of the construction of a water-supply system for Chilkoot Barracks, Alaska.

The president of the board was designated by the President as a special commissioner for the study of a highway to connect the northwestern part of the United States with British Columbia, Yukon Territory, and Alaska.

Financial summary

Amount expended on all projects:		
From Federal funds (includes receipts from sales, etc., to June 30, 1929) to June 30, 1930	$14,532,308.63	
Net expenditures, 1931	1,122,668.60	
		$15,654,977.23
From contributed funds (includes receipts from sales, etc., to June 30, 1929) to June 30, 1930	1,453,212.53	
Net expenditures, 1931	165,604.86	
		1,618,817.39
		17,273,794.62
Cost of new work	8,949,422.76	
Cost of maintenance and improvement	7,943,675.02	
Value plant, materials, etc., on hand	380,696.84	
Total expended		17,273,794.62
Balance unexpended		789,115.08
Grand total to be accounted for		18,062,909.70

Appropriations to June 30, 1931:	
Construction and maintenance of military and post roads, bridges, and trails, Alaska	11,750,600.00
Wagon roads, bridges, and trails, Alaska fund	3,651,714.36
Construction of wharf at Juneau	22,500.00
Flood control of Lowell Creek	100,000.00
Flood control of Lowell Creek (contributions)	25,000.00
Increase of compensation, War Department	95,059.50
National cemeteries	5,638.72
Roads and trails, national parks	647,876.37
Contributed funds (by Territory of Alaska and others)	1,600,483.51
Adjustments to June 30, 1929 (reimbursements, refunds, sales, etc.)	164,037.24
Total	18,062,909.70

Fiscal year ending June 30	1927	1928	1929	1930	1931
Cost of new work [1]	$706,792.46	$430,923.16	$630,546.95	$515,093.39	$343,916.44
Cost of maintenance and improvement	510,374.43	822,745.02	816,616.96	741,256.26	563,660.18
Total expended (net)	1,217,166.89	1,253,668.18	1,447,163.91	1,256,349.65	[2] 1,288,273.46
Appropriated by War Department acts	1,022,500.00	825,000.00	800,000.00	800,000.00	800,000.00
Alloted from Alaska fund	142,905.28	73,653.64	150,432.68	216,757.86	54,843.66
Contributed by Territory of Alaska and others	93,772.39	210,852.74	213,412.77	188,449.87	167,872.69
Flood control of Lowell Creek		100,000.00			
Flood control of Lowell Creek (contributions)		25,000.00			
National cemeteries	800.00	792.83	1,000.00	1,646.00	797.72
Roads and trails, national parks	16,000.00	60,000.00	65,000.00	220,000.00	156,876.37
Total	1,275,977.67	1,295,299.21	1,229,845.45	1,426,853.73	1,180,390.44

[1] For 1927 the figures shown include certain improvements classed as "New work" which for subsequent years are included under "Maintenance and improvement."
[2] Of this amount, $380,696.84 represents the cost of supplies, materials, and equipment unissued.

July 1, 1930, available balance	$896,998.10
Amount appropriated by War Department, act approved Feb. 23, 1931	800,000.00
Amount accrued to Alaska fund during fiscal year 1931	54,843.66
Amount contributed by Territory of Alaska and others	167,872.69

National cemeteries, 1931	$800.00
Roads and trails, national parks, 1931–32	156,876.37
Total	2,077,390.82
Deduct "National cemeteries, 1930," revoked	2.28
Total resources	2,077,388.54
Net amount expended during fiscal year	1,288,273.46
July 1, 1931, balance unexpended	789,115.08
July 1, 1931, outstanding liabilities	255,819.41
July 1, 1931, balance unobligated	533,295.67
Amounts available on June 30, 1931:	
From War Department, act approved Feb. 23, 1931	710,036.34
From War Department, act approved Mar. 23, 1928, for flood control, Lowell Creek, Alaska	1,118.92
From Alaska fund	12,478.03
From funds contributed	17,237.55
From national cemeteries	6.45
From roads and trails, national parks	[1] 48,237.79
Amount available for fiscal year ending June 30, 1932	789,115.08
Amount (estimated) required to be appropriated for completion of existing projects	3,875,000.00
Amount that can be profitably expended in fiscal year ending June 30, 1933:	
New construction	585,000.00
Maintenance and improvement	656,000.00
Total	[1] 1,241,000.00

Appropriations

1. Construction and maintenance of military and post roads, bridges, and trails, Alaska:		
Total amount appropriated to June 30, 1920, (see detailed statement on p. 2105, Annual Report of the Chief of Engineers, 1920)	$3,370,000.00	
Act of—		
June 30, 1906	[2] 35,000.00	
June 30, 1921	425,000.00	
June 30, 1922	465,000.00	
Mar. 2, 1923	[3] 650,600.00	
June 7, 1924	725,000.00	
Dec. 6, 1924	[4] 55,000.00	
Feb. 12, 1925	900,000.00	
Apr. 15, 1926	900,000.00	
Feb. 23, 1927	[5] 1,022,500.00	
Mar. 23, 1928	825,000.00	
Mar. 23, 1928, flood control, Lowell Creek	100,000.00	
Feb. 28, 1929	800,000.00	
May 28, 1930	800,000.00	
Feb. 23, 1931	800,000.00	
Total		$11,873,100.00

[1] Exclusive of available funds.
[2] For Fairbanks-Council survey.
[3] Includes $600 for survey of Juneau Wharf.
[4] Deficiency to cover increase of compensation, 1925.
[5] Includes $22,500 for Juneau Wharf.

2. Construction and maintenance of wagon roads, bridges, and trails, Alaska fund, act of Congress approved Jan. 27, 1905, as amended by an act approved May 14, 1906:		
Total receipts to June 30, 1920 (see detailed statement on p. 2106, Annual Report of the Chief of Engineers, 1920)	$2,128,569.89	
Fiscal year—		
1920 (supplementary)	153,805.19	
1921	98,437.82	
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	
1929	150,432.68	
1930	216,757.86	
1931	54,843.66	
Total		$3,651,714.36
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	
Total		95,059.50
4. National cemeteries:		
Fiscal year—		
1925	302.17	
1926	300.00	
1927	800.00	
1928	792.83	
1929	1,176.00	
1930	1,467.72	
1931	800.00	
Total		5,638.72
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. 4, 1928	60,000.00	
Mar. 4, 1929	65,000.00	
May 14, 1930	220,000.00	
Feb. 14, 1931	156,876.37	
Total		647,876.37
Total Federal appropriations		16,273,388.95

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	118,746.61	
1922	54,737.28	
1923	112,012.88	
1924	106,325.35	
1925	78,978.45	
1926	133,499.10	
1927	88,015.76	
1928	191,363.59	
1929	189,982.45	
1930	170,480.64	
1931	149,108.37	
Total		$1,503,768.42
2. By others:		
Fiscal year—		
1922	1,683.77	
1923	1,379.54	
1924	4,540.00	
1925	883.12	
1926	2,819.01	
1927	5,756.63	
1928	19,489.15	
1929	23,430.32	
1930	17,969.23	
1931	18,764.32	
Total		96,715.09
3. Funds contributed for the control of Lowell Creek, Alaska		25,000.00
Total contributed funds		1,625,483.51
Grand total, all funds		17,898,872.46

O