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"ANNUAL REPORT of the ALASKA ROAD COMMISSION,  
1956"

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
ALASKA ROAD COMMISSION

ANNUAL REPORT  
FOR THE FISCAL YEAR ENDED JUNE 30, 1956

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I. INTRODUCTION

Embracing an area of 586,000 square miles, the Territory of Alaska extends from the Arctic Ocean to the Pacific; from well above the Arctic Circle, only a few miles from Soviet Russian territory, to within a few hundred miles of the State of Washington. Climate ranges from the comparatively moderate temperatures and heavy snowfalls of the Pacific mountain region to the 70 degrees below zero temperatures and light snowfalls of the Arctic Slope region. The construction and maintenance of roads, bridges and related works within the public domain of this vast area has been the continuous responsibility of the Alaska Road Commission for more than half a century.

The Territory's highway development program was initiated in 1905, when the Alaska Road Commission was created by Act of Congress of January 27 (33 Statute 616) as an agency of the War Department. The Congress appropriated no funds for road construction; but, rather, provided in the Act that "70% or more" of all monies collected for liquor, occupation and trade licenses outside of incorporated towns in the then "District of Alaska," and deposited to a special "Alaska Fund," should be devoted to the construction and maintenance of wagon roads, bridges and trails in Alaska. Such funds, during the first fiscal year, amounted to \$28,000.

The first Annual Report of the Alaska Road Commission might well have been written today. It recognized the difficulties of road construction in permafrost and under arctic conditions, as follows:

"A serious detriment to the making of a road in Alaska is the thawing of the ground beneath the moss. It has been the universal experience that wherever the moss is cut into, thawing immediately commences, and, the trail which was passable becomes a filthy, slimy mass of mud, roots, and broken stone, a difficult route for men on foot, a slow and tiresome road for loaded animals, and an impassable obstacle to any sort of vehicles."

The first Annual Report pointed out the disadvantages of the then \$5,000 limitation on force account projects (work performed by Government forces, rather than by contract). The limitation, now \$20,000, still plagues the Commission.

It chronicled the drowning of a horse "on the road," and recommended a one million dollar appropriation for road and trail construction--a fantastic sum half a century ago--with which to plan and begin construction of a 300-mile road and 1200-mile trail network.

Prior to the creation of the Alaska Road Commission there were fewer than a dozen miles of passable wagon road, constructed by public subscription, in the entire Territory. By 1932, when the Commission was transferred to the Department of the Interior, less than \$21,000,000 had been made available for the development of roads and trails to serve an area of continental size. Of this amount only \$12,000,000 had been appropriated by the Congress, the balance having been contributed by the Territory and others.

Although most of the roads and trails constructed during the War Department's 27-year administration were designed to serve the largely itinerant population engaged in mining and fishing, the Richardson Highway, extending from the all-weather, ice-free port of Valdez to Fairbanks was constructed, first as a trail, later as a wagon road, and finally improved to accommodate the first motor vehicle to make an appearance on the Alaska scene--the Model T Ford.

It is noteworthy, therefore, that in 1932 when the Department of the Interior took over the administration of the Commission, some 2,200 miles of low-standard roads, of which 500 miles were improved gravel surfaced, and 10,000 miles of trails had been constructed.

The Alaska Road Commission was transferred to the Department of the Interior by Act of Congress of June 30, 1932 (47 Statute 446). During the first ten years under the Department of the Interior, appropriations were considerably less than had been available during the last ten years of War Department Administration. In 1941, however, appropriations were sharply increased to accommodate military needs during and immediately following World War II. Plans for developing the disjointed road system into a modern, connected highway network--plans which had been in the Commission's files for almost 35 disappointing, low-budget years--were revised in the light of military necessity, when foreign troops occupied American soil on the Aleutian chain.

In addition to interconnecting Alaska's principal military installations and cities with one another and with the all-weather, ice-free ports of Haines, Valdez, and Seward, the military situation necessitated an overland route safe from enemy naval action to connect Alaska bases with the continental United States. Under the direction of the U. S. Corps of Engineers, ably assisted by the Bureau of Public Roads and a host of private contractors, construction began southward from Whitehorse in April 1942; from Dawson Creek northward in May, and from its junction with the Richardson Highway at Big Delta southward in June. Less than eight months later, in November 1942, weary soldiers, professional construction men, and American and Canadian military and civil authorities witnessed cutting of a ribbon which placed the 1,428.9 mile "Big Trail" in service.

To Alaska the ceremony marked more than the completion of a \$140,000,000 road building project which was to become a legend in highway engineering annals--it marked the turning point in the Territory's long battle for an integrated road system.

However, the military situation eased before the Territory's highway network could be developed, and it was not until 1948, when the world political situation had produced acute unrest in the nation, that Alaska overnight became an important bastion of defense of the continental United States. Increased military preparedness and the resultant construction of major military installations throughout the Territory placed heavy demands on the road system. The interconnection of the principal military bases with paved highways became essential and urgent. From a previous average of less than a million dollars a year, the Congress made available an additional \$4,000,000 for road work during fiscal year 1948. Funds were appropriated for initiating construction of a new highway, eventually to cost \$28,000,000 to connect Anchorage, Alaska's largest city, and the adjacent major military installations, with Seward, Alaska's principal port. In addition, the Congress authorized a six-year road program to cost in excess of \$170,000,000, and appropriated \$24,000,000 for its initiation in fiscal year 1949. The program for connecting, improving and paving the primary system developed suddenly, with little advance notice.

The Commission was a small, efficient organization, geared to a modest program of comparatively low standard road construction. Around the small core of experienced Alaska road builders was built a modern highway organization. Specialists in highway refinements, previously unnecessary and unknown in the Alaska road building picture, were added to the staff. Even so, it was necessary for the Commission to utilize the Bureau of Public Roads Alaska organization to meet survey, design and contract administration deadlines.

The problems of staffing, climate, terrain and construction, while formidable, did not delay inauguration of the accelerated program. Contractors' forces frequently followed the Commission's engineering crews by only a few hundred feet. Today, eight years and \$170,000,000 later, the program nears completion.

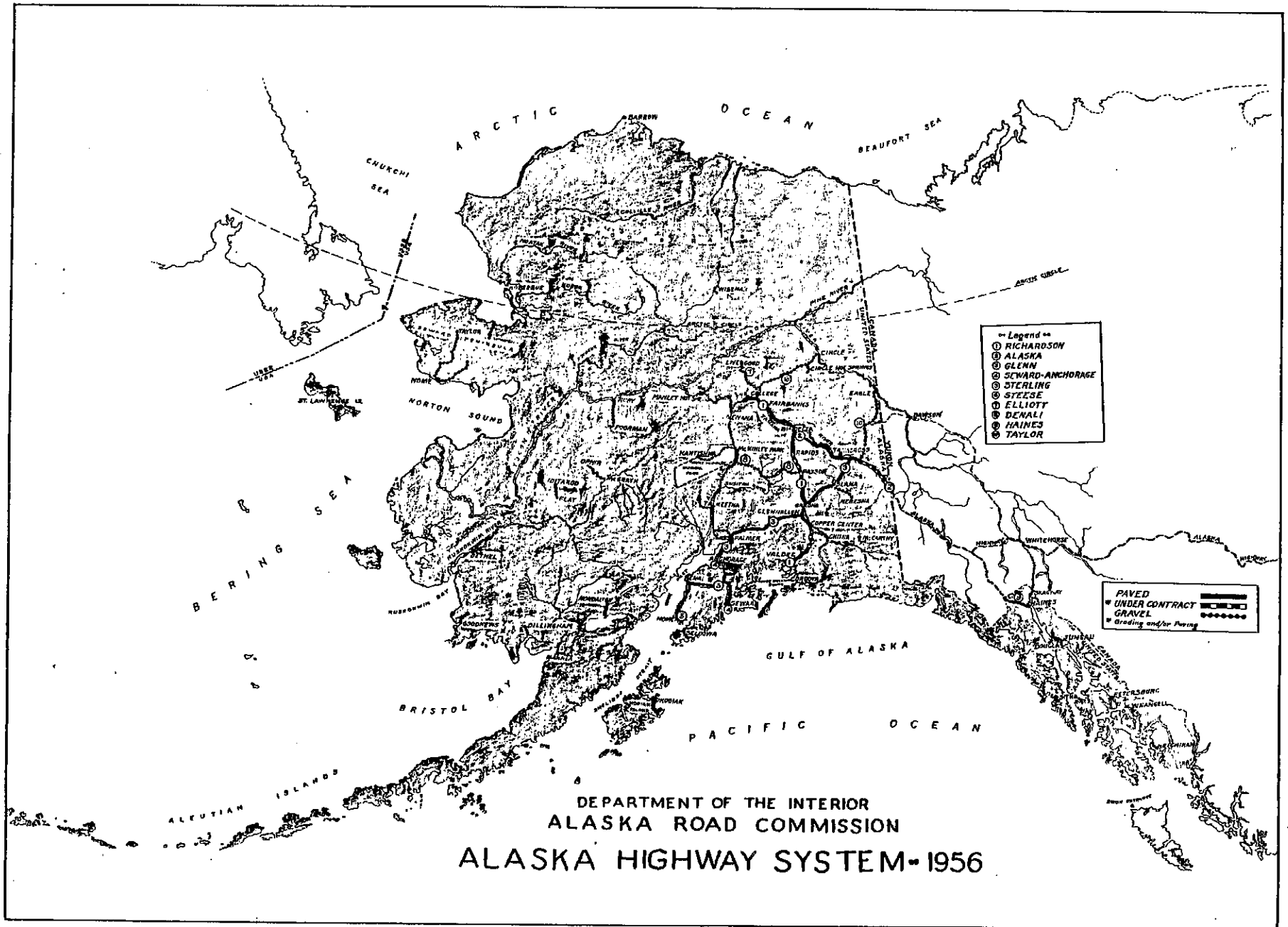
The present highway system consists of a thousand-mile network of all-weather paved routes connecting the ice-free ports of Valdez, Seward, and Haines with interior Alaska's principal cities and military installations, and with the continental United States via the Alaska Highway through Canada; and a secondary system connecting farming, mining, and industrial areas to the primary network. In addition to the connected network, the system includes 570 miles of isolated roads connecting inhabited areas with air, rail, or water transportation facilities.

In an effort to provide minimum transportation facilities for everyone, the Alaska Road Commission had in years past driven pioneer roads into every area of the Territory and had constructed small airfields, seaplane canals, ferries, and narrow gauge tramways. The extent to which this effort has contributed to the development of the Territory is unknown, but it is the conviction of all Alaskans that the development of the Territory's tremendous mineral, timber, and petroleum potential is dependent almost entirely upon adequate overland transportation.

The signing of the Federal-Aid Highway Act of 1956 (Public Law 627 - 84th Congress - Chapter 462 - 2nd Session - H.R. 10660) into law by the President on June 29, 1956, ushered in a new era of road building in Alaska.

Alaska will, in fiscal year 1957, participate for the first time in the Federal-Aid Highway Act to the extent of \$1,932,588, which amount is in addition to the Alaska Road Commission's \$11,425,000 1957 appropriation. The Territory's 1958 allocation is \$13,200,000; 1959, \$13,500,000, all on a 10% matching basis. Thus, at long last, the Territory is assured of reasonably adequate funds over an extended period of years with which to effectively plan and economically prosecute the improvement and extension of Alaska's highway network.

The 1905 plea of the first Board of Road Commissioners for an integrated highway network--a plea repeated bi-annually by every Territorial Legislature since the first convened in 1913--is another step nearer reality.



## II. ORGANIZATION

The Headquarters of the Alaska Road Commission is located at Juneau, capital of the Territory. District offices are maintained at Anchorage, Valdez, Fairbanks, and Nome; a sub-District Office is located at Haines. Permanent depots and active construction and maintenance camps were maintained at 79 locations during the year.

The organization is administered by the Director, Alaska Road Commission, acting under Secretarial delegation of authority dated June 19, 1948, and approved by the President July 20, 1948. District organizations are directed by a District Engineer, responsible to the Headquarters.

### EXECUTIVE OFFICES

#### A. Director

The Director is responsible to the Secretary of the Interior for all phases of the organization's operations, and exercises broad authority in accomplishing the Commission's mission. The Office of Internal Audit reports directly to the Director; all other Headquarters and District organizational units are responsible to the Director through the Chief Engineer.

#### B. Chief Engineer

The Chief Engineer is the Executive Officer of the Alaska Road Commission. The Safety Branch reports directly to the Chief Engineer; all other Headquarters and District organizational units are responsible to the Chief Engineer through Headquarters Division Chiefs or District Engineers.

The Chief Engineer, in his capacity of Contracting Officer, directly administers the Commission's contract construction program.

#### C. Chiefs of Divisions

##### 1. Operations Division

The Chief, Operations Division, is responsible to the Director, through the Chief Engineer, for preparation of the annual Operations Orders, detailing all work to be accomplished during the construction year; for the issuance of Work Orders authorizing the prosecution of each construction and maintenance and force account construction project; and for the maintenance of current program data reflecting funds available by budgetary activity, project, or other Congressional, Departmental, or agency limitation.

The Operations Division is responsible for classifying and numbering all routes, and for obtaining, recording, and evaluating all operational statistics such as traffic density datum,



winter and summer maintenance mileages and costs; establishes and maintains the Commission's territory-wide radio communications network; directs the equipment procurement, assignment, and maintenance programs; and prepares all operational reports, such as the monthly Progress Report and the Commission's Annual Report.

The Chief of the Operations Division serves as Inspection Officer and in this capacity is responsible for effectuating the Department's Inspection Program, established by Executive Order No. 2787. The Office Engineer-Program Officer in the office of the Chief, Operations Division, serves as Agency Compliance Officer to effectuate the National Program for Equal Economic Opportunity, established by Executive Orders 10479 and 10557.

## 2. Design and Construction Division

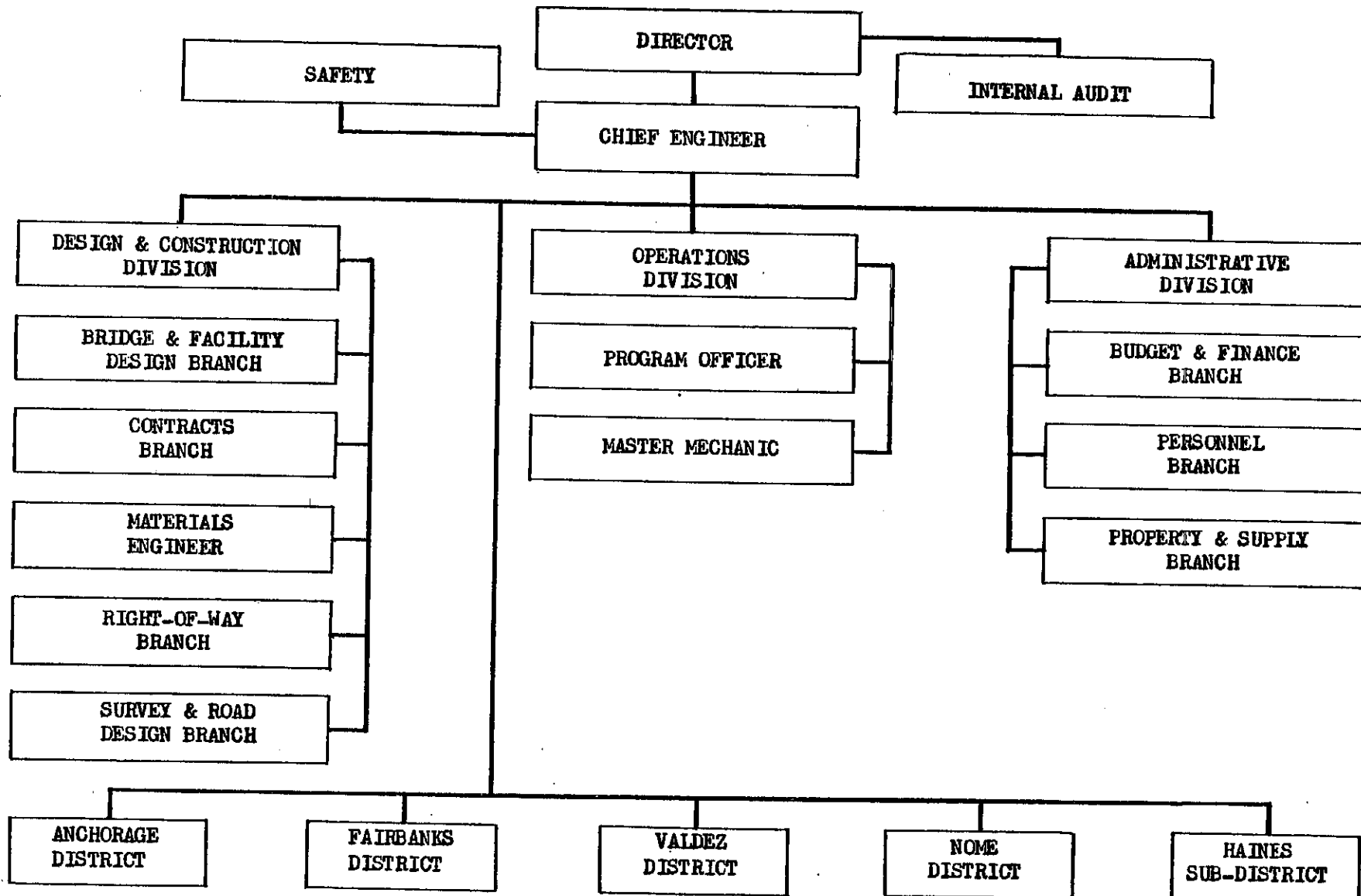
The Chief, Design and Construction Division is responsible to the Director, through the Chief Engineer, for all engineering activity of the Commission. Pioneer surveys, materials investigation and field studies, site surveys, and such other engineering functions as are prosecuted in the field are performed under the direct supervision of the District Engineer, who is responsible to the Division Chief. Final design, the preparation of plans, specifications, and contract documents, and the acquisition of rights-of-way are performed at the Headquarters under the direct supervision of the Division Chief. The Headquarters Organization of the Division consists of the Survey and Road Design Branch, the Bridge Design Branch, the Materials Branch, and the Right-of-Way Branch.

## 3. Administrative Division

The Chief, Administrative Division, is responsible to the Director through the Chief Engineer, for all personnel, property management, accounting, budgetary and related matters. The Division Chief is responsible for the Commission's compliance with applicable legislation, regulations, and policies governing the business management and financial operation of the Commission.

The Headquarters organization consists of a Budget and Finance Officer, and Finance and Accounts, Property and Supply, Personnel, and Office Service Branches.

ORGANIZATION CHART  
ALASKA ROAD COMMISSION



6/30/56

### III. SUMMARY OF FISCAL YEAR ACTIVITIES

#### EXECUTIVE OFFICES

The Director and the Chief Engineer, in addition to directing the affairs of the Alaska Road Commission, are active in many civic and professional organizations. The Commission participates, through its executive officers, in numerous engineering and research projects, and conducts considerable research on arctic construction projects of its own initiative.

#### A. The Director

The Director is a member and chairman of the American Society of Civil Engineers' International Committee on Snow, Ice and Permafrost; is a member and past president of the Engineering Section of the American Association for the Advancement of Science's Alaska Section; is a member and past president of the Alaska Section, American Society of Civil Engineers; is a member and past chairman of the Board of Engineers and Architects Examiners, Territory of Alaska; is a member of the Arctic Institute of North America, the Alaska Advisory Committee Board of Geographic Names and the Road Test Advisory Committee, Western Association of State Highway Officials. The Director is a Commander, U. S. Navy Reserve, Civil Engineer Corps, and is currently President of the Juneau Chamber of Commerce.

#### B. The Chief Engineer

The Chief Engineer, a Colonel, U. S. Army, Corps of Engineers Reserve, serves as liaison officer between the Alaskan military authorities and the Commission. The several federal, civil, and military establishments in the Territory and the Commission perform much work for one another under terms of cross-service and reimbursable agreements. The value of such work performed by the Commission for other agencies aggregates \$1,500,000 annually and results in a substantial saving of public funds.

The Chief Engineer is a member of the Arctic Institute of North America and the Society of American Military Engineers and, by delegation of authority from the Director, is Civil Defense representative for the Department of the Interior for the Territory of Alaska.

#### C. Operations Division - Office of the Chief

The annual Operations Orders, detailing the year's construction and maintenance programs, were prepared and distributed. Work orders, authorizing the prosecution of individual projects within the program, were issued. Program Summaries, detailing the status of funds available by budgetary activity, were regularly issued. The annual revision of A.R.C. Order 40, a tabulation of the highway system showing the name, number, classification, total mileage and winter maintenance mileage of each route, was compiled and distributed. Monthly progress reports

to the Department, detailing the Commission's operations, and periodic reports covering reimbursable projects for the National Park Service, Territorial Highway Engineer, and other federal and Territorial agencies, were submitted. Traffic density and other statistical operational reports were prepared as required.

1. Maintenance Manual

A Maintenance Manual detailing maintenance policies, techniques, and procedures of the Commission was forwarded to the printer after a year of research and preparation. The instructions set forth in the manual are based upon the most modern techniques developed in the continental United States, modified by the Commission's half century of experience in combating permafrost, icing, tundra, and other phenomena of arctic conditions. Application of the manual is expected to result in improved uniform maintenance procedures and a reduction of maintenance costs.

2. Equipment Program

During the fiscal year the following items of major equipment were acquired, either by purchase or by transfer from other federal agencies:

- 10 Tractors
- 74 Trucks - dump, flatbed, tankers
- 2 Suburban Carryalls
- 4 Passenger Automobiles
- 8 Trailers - tanker, low-bed, cargo
- 7 Material Loaders
- 2 Compressors
- 1 Shav-o-matic Disc Scarifier
- 1 Bituminous Distributor - tank mounted
- 4 Asphalt Patch Mixers - truck tailgate type
- 3 Arc Welders
- 9 Diesel Electric Generator Units
- 1 Steam Generator Unit
- 7 Motor Graders
- 3 Snow Plows - truck mounted
- 1 Crane - truck mounted
- 1 Shovel - 3/4 cubic yard
- 1 Dragline - 3/4 cubic yard

The following items of major equipment were surveyed during the year. Where regulations permitted, the proceeds from those items which were sold, were applied on the purchase of replacement equipment.

- 4 Coupe Pickups
- 29 Trucks - pickups, dumps, flat-beds
- 1 Snowplow - truck mounted
- 1 Suburban Carryall
- 2 Trailers

13 Motor Graders  
15 Tractors  
8 Generator Units  
1 Locomotive - gasoline  
4 Welders

The preventative maintenance program has proved highly successful. All items of major equipment are regularly inspected and many minor defects have been remedied before they could develop into costly major failures. In addition to effecting substantial monetary savings, the program has reduced equipment down-time and resultant idle operator time to a minimum. Operational records have permitted the development of a realistic and economical equipment replacement program.

### 3. Avalanche Control

Avalanche control is a comparatively new science in America and, until last year when the Alaska Road Commission initiated research and control procedures, was entirely unknown in Alaska.

Although the U. S. Forest Service is a leading authority in the field, their work has not been concentrated on highway problems. Very few states have had any appreciable experience in this field, and it has therefore been necessary to develop research techniques and control measures. The Alaska Road Commission has been fortunate in obtaining the services of a qualified expert to head up the program.

The development, within the past few years, of the highway network to span a number of mountain systems has created a very real hazard to the highway user. Almost every year at least one person is killed by avalanches and, as traffic increases, more persons are subjected to this hazard.

Terrain analysis, by site investigation and aerial photography, to identify the slide paths and zones of safety; climate analysis, to determine temperatures, maximum snow depth, total precipitation, prevailing wind direction, snow types and storm characteristics; and the plotting and classification of hazards on suitable maps and photographs, have been accomplished. As a result of these comprehensive studies, two principal measures have been utilized:

(a) The closures of sections of highway for short periods of time when avalanches may reasonably be expected; and,

(b) The stabilization of snow by means of explosives and projectiles which trigger controlled avalanches; by protective skiing; and by removing cornices with weighted airplane control cable.

Of the control measures, projectiles fired by 75 mm. recoilless rifles have proved the most effective. Military authorities have cooperated wholeheartedly in making available a variety of artillery pieces, and tanks mounting 76 mm. cannons.

Studies indicate that snow sheds, diversion walls and piers may be effectively employed in protecting a point on the highway susceptible to avalanche hazard. However, such structures are costly to build and maintain, and experiments to date indicate that effective control can be maintained by means of simple earth and stone barriers. A series of mounds strategically placed in a slide path, without directly resisting the tremendous force of an avalanche, checks its momentum, increases friction, and sets up cross currents in the moving snow to cause it to spread over a wide area.

Next year's program will include experiments with the use of wind baffles and certain types of snow fence to prevent formation of cornices and of wind slab.

#### 4. Inspection and Compliance

During the year the Inspection program was fully operative. Since the program simply formalized procedures which have been informally prosecuted for many years, there were no additional procedures installed, and there were no instances requiring investigative or corrective action by the Inspection Officer.

The National Program for Equal Economic Opportunity was likewise fully operative during the year. There was only one instance of discriminatory practices by an A.R.C. contractor and this violation was promptly and thoroughly investigated and satisfactorily resolved.

#### D. Design and Construction Division - Office of the Chief

The recruitment and assignment of engineering personnel to Headquarters, District, and project operating units is a principal function of the Division Chief. In the face of an acute national shortage of highway engineers, recruitment for Alaska has been a major problem, especially in the higher classifications covering experienced construction personnel. The seasonal nature of the construction program makes it exceedingly difficult to efficiently utilize engineering personnel on an annual basis. During the summer months, a large number of engineers are required to prosecute the program; during the winter a lesser number can be utilized in the Headquarters and District offices to work up road, bridge, and facility design, and to prepare plans, specifications, and contract special provisions. The winter design program adequately accommodates all key engineering personnel, but does not extend to lower grade engineers.

The Commission's Student Engineer-In-Training Program, now in its second year, is expected to develop an adequate force of experienced

seasonal engineering personnel.

1. Engineering Manual

It is the policy of the Alaska Road Commission to accomplish all phases of its engineering work with Government forces. This includes pioneer surveys and reconnaissance; site surveys; materials investigations; preparation of building, bridge, and road design; acquisition of rights-of-way; preparation and execution of contract documents, and the administration of construction contracts.

In past years numerous ARC Orders, Memoranda and manuals covering various phases of engineering activities have been issued to standardize particular functions. During the past fiscal year all such material, with the exception of contract administration, was revised and consolidated into a single Engineering Manual.

2. Contract Administration Manual

The Manual of Instructions for Administration of Alaska Road Commission Contracts was revised and expanded during the year. This manual briefly outlines the legal and construction requirements of Government contracts, details inspection and reporting procedures, and generally covers all matters outside the scope of the specifications. The uniform application of Contract Administration procedures has resulted in improved and more economical contract administration.

3. Survey and Road Design Branch

(a) Pioneer Surveys

Preliminary reconnaissance and pioneer survey of routes tentatively scheduled for future construction is an important phase of the Commission's planning for the orderly expansion of the highway system. Engineering data developed by the Geologic Engineer Branch of the U. S. Geological Survey, the U. S. Bureau of Land Management, and others engaged in survey or land development activities in the Territory are utilized in determining the most feasible route for each pioneer location. As detailed elsewhere in this report, terrain, the extent of permafrost, the nature of sub-surface materials, drainage, alignment grade, exposure and future maintenance considerations all enter into the final location of a pioneer road.

During the year pioneer surveys of several important future additions to the highway system were prosecuted:

- (1) A route from Seldovia to Jackalof Bay to provide access to Seldovia's port facilities for the producing chrome mines in the area.

(2) An extension of the principal artery through the Matanuska Valley to provide a low-level route which may be maintained open the year around to the mining and recreational developments in the vicinity of Willow.

(3) A route from Cordova to connect the potentially productive oil fields of the Bering River area and the port facilities of Cordova, one of the few protected ports on the Gulf of Alaska.

(4) A route from Fairbanks to the Territory's most productive coal area, the Healy River coal field, to provide an alternate overland shipping route and to open up potentially productive agricultural acreage in the vicinity of Nenana. This route will eventually be extended to provide an alternate low-level route to Mt. McKinley National Park.

(5) A route from Livengood to Manley Hot Springs. This survey is being performed as a part of the plan to extend U. S. Highway 97 to Nome on the Seward Peninsula.

(6) A route to connect Skagway with the Alaska Highway. Preliminary construction on this route is being financed by the Territory of Alaska as an initial step in providing highway connections for Southeast Alaska's principal cities.

(7) Denali Highway - Headquarters engineering crews completed a 37.5 mile survey of the MacLaren River to Susitna River section of the Denali Highway during the year. This is the final section of the 160-mile route to connect Mt. McKinley National Park with the primary highway network. The survey was in every respect pioneer. Aerial and foot reconnaissance, aerial photographs, U.S. G.S. maps, and materials investigations were utilized in establishing a final line.

(8) Copper River Highway - Valdez District engineering personnel completed a survey of a 30-mile section of the Copper River Highway northward beyond Mile 39, the northerly end of Section "C" which is presently under contract construction. The survey, over difficult terrain, generally following the abandoned Copper River and Northwestern Railway, was hampered by the fact that many of the original railroad bridges had been destroyed, and air and water transport was frequently impractical. It was therefore necessary for survey crews to pack in much of their equipment and supplies.

(b) Cadastral Surveys

In recent years, as land area adjacent to the highway



system has been developed by private owners, the precise location of the primary road system in relation to the public survey grid has become increasingly important. During the past three years cadastral surveys have been concentrated on the primary system in the densely populated areas adjacent to principal cities. During the past year the program was extended to cover many of the principal feeder and local roads in the heavily populated areas. Work to be accomplished in this field is limited only by the availability of funds with which to prosecute it. Plats of surveyed areas are utilized by the Bureau of Land Management, with whom the Commission cooperates in programming cadastral surveys.

(c) Design

Design work is accomplished almost entirely during the winter months in order that as many as possible of the field engineers may be gainfully employed on a year-round basis. Limited space at the Juneau Headquarters has necessitated assigning many engineers to District Offices during the winters, where preliminary design is prepared, then forwarded to the Headquarters for review and final design. Although adopted as a necessity, the procedure has definite advantage in that should additional data be required, District personnel, familiar with the project or the site itself, are readily available.

During the year, plans and specifications for contract grading and paving projects, involving approximately 210 miles of roadway with an estimated contract value of  $5\frac{1}{2}$  million dollars, were completed.

4. Bridge and Building Design Branch

(a) Training Program - The training program begun last year to assure uniform bridge design and construction inspection was continued throughout the year. A pronounced improvement in design and ARC-contractor relationships has been apparent.

(b) Bridge Design - During the year 17 bridges and 5 major drainage structures were designed. In addition, preliminary design of 7 bridges was completed. Garage and warm storage facilities were designed for permanent maintenance installations at Valdez and Naknek.

(c) Contract Administration - During the fiscal year, 48 projects valued at \$23,577,413 were under contract, 27 of which, valued at \$17,160,493, were carry-over projects from prior years, and 21, valued at \$6,416,920, were awarded during the year. At the close of the year there were 23 active contracts, valued at \$13,521,624.

(d) Materials Engineering - Materials laboratories, equipped and staffed to conduct almost all highway construction materials tests, are maintained at Anchorage, Glennallen, Valdez, and Fairbanks.

Pre-construction materials surveys have been made at all major road and bridge projects scheduled for contract construction. As a result, material quantity, quality, and location data in contract specifications have been sufficiently accurate and complete to permit improved design and to eliminate much of the contractors' risk in bidding.

The Materials Branch instructs field engineers assigned to contract inspection duties on all phases of materials tests, and generally supervises the testing of materials used by contractors for compliance with contract specifications.

#### 5. Thermal Studies

In an effort to learn more about permafrost and related arctic sub-surface materials, the Alaska Road Commission, in 1954, began a study of road and structural foundations in permafrost. In cooperation with the Geophysics and Military Geology Branches of the U. S. Geological Survey, the program was continued throughout the past fiscal year. Thermistor cables--a device embedded many feet below the surface, which gives temperature readings at the surface of any or all depths--together with geologic field work and laboratory analysis of sub-surface materials, have contributed much to a more thorough understanding of permafrost's reaction to various stimuli.

Studies to date have simply confirmed the Commission's location criteria, based upon experience, that basic construction principals must follow one of three concepts:

(a) To design and construct buildings, bridges and roads so heavily that they will remain stable despite any shifting of the foundation and will withstand any differential settlement or strain which might be imposed by the unequal thawing of permafrost. This method is extremely costly.

(b) To completely eliminate all permafrost from the construction area before construction is begun on the premise that, once eliminated, it will not return. This method is limited to small areas, such as for buildings, and to areas in which permafrost is relatively thin, temperatures are above  $-1.0^{\circ}\text{C}$ , little or no ice masses are in evidence, and foundation materials are relatively coarse.

(c) To utilize the permafrost as a part of the foundation, provided adequate drainage may be obtained, which has been the policy of the Commission for many years.

The present studies are scheduled for completion next year and, while the results may not immediately improve design, construction, and maintenance procedures, they will provide exact scientific techniques for evaluating tentative locations.

#### 6. Real Estate Branch

During the fiscal year ending June 30, 1956, the Real Estate Branch made consistent progress in the preparation of block books, indexes, and related maps and plats covering rights-of-way on the Through and Feeder Road system. The planning of projects is completed, and the continuing job at hand is to key all instruments, plats, Public Laws, Land Orders, easements, and related data to Alaska Road Commission Order No. 40, Revised, titled Highway System Routes and Mileages.

At the present rate of progress, it will be another full year before the Through and Feeder Road systems are properly documented. The planned activity for fiscal year 1957 is to accelerate the program by use of field personnel who are presently being assigned to the Branch's activities.

#### E. Administrative Division - Office of the Chief

The usual budget estimates and justifications were compiled and submitted to the Department. There were accomplished additional studies and reports in relation to current appropriations and to budget estimates for succeeding years.

Further improvement was effected in procedures for preparation of control schedules reflecting each budgetary activity of our appropriations.

Continuing management activities as related to personnel, accounting, and supply and property (including office services) were directed and coordinated.

#### 1. Personnel Branch

Effective August 1, 1955, federal positions in the Territory were returned to the competitive civil service; consequently, conversion of employees to the competitive service was a continuing project during the year. It was possible to reinstate 25 employees; One hundred and eleven classified employees and 251 wage board employees were converted to competitive status.

With the arrival of the new Personnel Officer in late August, an intensive program of classification was undertaken. Primary emphasis was placed on positions in the Administrative divisions of both the Headquarters office and the various District offices. Functional organization charts were prepared for each District and for all of the divisions of the Headquarters office.

As the anticipated need for engineering personnel was approximately double the number required for the 1955 construction season, an intensive recruitment campaign was conducted, especially among Alaskan high school graduates eligible for Student Engineer-Trainee positions. An adequate number of trainees was recruited; however, the demand for qualified engineers has not been met, although gains outweighed the losses.

## 2. Finance and Accounts Branch

The Finance and Accounts Branch was reorganized, with revised position descriptions prepared for all employees. There was a large turnover in personnel, including the Finance Officer and heads of all Sections and Units.

The first major changes in the Accounting Manual were prepared and forwarded to the Director, Office of Territories, for review and approval.

Allotment accounting procedures are being studied to devise methods which will provide positive fund controls.

Decentralization of certain functions, including pay-rolling and cost accounting, to the District offices is under consideration.

## 3. Supply and Property Branch

All purchase requisitions are processed through the Supply and Property Branch. Purchases exceeded \$1,000,000 during the year. In addition, excess property valued at \$318,000 was obtained from other Federal agencies, of which \$250,000 worth was without exchange of funds.

Property surveys, service and supply contracts, forms control, records disposal, and all mail and filing activities are handled by the Supply and Property Branch. A sound records management program has been initiated.

## 4. Incentive Award Program

Under terms of Title III of Public Law 763, 83rd Congress, approved September 1, 1954, twenty-six suggestions were processed during the fiscal year. Of these, 14 were approved and were given cash awards. The estimated net first-year savings of the approved suggestions amounted to \$6,600.00.

Two Superior Performance Awards were also made during the year.

F. Other

1. Internal Audit Program

Major audits undertaken and completed during the fiscal year are briefly described below:

(a) Stores inventory and mess operations accounts were reviewed.

(b) A comprehensive review of ARC Orders, ARC Memoranda and ARC Office Orders, all internal control or informational devices, was made.

(c) A comprehensive audit of equipment expense and operating procedures to determine the propriety of charges to equipment expense accounts, and of equipment rental charges to work orders and clearing accounts, was made.

(d) Numerous minor audits of Headquarters and field procedures for compliance with applicable regulations and established policy were conducted throughout the year.

Scheduled activities for fiscal year 1957 include a comprehensive audit to determine the practicability of transferring cost accounting and payrolling of classified personnel assigned to field stations from the Headquarters to District Offices. Reviews will also be made to determine compliance with recently revised accounting and field manuals.

2. Safety Branch

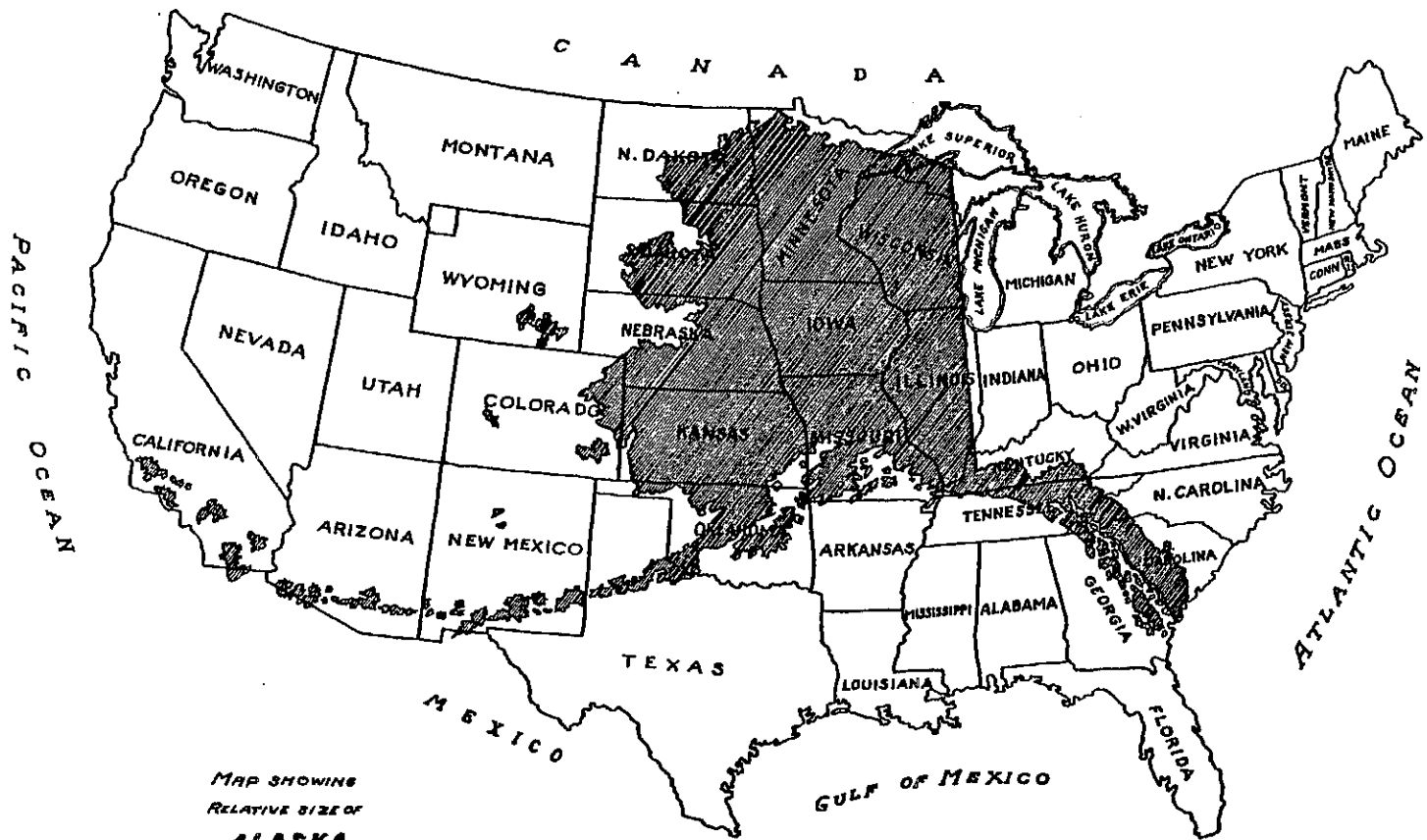
Each year the Alaska Road Commission's frequency and severity rates have been progressively reduced, until last year the Commission's safety record was the best in the Department, and superior to that of comparable private industry. This record is a tribute to the work of a dedicated Safety Engineer.

This past year's frequency and severity rates were substantially greater than last year's, due largely to a traffic fatality. Ironically, the victim was the Safety Engineer.

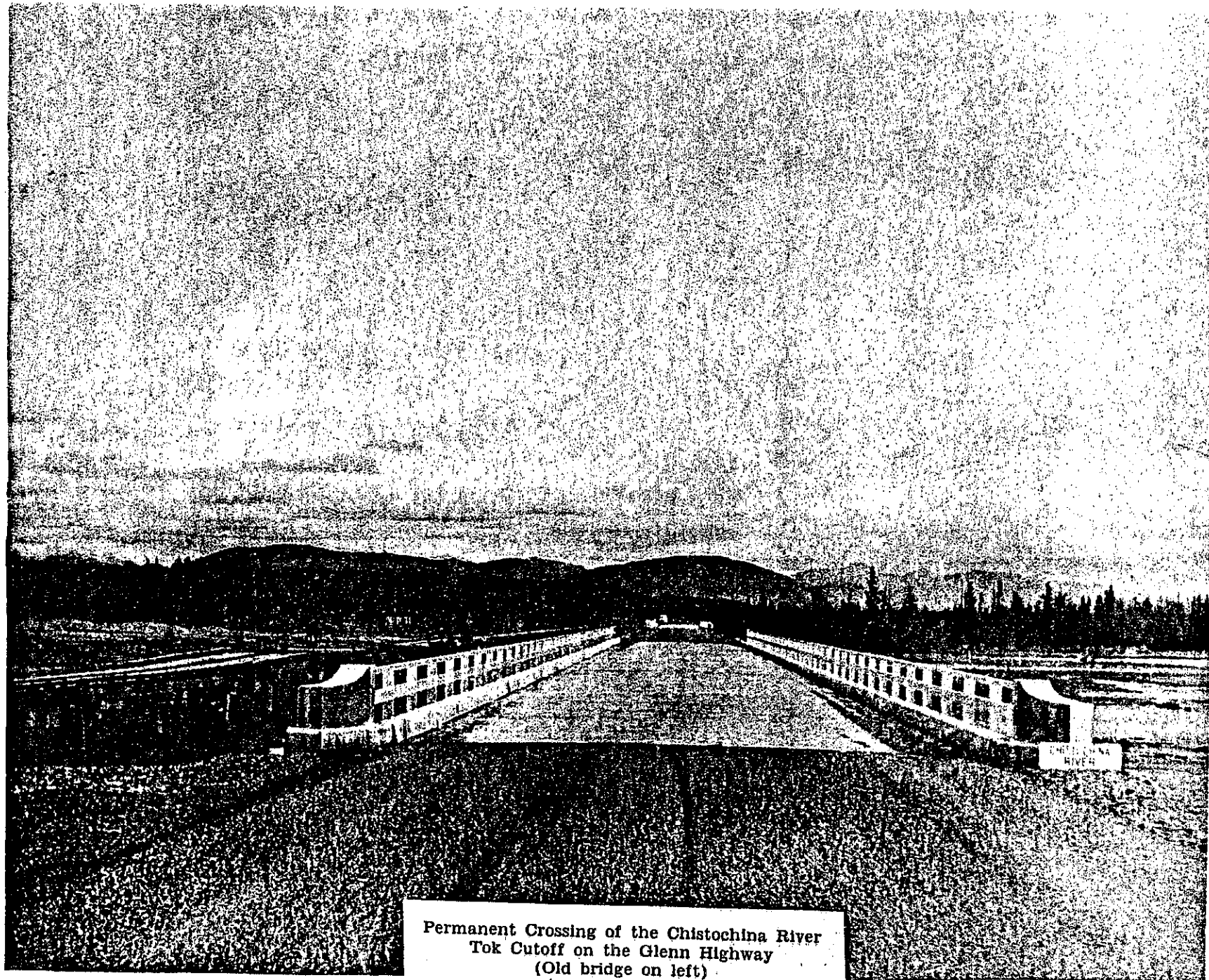
The original program is being vigorously prosecuted by the incumbent Safety Engineer, and the Commission fully expects to report an enviable safety record again next year.

A comparison of this and last year's accident and fire loss data are shown below:

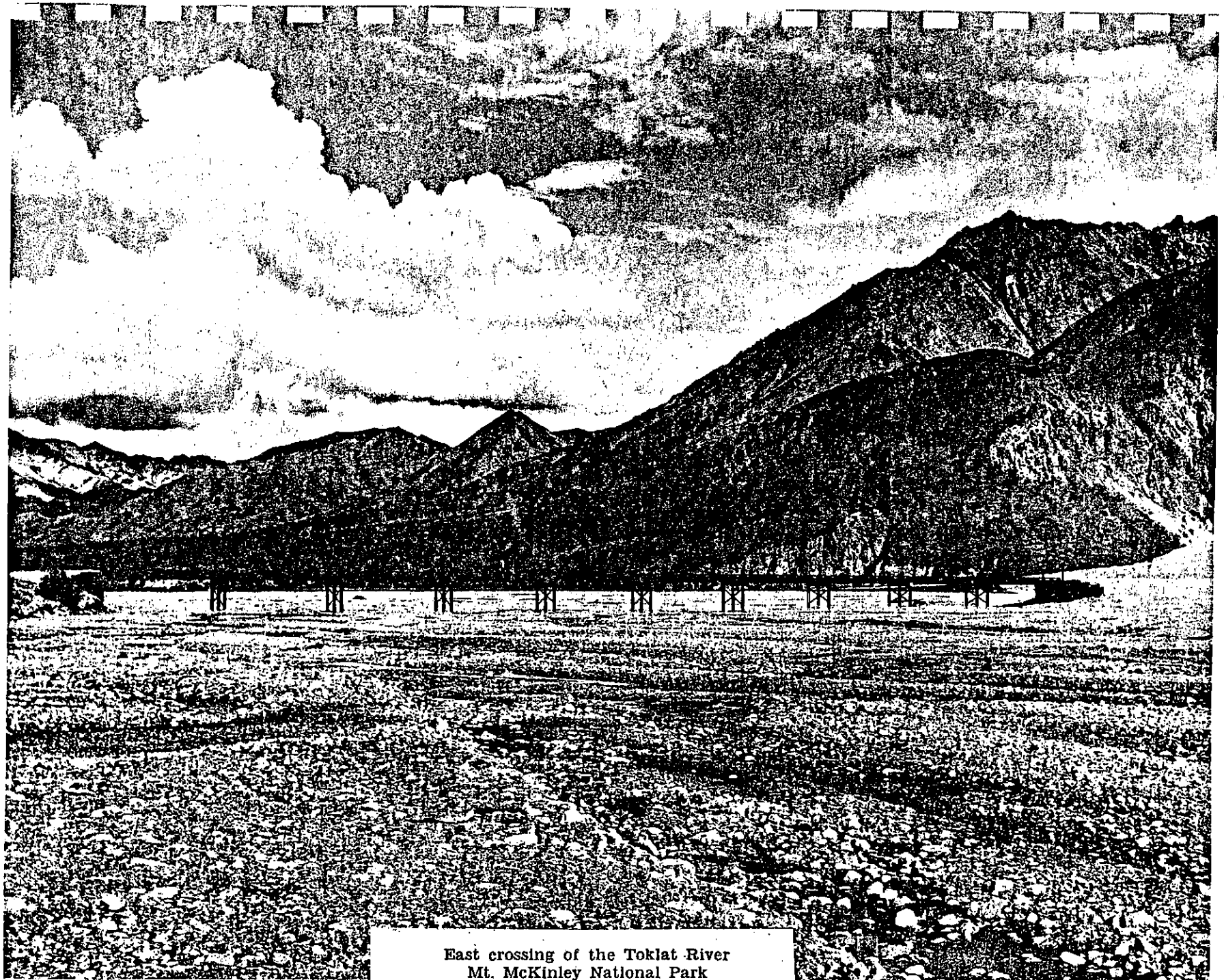
	<u>1955</u>	<u>1956</u>
Number of Disabling Accidents	41	42
Lost Time - Days	556	7755 *
Frequency Rate	24.08	25.59



MAP SHOWING  
 RELATIVE SIZE OF  
**ALASKA**  
 and the  
**UNITED STATES**

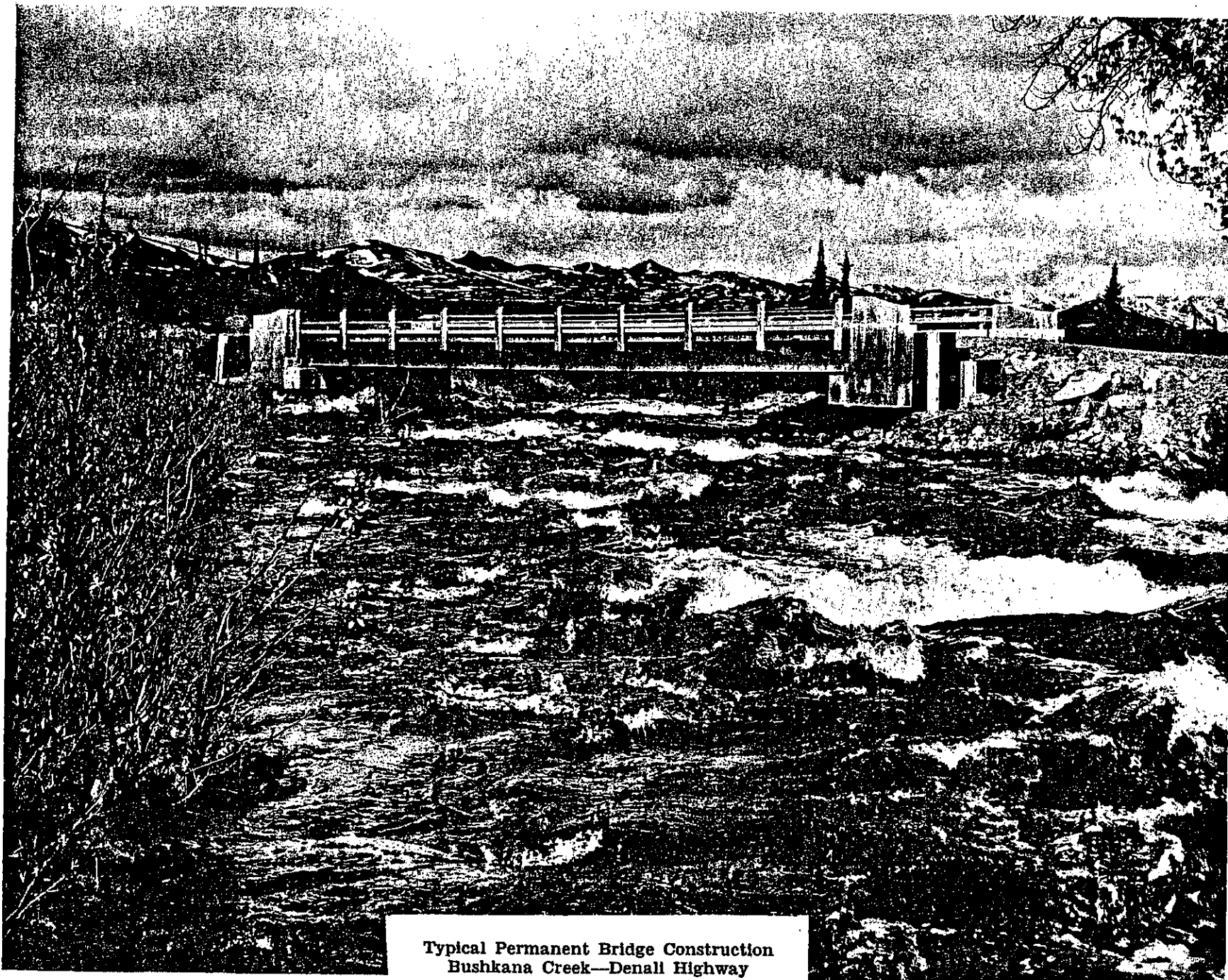


Permanent Crossing of the Chistochina River  
Tok Cutoff on the Glenn Highway  
(Old bridge on left)



East crossing of the Toklat River  
Mt. McKinley National Park





Typical Permanent Bridge Construction  
Bushkana Creek—Denali Highway

	<u>1955</u>	<u>1956</u>
Severity Rate	0.33	4.73*
Fire loss to Government Property	\$2268.28	\$69.00

\* 6,000 days charged to fatality - 650 days charged to permanent partial disability (severance of fingers).

## G. Construction

### 1. Preparation of Plans

Each year, the Alaska Road Commission is appropriated funds for the specific purpose of conducting preliminary reconnaissance and pioneer surveys of proposed projects not yet authorized for construction. This activity is essential in determining the economic feasibility of proposed projects and permits the timely preparation of budget estimates and justifications, and an orderly scheduling of such projects once funds have been provided by the Congress for construction.

Funds appropriated for this purpose for fiscal year 1956 totaled \$300,000. Twenty-six projects were active in this category during the year, the major ones of which are detailed elsewhere in this chapter under "Pioneer Surveys."

### 2. Construction in Progress - By Contract

It is the policy of the Alaska Road Commission to perform all reconstruction work preliminary to paving, all paving, and the construction of major buildings and bridges by the contract method.

The tremendous volume of military and civil construction activity in the Territory in the past several years has encouraged a number of the nation's largest contractors to establish organizations in Alaska. These, together with a group of Alaska firms, have generally assured competitive bidding on large bridge and highway projects. Small projects, and those located in remote areas of the Territory, frequently are bid by only a single contractor, and such bids are generally excessive. In such instances, it is necessary to resort to force account construction in order to perform the work within available funds.

The following contract construction projects were active during the year:

#### Richardson Highway:

Section "D", Miles 186 to 227, \$3,335,000 - This contract for grading, drainage, and the construction of several bridges on the Paxson to Rapids section of the route was completed during the year.

Section G-1, Miles 36 to 82, \$1,150,000 - The contract for paving this section was executed on April 7, 1955. At the close of the fiscal year the project was 61% complete.

Section E-1, Miles 128 to 186, \$1,515,000 - Contract for final grading and paving of the section was awarded on June 7, 1955. At the close of the year the contract was 38% complete.

Section D-1, Miles 186 to 227, \$1,163,610 - A Contract for reshaping and paving this section was awarded on May 25, 1956. No work had been performed at the close of the year.

Banner Creek Bridge, Mile 297.4, \$97,205 - A permanent concrete and steel bridge to replace an old timber structure at this crossing was completed early in the year. Three Alaska Highway bridges were constructed under this same contract.

Gulkana and Tazlina Bridge Re-Decking, \$64,225.00 - A contract for re-decking these two structures was awarded on July 19, 1955, and completed during the fiscal year. The Tazlina is located at Mile 110.4, the Gulkana at Mile 127.0, on the Richardson Highway.

Klutina and Tonsina River Bridges, \$370,000 - A contract was awarded on June 12, 1956, for construction of the Klutina and Tonsina River Bridges, Miles 101.0 and 79.1, respectively, on the Richardson Highway. No work had been performed at the close of the year.

Tazlina and Gulkana Bridge Improvements, \$55,000 - A contract for constructing new approach spans and abutments, and improving piers for the Tazlina River Bridge, and rehabilitating abutments and constructing timber abutment protection walls for the Gulkana River Bridge, Miles 110.4 and 127.0, Richardson Highway, was awarded on April 6, 1956. No work had been performed at the close of the year.

Alaska Highway:

Section C-2, Miles 1221 to 1265, \$2,213,000 - A contract for reconstruction, grading, and drainage of the Canadian Boundary to Northway Section of this route was advanced from 9% to 47% complete during the year.

Section C-2 Bridges, \$209,800 - The contract for construction of the Scottie, Desper, and Gardner

Creek Bridges, Miles 1223.5, 1224.5, and 1247.8, respectively, on the Alaska Highway was completed during the year.

Alaska Highway Bridges, \$319,000 - A contract for construction of the Beaver Creek Bridge, Mile 1268.0, the Berry Creek Bridge, Mile 1371.4, and the Little Gerstle Bridge, Mile 1388.4, was 47% complete at the close of the fiscal year.

Glenn Highway:

Section C1-D1; Miles 0 to 64, \$1,689,000 - The contract for paving this section of the Tok Cut-Off section of the Glenn Highway was advanced from 60% to 100% complete during the year.

Chickaloon River Bridge Dike, \$7,000 - The contract for placement of approximately 480 cubic yards of loose riprap protection for the south abutment fill of this structure at Mile 78.2 on the Glenn Highway was completed during the year.

Glenn Highway Bridges, \$361,500 - The Contract for construction of the Chickaloon River Bridge, Mile 78.2, the Hicks Creek Bridge, Mile 96.7, the Cache Creek Bridge, Mile 147.2, and the Mendeltna River Bridge, Mile 152.7, was completed during the year.

Chistochina River Bridge, \$471,000 - This structure was advanced from 92% to 100% complete during the fiscal year.

Moose Creek Bridge, Mile 186.2, \$40,000 - A contract for construction of this bridge was awarded June 12, 1956. At the close of the fiscal year no work had been performed.

Sterling Highway:

Section B1-E, Miles 86.4 to 97.4, and Soldotna Junction to 2.7 Miles North of Kenai, \$1,250,000 -

This contract for final grading and paving of approximately 25 miles of this route in the vicinity of Kenai was 52% complete at the close of the period.

Denali Highway:

Section B, MacLaren to Susitna Rivers, \$1,860,000 - A contract for construction of the center 37.52 mile section of this route was awarded on May 18, 1956. At the close of the fiscal year the project was 1%

complete.

Denali Highway Bridges, \$156,000 - The contract for construction of the MacLaren River Bridge, Mile 41.9 west of Paxson, and the Rock Creek Bridge, Mile 24.8 west of Paxson, was 99% complete at the close of the year.

Denali Highway Bridges, \$524,000 - The contract for construction of the Canyon Creek Bridge, Mile 41.5 east of Cantwell, and the Susitna River Bridge, Mile 58 east of Cantwell, was advanced to 99% of completion during the year.

Copper River Highway:

Section "C", \$3,067,000 - This contract for construction of 14.3 miles of single lane highway and the construction or rehabilitation of more than 1½ miles of bridges, was 41% complete at the close of the period.

Mt. McKinley National Park Projects - Administered by Alaska Road Commission

Teklanika River Bridge, \$202,000 - This contract, for construction of a 300' x 24' multiple span I-beam bridge, was completed during the year.

Three Park Bridges, \$365,000 - A contract for construction of the Sanctuary River, Upper Igloo Creek, and Toklat River (west) Bridges, Miles 21.8, 36.5, and 53.3 on the McKinley Park Highway, was awarded on September 19, 1955. At the close of the fiscal year, the Sanctuary was 22% complete, the Upper Igloo 8%, and the Toklat 100% complete.

Miscellaneous Road Projects:

Palmer Wasilla Surface Treatment, \$35,000 - The contract for surface treatment of 7.23 miles of this important Matanuska Valley route was completed during the period.

Glennallen Repeater Station, \$22,800 - A contract was awarded on May 14, 1956, for base course and paving a portion of the Alaska Communications System's (U.S. Army) Glennallen installation. This contract was awarded for the Army on a reimbursable basis. No work had been performed at the close of the year.

Anchorage Area Paving, \$140,000 - A contract for grading and bituminous surfacing approximately four miles

of heavily traveled feeder roads in the vicinity of Anchorage was awarded on July 29, 1955, and was completed during the year.

University of Alaska Site Improvements, \$65,500 - A separate bid schedule for reconstruction and paving the University of Alaska entrance road was included in an Alaska Public Works contract awarded February 1, 1956. At the close of the fiscal year the project was 45% complete.

Government Hill Road, \$77,500 - A contract was awarded August 19, 1955, for grading and paving a 1.21 mile section of this route through the Alaska Railroad railroad yards. This contract was administered for the Alaska Railroad on a reimbursable basis and was completed during the year.

Structures:

Soldotna Garage, \$190,000 - The contract for construction of a 100' x 89' timber-framed, metal sheathed garage to serve as a permanent maintenance facility on the Kenai Peninsula was completed during the year.

Soldotna Residence, \$50,000 - The contract for construction of a 32' x 38' wood frame residential structure at the Soldotna Depot was completed during the year.

Anchorage Service Shop, \$72,300 - The Anchorage Service Shop contract was advanced from 27% to 100% of completion during the fiscal year.

Palmer General Service Building, \$125,000 - The contract for construction of an 80' x 80' wood and steel frame building to serve as headquarters for maintenance of the Matanuska Valley System was completed during the year.

Big Delta Depot, \$140,000 - The 56' x 84' garage and 40' x 34' two-story duplex residence placed under contract on June 16, 1955, was completed during the year. This installation, at the junction of the Alaska and Richardson Highways is a standard permanent maintenance facility.

Slana Depot, \$165,000 - The contract for construction of facilities identical to those described above (Big Delta) was completed during the fiscal year. This facility will serve as maintenance headquarters for the Tok Cut-Off portion of the Glenn Highway and the Nabesna Road.

### 3. Construction in Progress - By Force Account

Pioneer road construction has in the past been accomplished entirely by Government forces, by "stage" construction methods developed by the Commission. This method requires a minimum of engineering, eliminates the preparation of detailed plans and specifications and the exact measurement of quantities of work performed. The engineering savings on force account projects is estimated at 15% of the total project cost.

A \$20,000 per project limitation imposed by law, and a 17½% of construction appropriation limitation contained in recent appropriation acts, has sharply curtailed the amount of work that may be performed by force account. This year, for the first time, a contract was awarded for the construction of a pioneer road-- Section B of the Denali Highway.

The following major force account projects were active during the year:

Taylor Highway - This 161-mile route from the Alaska Highway to Eagle, on the Yukon River, and Dawson, Yukon Territory, has been under stage construction for the past several years. Final improvement to Feeder Road Standards is scheduled for completion early in fiscal year 1957. Total cost of the route is estimated to be \$6,480,000.

Denali Highway - This 102-mile route to connect Mt. McKinley National Park--the nation's second largest--with the primary highway system, has also been under stage construction since 1949. Sections A, C, and D, totaling 125 miles, were constructed and are being improved to Feeder Road standards by force account. This phase of the work is scheduled for completion early next fiscal year, at an estimated total cost of \$7,600,000. The 37-mile Section B, presently under contract, is scheduled for completion in 1948, and is expected to cost \$2,000,000.

Reconstruction - During the year 46 road and bridge improvements were prosecuted, costing approximately \$800,000. In addition to the major projects which were accomplished by contract, and are included in the preceding "Construction in Progress -- by Contract" section, many small improvements in the Anchorage, Fairbanks, Matanuska Valley, and Kenai Peninsula areas were accomplished by force account.

Territorial Program - Increased Territorial revenues, derived from a 2¢ gasoline tax increase imposed by the last Territorial Legislature, have resulted in substantially more money being made available for road construction.

During the year 16 projects costing approximately \$500,000 were completed by the Commission for the

Territory. In addition, the Commission expended the balance of its farm road funds, totaling approximately \$150,000, on this program.

#### H. Maintenance

The highway system under the jurisdiction of the Alaska Road Commission consists of 3,594.4 miles of roads and 445 miles of trails. Fifty-four percent of the roads and 49% of the trails are maintained open the year around, and winter maintenance mileage is steadily increasing, as is shown in the following tabulation.

	<u>Summer Maintenance</u>				
	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>
Through Roads (Miles)	978.1	975.9	989.1	972.3	998.5
Feeder Roads "	1,156.5	1,197.2	1,213.9	1,244.7	1,234.6
Local Roads "	<u>1,287.3</u>	<u>1,288.2</u>	<u>1,279.4</u>	<u>1,326.5</u>	<u>1,361.3</u>
Total (Miles)	3,421.9	3,461.3	3,482.4	3,543.5	3,594.4
	<u>All-Weather Maintenance</u>				
Through Roads (Miles)	858.7	975.9	898.1	972.3	998.5
Feeder Roads "	298.8	305.4	306.3	299.1	318.7
Local Roads "	<u>553.5</u>	<u>569.0</u>	<u>564.4</u>	<u>601.1</u>	<u>621.9</u>
Total (Miles)	1,711.0	1,850.3	1,859.8	1,872.5	1,939.1

Summer maintenance procedures are much the same as those used in more temperate zones. In addition to the usual summer brush cutting, chemical weed control, culvert cleaning, surface grading, crack sealing, patching, sign, centerline, and roadside maintenance activities, it is necessary to make all possible preparation for winter maintenance. Such measures including placing culvert and snow stakes, the erection of snow and ice fences, the flattening of superelevated curves and roadway crown on gravel surfaced roads to minimize sliding and the stockpiling of materials at strategic locations for winter surface sanding.

All roads underlain by permafrost are subject to deformation. Except that more extensive grading, crack sealing, patching and leveling applications are necessary to maintain uniform vertical alignment than would be required on similar roads in permafrost-free areas, the maintenance procedures are identical to those in use in the United States.

Winter maintenance, however, presents numerous problems peculiar to Alaska. Methods have been developed to control icing formations that endanger highways and highway structures and constitute a serious hazard to highway users. Even snow removal in pass areas, subject to maximums of 80-foot annual snowfalls and 100 miles per hour winds, has necessitated the development of special equipment and techniques. Special winterizing of equipment to assure reliable, safe

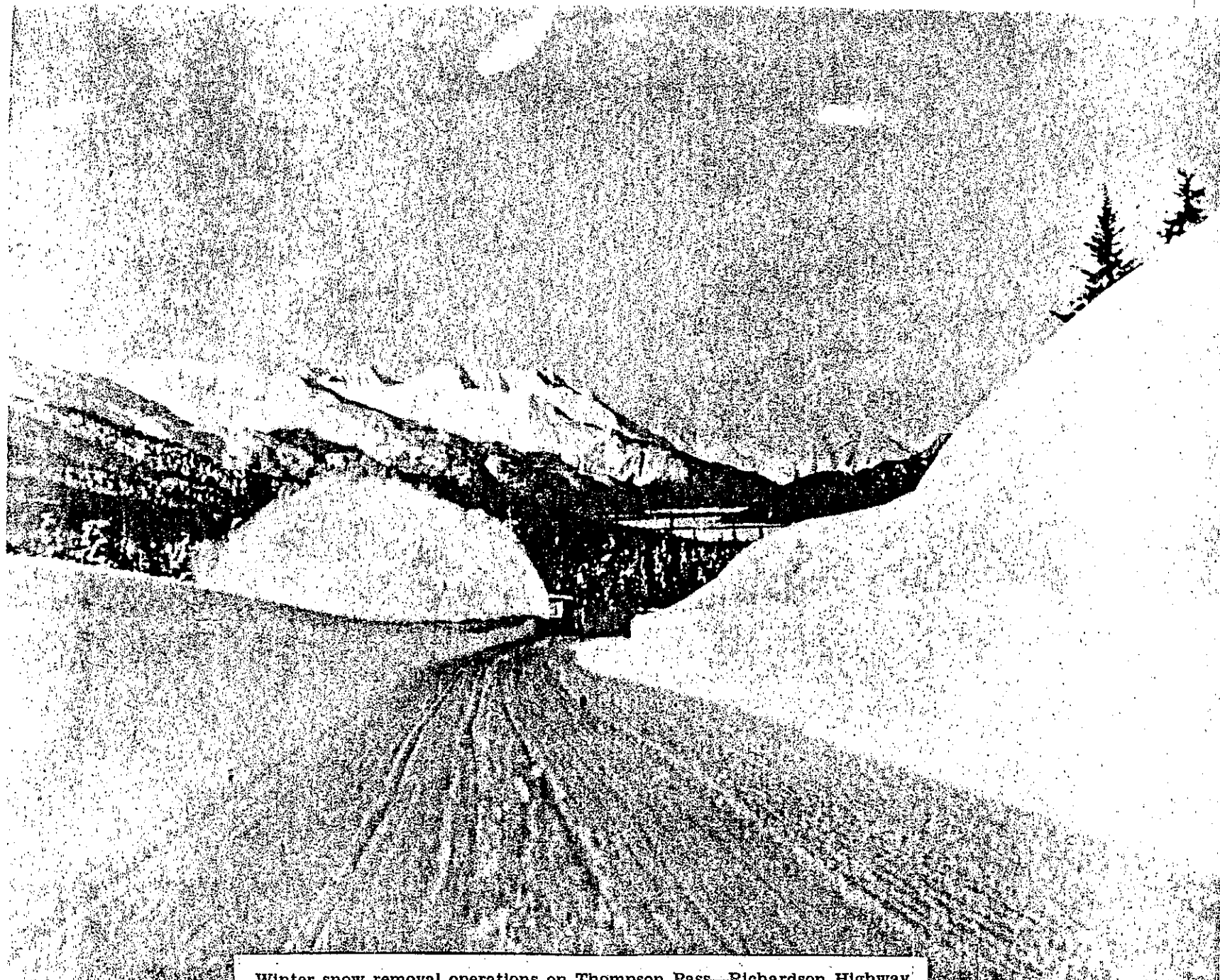


operations in temperatures ranging to 70 degrees below zero, and warm storage facilities to maintain equipment in "stand-by" condition, are essential. Specially designed heating units are utilized to keep water flowing through drainage structures, rather than freezing on the roadway and forming impassable ice barriers.

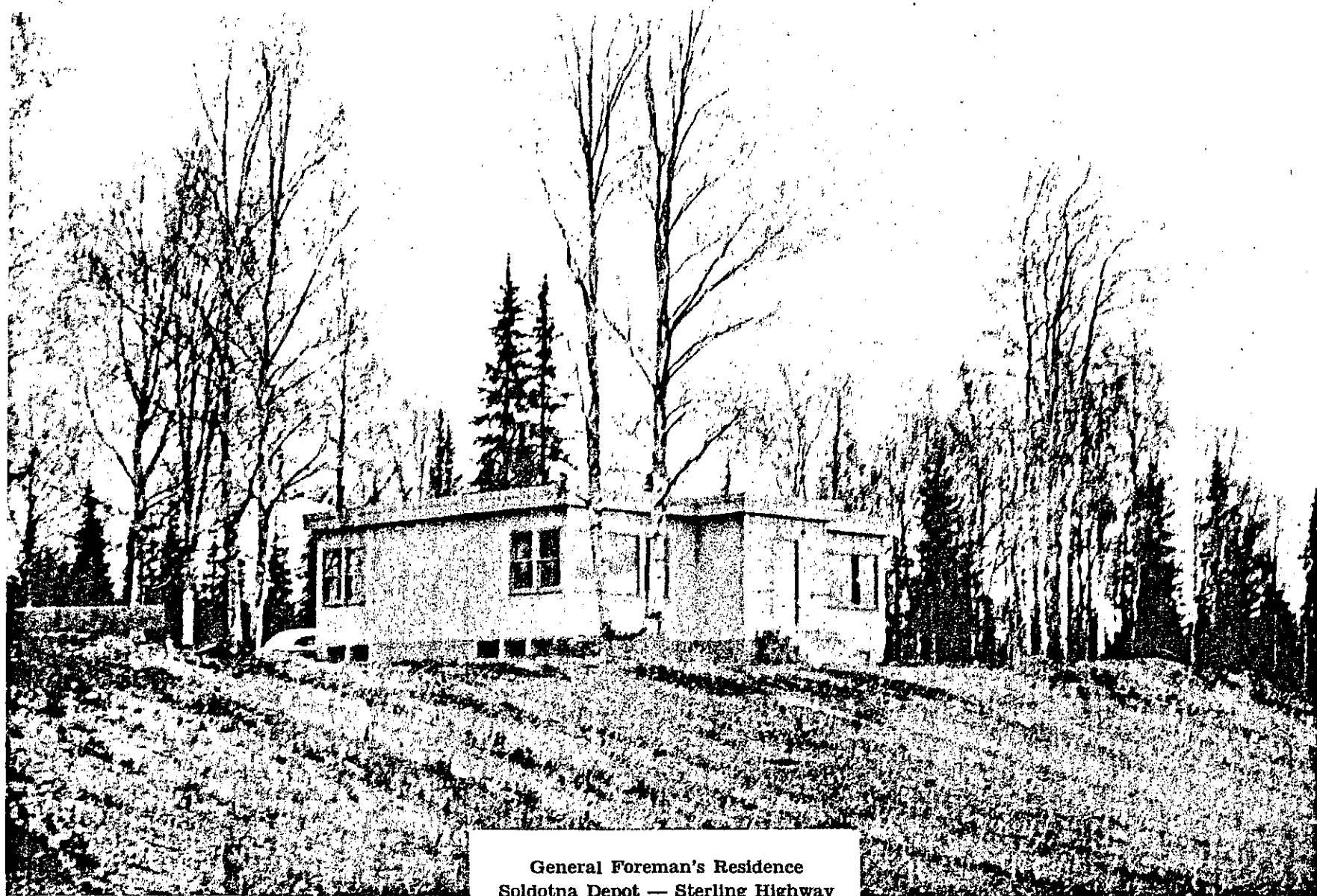
In spite of these and many other maintenance problems, maintenance costs are comparable to those of any state. Below is a tabulation, by feature of maintenance, for the 1956 construction year.

RECAPITULATION  
ANNUAL SUMMARY OF MAINTENANCE COSTS  
Mar. 7, 1955 - Mar. 4, 1956  
By Sub Account

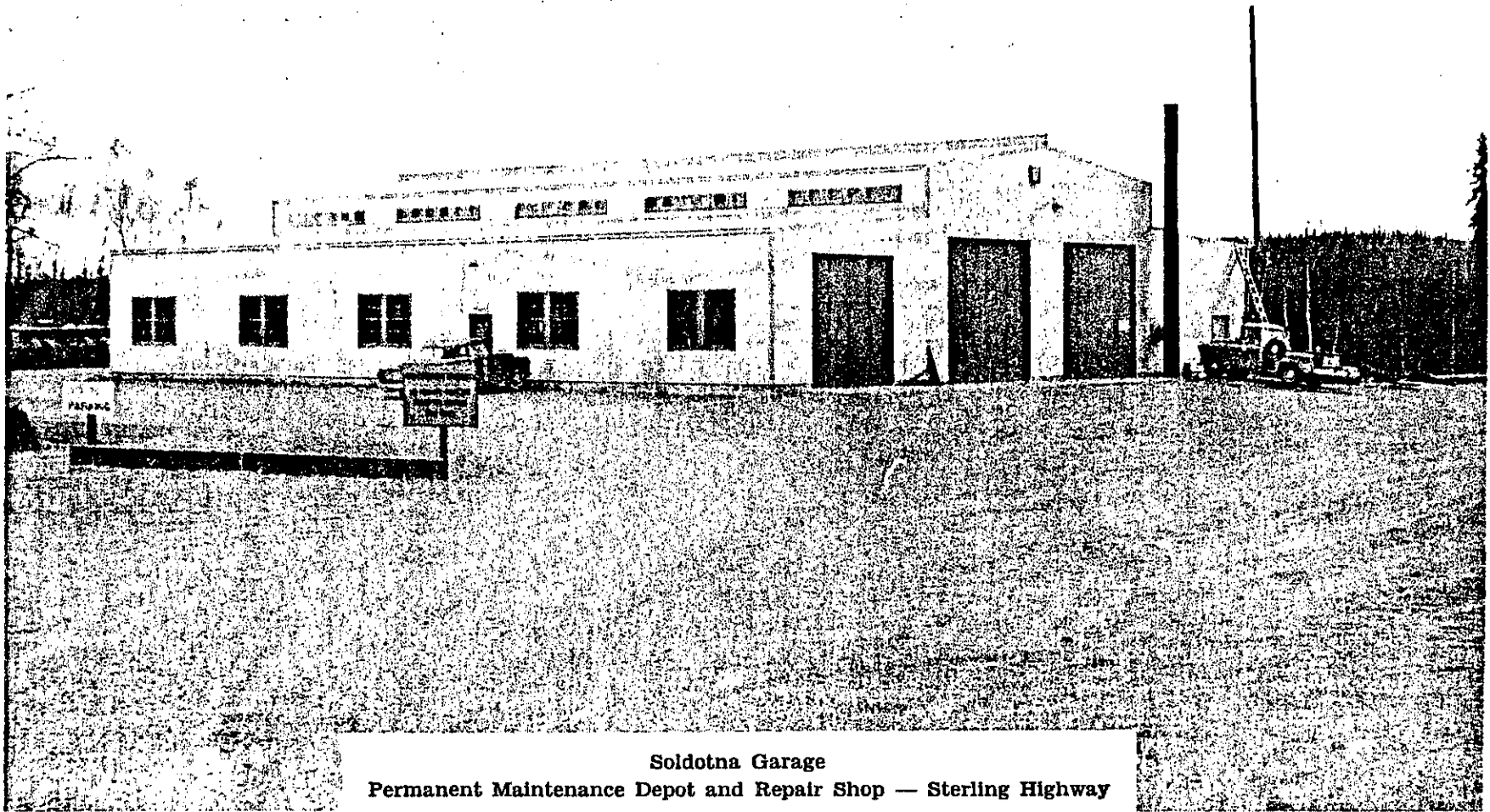
<u>Sub. Acct.</u>	<u>Description</u>	<u>Total Amount</u>	<u>% of Total</u>
#10	Blading & Shaping Gravel Roads	\$ 509,737.93	14.91
#11	Gravel Surfacing	302,983.51	8.86
#12	Dust Control	1,309.76	.04
#13	Pavement Crack Sealing	39,563.01	1.16
#14	Pavement Repair Patching	215,561.91	6.31
#15	Pavement Resealing	8,017.44	.23
#16	Pavement Shoulder Maintenance	31,530.41	.92
#17	Pavement Centerline Striping	6,304.59	.18
#18	Snow Removal	721,907.83	21.12
#19	Blading Snow & Ice	421,111.19	12.32
#20	Land Ice Control & Culvert Thawing	252,107.28	7.38
#21	Snow Fence and Drift Control	11,119.95	.33
#22	Sanding	44,322.09	1.30
#23	Bridge Repair & Maintenance	159,135.95	4.65
#24	Erosion Control	36,456.02	1.07
#25	Culvert Maintenance	137,015.02	4.01
#26	Ditching & Ditch Cleaning	117,671.49	3.44
#27	Guard Rails	415.85	.01
#28	Brush Cutting & Disposal	22,372.18	.65
#29	Chemical Brush Control	10,480.53	.31
#30	Erection & Maint. of Signs & Markers	55,357.46	1.62
#31	Extraordinary Maintenance	95,504.50	2.76
#32	Traffic Control	5,954.95	.18
#33	Patrolling and Inspecting	177,990.03	5.21
#34	Roadside Development	919.68	.03
#35	Ferry Operation	30,759.20	.90
#36	Trail Maintenance	1,916.27	.06
#37	Tram Maintenance	1,504.46	.04
	Totals	\$ 3,419,030.49	100.00 %



Winter snow removal operations on Thompson Pass—Richardson Highway



**General Foreman's Residence  
Soldotna Depot — Sterling Highway**



**Soldotna Garage**  
**Permanent Maintenance Depot and Repair Shop — Sterling Highway**

IV - THE HIGHWAY SYSTEM

During the fiscal year the highway system was increased by 50.9 miles; 16.1 miles of Feeder roads and 34.8 miles of local roads; 26.2 miles of principal Feeder roads were improved to Through road standards and reclassified.

Following is a tabulation of the road system as of 1954, 1955, and 1956:

	<u>1954</u>	<u>1955</u>	<u>1956</u>
Through Roads	989.1	972.3	998.5
Feeder Roads	1,213.9	1,244.7	1,234.6
-----			
Local Roads:			
From Main Feeders	709.4	939.7	761.3
From Isolated Feeders	237.1	237.2	246.6
Isolated Feeders	<u>332.9</u>	<u>349.6</u>	<u>353.4</u>
Total Local Roads	1,279.4	1,326.5	1,361.3
-----			
Total - All Roads	3,482.4	3,543.5	3,594.4
Trails	<u>248.0</u>	<u>248.0</u>	<u>445.0</u>
Total Roads & Trails	3,730.4	3,791.5	4,039.4

Following is a current tabulation of highway system:

THROUGH ROADS

Route No.	Name	Length	Winter Maintenance
120	Richardson Highway (Valdez District)	227.3	227.3
130	Richardson Highway (Fairbanks District)	134.9	134.9
132	Fairbanks-International Airport	1.0	1.0
230	Alaska Highway	200.6	200.6
310	Glenn Highway (Anchorage District)	114.7	114.7
310A	Glenn Highway Alternate	7.5	7.5
311	Anchorage 4th Avenue Post Road	1.0	1.0
320	Glenn Highway (Valdez District)	162.2	162.2
330	Glenn Highway (Fairbanks District)	33.4	33.4
410	Seward-Anchorage Highway	36.9	36.9
411	Anchorage-Spenard	3.5	3.5
412	Anchorage-International Airport	3.0	3.0
510	Sterling Highway	10.9	10.9
514	Kenai Spur	14.3	14.3
630	Steese Highway (Fairbanks-Farmers Loop)	2.8	2.8
632	Steese Highway-University	3.8	3.8
950	Haines-Boundary and Spur to Haines	40.7	40.7

FEEDER ROADS

<u>Route No.</u>	<u>Name</u>	<u>Length</u>	<u>Winter Maintenance</u>
121	Edgerton Cutoff, Willow-Chitina	39.0	39.0
122	Copper River Highway	-	-
231	Northway Junction - Airfield	6.8	6.8
232	Gerstle River Test Site Road (Army)	3.6	3.6
312	Palmer-Matanuska-Wasilla	13.9	13.9
313	Palmer-Wasilla-Willow	30.7	30.7
314	Glenn-Fishhook-Knik	33.6	33.6
321	Slana-Nabesna	45.6	-
331	Taylor Highway	161.0	-
511	Sterling Highway	108.4	108.4
513	North Kenai Roads	16.3	16.3
631	Steese Highway-Farmers Loop-Circle	161.0	30.0
633	University-Ester	6.7	6.7
634	Central-Circle Hot Springs	8.3	-
731	Elliott Highway-Fox to Livengood	68.4	9.0
732	Manley Hot Springs Landing-Eureka	25.7	-
811	Denali Highway (Anchorage District)	82.0	-
812	McKinley Park Primary Roads	93.6	-
813	North Park Boundary-Kantishna	4.5	-
821	Denali Highway (Valdez District)	41.9	-
011	Sterling Landing-Ophir	47.0	-
012	Iditarod-Flat	8.7	-
013	Dillingham-Wood River-Kanakanak	14.7	14.7
014	Abbert Road	0.8	0.8
031	Ruby-Long-Poorman	56.5	-
041	Nome-Council	77.1	-
042	Nome-Kougarok	20.8	5.2
043	Seward Peninsula R.R.	58.0	-
044	Nome-Teller	-	-

Local Road Systems

	<u>Total Miles</u>	<u>Winter Maintenance</u>
Anchorage Locals	62.8	62.8
Glenn Highway Locals	91.7	60.7
Matanuska Valley Locals	139.1	80.3
Kenai Peninsula Locals	115.2	101.3
Kuskokwim Locals	68.2	3.0
Kodiak Locals	59.5	59.5
Alaska Railroad Feeder	94.2	19.0
Bristol Bay Locals	25.3	16.5
Iliamna Locals	28.5	---
McCarthy Locals	30.5	---
Richardson Highway Feeder System	84.8	62.9
Fairbanks Locals	37.5	35.5
Steese Highway Feeder System	136.4	35.6
Taylor Highway Feeder System	19.1	1.9
Elliott Highway Feeder System	9.5	---

	<u>Total Miles</u>	<u>Winter Maintenance</u>
Manley Hot Springs System	18.0	---
Yukon River Isolated System	31.7	---
Nome System	211.5	9.5
Haines & Skagway Locals	61.8	37.4
Southeast Alaska Roads	<u>36.0</u>	<u>36.0</u>
Totals	1,361.3	621.9

<u>Route No.</u>	<u>TRAILS</u>		<u>Length</u>	<u>Winter Maintenance</u>
	<u>Name</u>			
010.9	1	Goodnews Bay-Togiak	53.0	53.0
	2	Goodnews Bay-Platinum	9.5	9.5
	3	Takotna-Flat	18.5	18.5
030.7		Wiseman-Porcupine	18.0	-
040.5	1	Kotzebue-Shesholik	9.0	9.0
	2	Kotzebue-Noatak	60.0	13.0
	3	Kotzebue-Noorvik-Selawik	95.0	12.0
	4	Golovin-White Mountain	12.0	12.0
	5	Golovin-Moses Point	45.0	6.0
	6	Deering-Candle-Kiwalik	25.0	12.0
	7	St. Michael	5.0	5.0
	8	Teller-Cape Douglas	21.0	12.0
	9	Teller-Igloo Creek	22.0	6.0
	10	Teller-Mission	6.0	6.0
	11	Teller-Lagoon Channel	3.0	3.0
	12	Teller-Mary's Igloo	43.0	43.0

#### Traffic Statistics

Traffic density studies play an important part in the Commission's planning and programming. Data obtained at 47 permanent traffic count stations for identical periods each year are particularly useful in allocating maintenance funds, and for detecting changes in traffic patterns and characteristics.

A tabulation of traffic counts for the years 1953-1956 follows.

TRAFFIC STATISTICS

1953 - 1956  
Daily Averages

<u>Anchorage District</u>	<u>Aug.</u> <u>1953</u>	<u>Aug.</u> <u>1954</u>	<u>June</u> <u>1955</u>	<u>June</u> <u>1956</u>
A-1 Anchorage City Limits - Glenn Highway	18,625	15,485	16,765	17,056
A-2 Scalehouse - Glenn Highway	2,901	3,068	3,196	2,431
A-3 Knik Bridge - Glenn Highway	1,281	1,404	1,709	1,331
A-4 Mile 94 - Glenn Highway	337	546	563	444
A-5 Mile 1 - Spenard Road	17,550	16,820	17,092	22,438
A-6 Anchorage City Limits - Seward-Anchorage Highway	11,825	12,132	12,531	11,253
A-7 South of Fireweed Lane - Seward-Anchorage Highway	4,785	4,443	5,243	7,206
A-8 South of Potter - Seward-Anchorage Highway	566	823	1,067	1,663
A-9 Forest Boundary - Sterling Highway	165	196	226	282
A-10 Kenai Bridge - Sterling Highway	338	270	472	351
A-11 Homer City Limits - Sterling Highway	361	599	535	481
A-12 West of Kenai Junction - Kenai Spur	411	559	1,013	1,098
A-13 North of Kenai City Limits - Salamatof Road	825	1,010	934	970
A-14 West of Park Headquarters - McKinley Park	31	34	35	37
A-15 Homer Locals (Homer ARC Garage)	-	-	520	774
A-16 Abbett Road - Kodiak	-	-	-	1,746

Valdez District

V-1 Mile 1 - Richardson Highway (Steel Bridge)	144	457	530	268
V-2 Mile 47 - Richardson Highway (Stewart Creek Bridge)	203	128	324	207
V-3 Edgerton Highway - West of Junction	82	43	32	59
V-4 South of Glenn Junction - Mile 115	278	289	257	322
V-5 Mile 186 - Glenn Highway (Moose Creek Bridge)	303	492	701	631
V-6 Mile 117 - Richardson Highway	328	431	507	563
V-7 Mile 132 - Richardson Highway	247	299	334	245
V-8 Mile 1 - Denali Highway (Gulkana Bridge)	-	59	33	79
V-9 Mile 199 - Richardson Highway - (Gun Creek Bridge)	-	318	168	63
V-10 Mile 3 - Tok Cutoff	267	210	182	405
V-11 Mile 75 - Tok Cutoff (Slana River Bridge)	-	478	183	126

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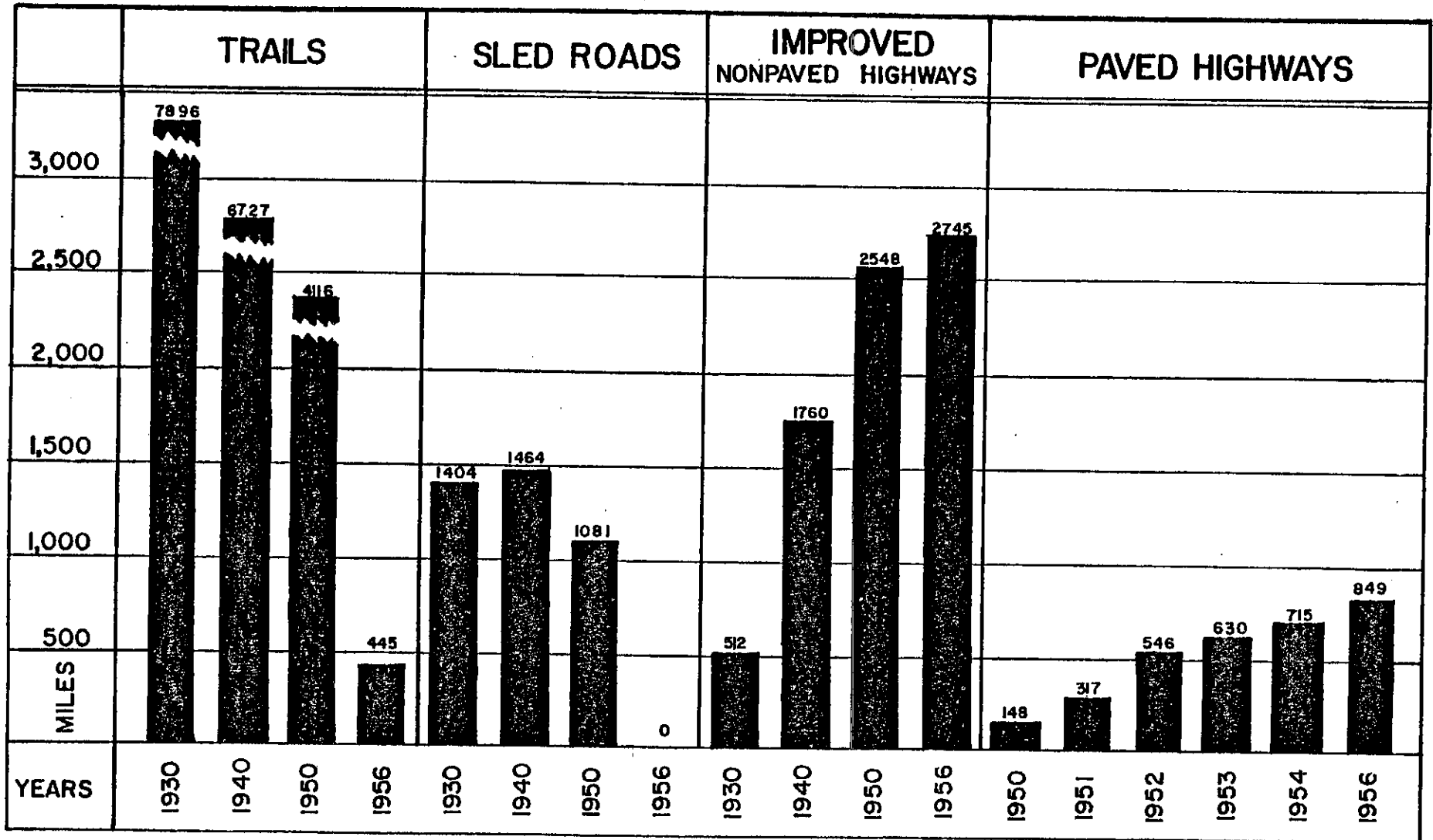
<u>Fairbanks District</u>	Aug. 1953	Aug. 1954	June 1955	June 1956
F-1 Mile 361 - Richardson Highway	-	6,494	4,537	4,894
F-2 Scalehouse - Richardson Highway	-	3,507	2,867	2,788
F-3 Mile 315 - Richardson Highway (Silver Fox)	-	552	432	435
F-4 Tanana River Bridge - Richardson Highway	-	658	421	499
F-5 Jarvis Creek - Richardson Highway	-	1,247	851	949
F-6 Mile 248 - Richardson Highway	-	268	219	274
F-7 Mile 1427 - Alaska Highway	-	339	202	276
F-8 Mile 1320 - Alaska Highway	118	567	419	131
F-9 Mile 1309 - Alaska Highway (Tok Bridge)	265	392	340	225
F-10 Mile 1248 - Alaska Highway (Gardiner Creek Bridge)	-	316	247	170
F-11 Mile 2 - Taylor Highway	-	47	49	24
F-12 Mile 122 - Tok Cutoff (3 miles south of Tok)	141	518	181	207
F-13 New Chena River Bridge	-	-	5,328	8,284
F-14 ARC Depot - Steese Highway	-	7,937	8,122	7,931
F-15 Mile 8- Steese Highway (South of Fox)	-	559	539	374
F-16 Mile 1 - Elliott Highway	-	193	154	150
F-17 Mile 39 - Steese Highway (Chatanika Bridge)	-	84	116	131

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Haines Sub-District

H-1 Mile 5 - Haines Highway	-	273	219	201
H-2 Mile 2 - Lutak Road	-	627	242	194
H-3 Mile 1 - Mud Bay Road	-	-	-	167

## PROGRESS OF ROAD CONSTRUCTION IN ALASKA



V - FISCAL YEAR 1957 PROGRAM

The Alaska Road Commission Appropriation for fiscal year 1957 totaled \$11,425,000, of which \$7,800,000 was for construction and \$3,625,000 for maintenance.

A. Construction

1. Preparation of Plans

Funds appropriated for preliminary reconnaissance, pioneer survey and preparation of plans for proposed new projects, the improvement of existing roads and bridges, and cadastral survey of completed routes, totaled \$300,000 for the following projects:

Copper River Highway	\$ 55,000
Nenana-McKinley Park	15,000
Kasilof-Kenai-Sterling Highway	25,000
Copper River - Bering River	20,000
Town Surveys	25,000
Chilkat River Bridge & Road	20,000
Nabesna-Chisana-Alaska Highway	50,000
Farm & Industrial Roads	40,000
Cadastral Surveys	50,000
	<hr/>
	\$ 300,000

2. Construction in Progress

(a) Taylor Highway, \$451,000 - This 161 mile route from the Alaska Highway to Eagle on the Yukon River will be completed to Feeder Road standards during this year. Under stage construction by Government forces for the past 6 years, this route and connecting Canadian routes provide a by-pass of 381 miles of the Alaska Highway.

(b) Richardson Highway, \$1,549,000 - Funds appropriated for this route will permit paving of the 42-mile Paxson to Rapids Section. Upon completion of this section the entire 362.2 miles of the Richardson Highway will be paved.

(c) Denali Highway, \$2,000,000 - The final center section of this pioneer route, totaling 37 miles, will be prosecuted by contract. The balance of this 162-mile route connecting Mt. McKinley National Park with the primary network, stage constructed by force account, will be improved to Feeder Road standards during the year.

(d) Sterling Highway, \$2,200,000 - Approximately 25 miles of this main artery serving the Kenai Peninsula will be paved during the year.

(e) Fairbanks-Nenana, \$500,000 - Contract construction of this route to connect the town of Nenana with the inter-connected highway network will be continued.

3. Reconstruction

Funds totaling \$800,000 were appropriated for the improvement of grade and alignment of portions of principal secondary roads, as follows:

Steese Highway	\$150,000
Fairbanks Local Roads	150,000
Anchorage Local Roads	200,000
Matanuska Valley Roads	200,000
Southeastern Alaska Roads	100,000

4. Maintenance

The total cost of maintaining the highway system for the year is estimated at \$4,075,000, of which \$450,000 will be contributed by the Territory, and by other Federal, civil, and military organizations.

5. Other

Under terms of the Federal-Aid Highway Act, enacted subsequent to the above detailed appropriation, the Territory will be eligible for an additional allocation of \$1,932,588 for fiscal 1957. Programming of these funds will not be accomplished until after the September 16, 1956, transfer of the Alaska Road Commission to the Department of Commerce.

VI - FISCAL DATA

A. APPROPRIATIONS - EXPENDITURES

BALANCE SHEET - FISCAL YEAR 1956

ALASKA FUND

Total expenditures to 6-30-51 .....	\$ 6,388,575.49
Less refunds, reimbursements and sales prior to 1929...	-130,182.29
Net expenditures.....	<u>6,258,393.20</u>
Plus reversion to Treasury.....	20.00
Total appropriated.....	<u>6,258,413.20</u>

CONTRIBUTED FUNDS

Total expenditures to 6-30-56.....	6,606,446.41
Less refunds which were included to 1929.....	-10,571.43
Net expenditures.....	<u>6,595,874.98</u>
Plus reversion to Treasury.....	377.92
Plus reversions to Treasury, Legislative deductions....	302.39
Plus unexpended balance 6-30-56.....	280,921.46
Total Contributed.....	<u>6,877,476.75</u>

CONGRESSIONAL APPROPRIATIONS

Total expenditures to 6-30-56.....	187,607,416.03
Less refunds which were included to 1929.....	-23,245.63
Net expenditures.....	<u>187,584,170.40</u>
Plus reversions to Treasury.....	3,400.39
Plus transfer to U. S. Engineer Department.....	417.21
Plus balance Red Mountain road returned to B.P.R.	26,295.62
Plus transfer to B.P.R. (Turnagain Arm).....	75,000.00
Plus Legislative deductions.....	47,094.50
Plus unexpended balance 6-30-56.....	8,137,361.35
Total appropriated.....	<u>195,873,739.47</u>

NATIONAL PARKS (Sitka and McKinley)

Total expenditures to 6-30-52.....	2,528,095.13
Less refunds which were included to 1929.....	-20.94
Net expenditures.....	<u>2,528,074.19</u>
Plus reversions to Treasury.....	48.74
Plus Legislative deductions.....	3,506.39
Plus unexpended balance 6-30-56.....	- --
Total appropriated.....	<u>2,531,629.32</u>

INCREASE OF COMPENSATION (War Department)

Total expenditures.....	95,076.45
Less refunds which were included to 1929.....	-16.95
Net expended and appropriated.....	<u>95,059.50</u>

QUARTERMASTER GENERAL (Cemeteries, Barracks and Quarters)

Net expended and appropriated.....	<u>7,957.10</u>
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SUPERVISED FUNDS

Net expended and appropriated.....	<u>2,840,147.35</u>
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TOTAL APPROPRIATED - ALL FUNDS..... 203,955,609.49

B. APPROPRIATIONS

Construction and maintenance of military and post roads, bridges and trails, Alaska:

Act of June 12, 1906 (34 Stat. 254).....	\$ 150,000.00
Act of June 20, 1906 (34 Stat. 316).....	35,000.00
Act of March 2, 1907 (34 Stat. 1171).....	250,000.00
Act of May 11, 1908 (35 Stat. 120).....	250,000.00
Act of March 3, 1909 (35 Stat. 746).....	350,000.00
Act of March 23, 1910 (36 Stat. 257).....	100,000.00
Act of March 3, 1911 (36 Stat. 1052).....	150,000.00
Act of August 24, 1912 (37 Stat. 584).....	125,000.00
Act of March 2, 1913 (37 Stat. 716).....	155,000.00
Act of April 27, 1914 (38 Stat. 366).....	125,000.00
Act of March 4, 1915 (38 Stat. 1078).....	165,000.00
Act of August 29, 1916 (39 Stat. 638).....	500,000.00
Act of May 12, 1917 (40 Stat. 57).....	500,000.00
Act of July 9, 1918 (40 Stat. 863).....	100,000.00
Act of July 11, 1919 (41 Stat. 124).....	100,000.00
Act of June 5, 1920 (41 Stat. 970).....	350,000.00
Act of June 30, 1921 (42 Stat. 90).....	425,000.00
Act of June 30, 1922 (42 Stat. 759).....	465,000.00
Act of March 2, 1923 (42 Stat. 1420).....	650,600.00

Construction and maintenance of roads, bridges and trails, Alaska:

Act of June 7, 1924 (43 Stat. 515).....	725,000.00
Act of December 6, 1924 (43 Stat. 712).....	55,000.00
Act of February 12, 1925 (43 Stat. 930).....	900,000.00
Act of April 15, 1926 (44 Stat. 291).....	900,000.00
Act of February 23, 1927 (44 Stat. 1141).....	1,022,500.00
Act of March 23, 1928 (45 Stat. 358).....	925,000.00
Act of February 28, 1929 (45 Stat. 1379).....	800,000.00
Act of May 28, 1930 (46 Stat. 462).....	800,000.00
Act of February 23, 1931 (46 Stat. 1305).....	800,000.00
Act of July 14, 1932 (47 Stat. 692).....	494,310.00
Act of February 27, 1933 (47 Stat. 854).....	469,300.00
Act of March 2, 1934 (48 Stat. 392).....	452,000.00
Salary Restoration.....	18,446.00
Act of May 9, 1935 (49 Stat. 213).....	500,000.00
Act of June 22, 1936, First Deficiency Appropriation Act 1936 (49 Stat. 1623).....	36,000.00
Act of June 22, 1936 (49 Stat. 1800).....	525,000.00
Act of August 9, 1937 (50 Stat. 612).....	535,000.00
Act of August 25, 1937, Third Deficiency Appropriation Act 1937 (50 Stat. 765).....	11.56
Act of May 9, 1938 (52 Stat. 339).....	535,000.00
Act of June 25, 1938, Second Deficiency Appropriation Act 1938 (52 Stat. 1114).....	40.46

Act of May 10, 1939 (53 Stat. 734).....	\$	560,000.00
Act of June 18, 1940 (54 Stat. 458).....		570,000.00
Act of April 1, 1941, First Deficiency Appropriation Act 1941 (55 Stat. 69).....		1,000,000.00
Act of June 28, 1941 (55 Stat. 358).....		684,500.00
Act of December 17, 1941, Third Supplemental National Defense Appropriation Act 1942 (55 Stat. 827).		500,000.00
Act of February 21, 1942, First Deficiency Appropriation Act 1942 (56 Stat. 105).....		2,200,000.00
Act of July 2, 1942 (56 Stat. 559).....		999,900.00
Act of October 26, 1942, Second Supplemental National Defense Appropriation Act 1943 (56 Stat. 1003).		500,000.00
Act of July 12, 1943 (57 Stat. 491).....		880,000.00
Act of December 23, 1943 (First Supplemental National Defense Appropriation Act 1944 (57 Stat. 625)..		800,000.00
Act of June 28, 1944 (58 Stat. 505).....		2,250,000.00
Act of July 3, 1945 (59 Stat. 358).....		2,288,900.00
Act of July 1, 1946 (60 Stat. 382).....		3,350,000.00
Act of July 25, 1947 (61 Stat. 489).....		4,000,000.00
Act of May 10, 1948, First Deficiency Appropriation Act 1948 (62 Stat. 222).....		7,370,000.00
Deposit of balance from prior appropriation.....		26.66

Construction, operation, and maintenance of roads, Alaska:

Act of June 29, 1948 (62 Stat. 1147)		
Construction.....	\$8,601,100.00	
Operation and maintenance.....	<u>1,841,300.00</u>	10,442,400.00
Act of October 12, 1949 (63 Stat. 799)		
Construction.....	24,850,700.00	
Operation and maintenance.....	<u>1,911,300.00</u>	26,762,000.00
Transfer from Alaska Fund.....		58,804.79
Act of September 6, 1950 (64 Stat. 694)		
Construction.....	20,400,000.00	
Less reserve by		
Bureau of Budget... -250,000.00	20,150,000.00	
Operation and Maintenance.....	<u>2,600,000.00</u>	22,750,000.00
Act of September 27, 1950, Supplemental Appropriation Act 1951 (64 Stat. 1054)		
Construction.....		7,500,000.00
Act of August 31, 1951 (65 Stat. 263)		
Construction.....	20,000,000.00	
Operation and maintenance.....	<u>2,900,000.00</u>	22,900,000.00
Act of June 5, 1952, Third Supplemental Appropriation Act 1952 (66 Stat. 118)		
Operation and maintenance.....		40,000.00
Act of July 9, 1952 (66 Stat. 458)		
Construction.....	17,000,000.00	
Operation and maintenance.....	<u>3,318,000.00</u>	20,318,000.00

Act of July 31, 1953, (67 Stat. 274)		
Construction .....	\$14,600,000.00	
Operation and maintenance.....	3,000,000.00	\$17,600,000.00
Act of July 1, 1954 (68 Stat. 373)		
Construction.....	8,000,000.00	
Operation and maintenance.....	3,500,000.00	11,500,000.00
Act of June 16, 1955 (69 Stat. 150)		
Construction.....	6,300,000.00	
Operation and Maintenance.....	3,500,000.00	9,800,000.00
Total.....		<u>\$193,062,739.47</u>
National Industrial Recovery, Interior, Alaska Road Commission:		
Fiscal years 1933-1937.....		<u>\$1,596,000.00</u>
Emergency Relief, Alaska Road Commission:		
Fiscal years 1935-1937.....		671,500.00
Fiscal years 1936-1938.....		<u>450,000.00</u>
Total.....		<u>\$1,121,500.00</u>
Construction of Access Road, Kasitsna Bay to Red Mountain:		
Fiscal year 1943.....		<u>93,500.00</u>
Total Congressional Appropriations.....		<u>\$195,873,739.47</u>

Construction and maintenance of wagon roads,  
bridges and trails, "Alaska Fund":

Fiscal year 1905.....	\$ 28,000.00
Fiscal year 1906.....	80,500.00
Fiscal year 1907.....	128,584.00
Fiscal year 1908.....	117,750.00
Fiscal year 1909.....	145,200.00
Fiscal year 1910.....	125,000.00
Fiscal year 1911.....	155,000.00
Fiscal year 1912.....	152,000.00
Fiscal year 1913.....	228,000.00
Fiscal year 1914.....	166,316.32
Fiscal year 1915.....	171,824.31
Fiscal year 1916.....	164,402.30
Fiscal year 1917.....	50,000.00
Fiscal year 1918.....	256,000.00
Fiscal year 1919.....	35,000.00
Fiscal year 1920.....	124,992.96
Fiscal year 1920 (supplemental).....	153,805.19
Fiscal year 1921.....	98,437.82
Fiscal year 1922.....	135,975.05



Fiscal year 1923 .....	\$119,227.10
Fiscal year 1924 .....	115,803.20
Fiscal year 1925 .....	123,871.33
Fiscal year 1926 .....	137,431.66
Fiscal year 1927 .....	142,905.28
Fiscal year 1928 .....	73,653.64
Fiscal year 1929 .....	150,432.68
Fiscal year 1930 .....	216,757.86
Fiscal year 1931 .....	54,843.66
Fiscal year 1932 .....	176,898.16
Fiscal year 1933 .....	88,554.93
Fiscal year 1934 .....	145,258.95
Fiscal year 1935 .....	152,552.45
Fiscal year 1936 .....	155,145.90
Fiscal year 1937 .....	122,394.77
Fiscal year 1938 .....	141,609.19
Fiscal year 1938 (supplemental) .....	2,589.28
Fiscal year 1939 .....	160,000.00
Fiscal year 1940 .....	140,000.00
Fiscal year 1941 .....	150,000.00
Fiscal year 1942 .....	151,000.00
Fiscal year 1943 .....	152,000.00
Fiscal year 1944 .....	152,500.00
Fiscal year 1945 .....	152,500.00
Fiscal year 1946 .....	152,500.00
Fiscal year 1947 .....	140,000.00
Fiscal year 1948 .....	130,000.00
Fiscal year 1949 .....	100,000.00
Fiscal year 1950 .....	50,000.00
Fiscal year 1951 .....	50,000.00
Less transfer to Construction, operation, and maintenance appropriation .....	<u>-58,804.79</u>
Total appropriated - net .....	<u><u>\$6,258,413.20</u></u>

By Act of Congress approved May 9, 1935, the "Alaska Fund" was changed to Congressional authorization, subject to tax fund receipt limitation.

Increase of Compensation, War Department:

Fiscal year 1918 .....	\$145.20
Fiscal year 1921 .....	940.00
Fiscal year 1922 .....	4,322.09
Fiscal year 1923 .....	32,846.67
Fiscal year 1924 .....	<u>56,805.54</u>
Total	<u><u>\$95,059.50</u></u>

National Cemeteries:

Fiscal year 1925 .....	\$ 302.17	
Fiscal year 1926 .....	300.00	
Fiscal year 1927 .....	800.00	
Fiscal year 1928 .....	792.83	
Fiscal year 1929 .....	1,176.00	
Fiscal year 1930 .....	1,467.72	
Fiscal year 1931 .....	800.00	
Fiscal year 1932 .....	<u>1,065.88</u>	\$6,704.60

Barracks and Quarters:

Fiscal year 1932 .....		<u>\$1,252.50</u>
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Total, Quartermaster General ..... \$7,957.10

National Monuments (Sitka):

Fiscal year 1933 .....	\$ 500.00	
Fiscal year 1934 .....	375.00	
Fiscal year 1935 .....	500.00	
Fiscal year 1936 .....	700.00	
Fiscal year 1937 .....	700.00	
Fiscal year 1938 .....	620.00	
Fiscal year 1939 .....	690.00	
Fiscal year 1940 .....	<u>392.02</u>	\$4,477.02

Roads and Trails, National Parks (McKinley Park):

Act of March 3, 1925 .....	\$80,000.00
Act of May 10, 1926 .....	50,000.00
Act of January 12, 1927 .....	16,000.00
Act of March 4, 1928 .....	60,000.00
Act of March 4, 1929 .....	65,000.00
Act of May 14, 1930 .....	220,000.00
Act of February 14, 1931 .....	204,876.37
Act of April 22, 1932 .....	80,000.00
Fiscal year 1933 - 1935 (NIRA) .....	150,000.00
Fiscal year 1934 .....	7,000.00
Fiscal year 1935 .....	20,000.00
Fiscal year 1936 .....	150,000.00
Fiscal year 1937 .....	124,000.00
Fiscal year 1938 .....	90,000.00
Fiscal year 1939 .....	100,000.00
Fiscal year 1940 .....	50,000.00
Fiscal year 1941 .....	50,000.00
Fiscal year 1942 .....	37,326.93
Fiscal year 1943 .....	10,000.00
Fiscal year 1944 .....	15,000.00
Fiscal year 1945 .....	25,000.00
Fiscal year 1946 .....	10,000.00

Fiscal year 1947 .....	\$119,249.00	
Fiscal year 1948 .....	25,850.00	
Fiscal year 1949 .....	58,520.00	
Fiscal year 1950 .....	270,330.00	
Fiscal year 1951 .....	319,200.00	
Fiscal year 1952 .....	<u>119,800.00</u>	<u>\$2,527,152.30(a)</u>
Total, National Park Service .....		<u>\$2,531,629.32</u>

(a) Beginning with Fiscal year 1953, the National Park Service working fund with the Alaska Road Commission was discontinued. Reimbursements are now made direct to the Alaska Road Commission appropriation and accounted for in the same manner as other reimbursements.

CONTRIBUTED FUNDS  
(Act of Congress approved June 30, 1921,  
Alaska Special Fund)

By the Territory of Alaska:

Public roads, bridges, trails,  
ferries and related works:

Fiscal year 1920 .....	115,517.94
Fiscal year 1921 .....	113,746.61
Fiscal year 1922 .....	43,237.28
Fiscal year 1923 .....	88,512.88
Fiscal year 1924 .....	91,325.35
Fiscal year 1925 .....	76,478.45
Fiscal year 1926 .....	113,850.00
Fiscal year 1927 .....	83,292.24
Fiscal year 1928 .....	163,099.02
Fiscal year 1929 .....	181,512.79
Fiscal year 1930 .....	148,413.03
Fiscal year 1931 .....	139,972.99
Fiscal year 1932 .....	90,950.00
Fiscal year 1933 .....	-----
Fiscal year 1934 .....	28,800.00
Fiscal year 1935 .....	47,250.00
Fiscal year 1936 .....	45,798.00
Fiscal year 1937 .....	81,897.59
Fiscal year 1938 .....	76,120.00
Fiscal year 1939 .....	274,413.19
Fiscal year 1940 .....	204,647.35
Fiscal year 1941 .....	95,350.00

Fiscal year 1942.....	\$163,950.00	
Fiscal year 1943.....	62,826.20	
Fiscal year 1944.....	78,925.60	
Fiscal year 1945.....	81,892.21	
Fiscal year 1946.....	147,672.94	
Fiscal year 1947.....	165,324.30	
Fiscal year 1948.....	173,928.00	
Fiscal year 1949.....	316,876.97	
Fiscal year 1950.....	238,287.99	
Fiscal year 1951.....	239,572.10	
Fiscal year 1952.....	293,190.18	
Fiscal year 1953.....	250,937.24	
Fiscal year 1954.....	352,151.95	
Fiscal year 1955.....	684,691.67	
Fiscal year 1956.....	<u>703,129.27</u>	\$ 6,257,541.33

Shelter cabins:

Fiscal year 1922.....	\$ 6,500.00	
Fiscal year 1923.....	3,500.00	
Fiscal year 1924.....	15,000.00	
Fiscal year 1925.....	2,500.00	
Fiscal year 1926.....	17,500.00	
Fiscal year 1927.....	-----	
Fiscal year 1928.....	25,000.00	
Fiscal year 1929.....	7,266.63	
Fiscal year 1930.....	12,000.00	
Fiscal year 1931.....	6,628.99	
Fiscal year 1932.....	2,699.88	
Fiscal year 1933.....	-----	
Fiscal year 1934.....	1,000.00	
Fiscal year 1935.....	1,000.00	
Fiscal year 1936.....	5,500.00	
Fiscal year 1937.....	5,150.00	
Fiscal year 1938.....	2,000.00	
Fiscal year 1939.....	2,000.00	
Fiscal year 1940.....	3,490.60	
Fiscal years 1941-1943.....	-----	
Fiscal year 1944.....	<u>2,225.09</u>	\$ 120,961.19

Nizina River Bridge:

Fiscal year 1922.....	\$ 5,000.00	
Fiscal year 1923.....	<u>20,000.00</u>	\$ 25,000.00

Telephone Lines, Seward Peninsula:

Fiscal year 1926.....	\$ 2,149.10	
Fiscal year 1927.....	1,382.50	
Fiscal year 1928.....	3,264.57	
Fiscal year 1929.....	1,203.03	
Fiscal year 1930.....	2,567.61	
Fiscal year 1931.....	<u>2,506.39</u>	\$ 13,073.20

Pioneers' Cemetery Road:		
Fiscal year 1927.....	\$	3,341.02
Yukon-Kuskokwim Portage:		
Fiscal year 1930 .....		7,500.00
Valdez Dyke:		
Fiscal year 1932 .....		10,000.00
Flood control, Lowell Creek:		
Fiscal year 1929 .....		10,000.00
Radio telephones:		
Fiscal year 1932 .....		<u>6,477.34</u>
Total contributions, Territory of Alaska.	\$	6,453,894.08

Contributions, Others:

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 .....		2,819.01
Fiscal year 1927 .....		5,756.63
Fiscal year 1928 .....		19,489.15
Fiscal year 1929 .....		38,430.32
Fiscal year 1930 .....		17,969.23
Fiscal year 1931 .....		18,764.32
Fiscal year 1932 .....		34,850.57
Fiscal year 1933 .....		7,001.10
Fiscal year 1934 .....		6,075.63
Fiscal year 1935 .....		7,253.85
Fiscal year 1936 .....		8,323.70
Fiscal year 1937 .....		7,588.49
Fiscal year 1938 .....		7,038.26
Fiscal year 1939 .....		8,930.58
Fiscal year 1940 .....		8,341.34
Fiscal year 1941 .....		8,407.01
Fiscal year 1942 .....		6,285.18
Fiscal year 1943 .....		6,710.12
Fiscal year 1944 .....		2,107.86
Fiscal year 1945 .....		6,433.90
Fiscal year 1946 .....		6,703.00
Fiscal year 1947 .....		4,989.57
Fiscal year 1948 .....		5,881.47
Fiscal year 1949 .....		9,952.19
Fiscal year 1950 .....		46,891.93
Fiscal year 1951 .....		10,807.26

Fiscal year 1952.....	\$19,100.17	
Fiscal year 1953.....	9,853.89	
Fiscal year 1954.....	31,214.57	
Fiscal year 1955.....	15,442.01	
Fiscal year 1956.....	<u>25,683.93</u>	<u>\$423,582.67</u>

Total contributed funds..... \$6,877,476.75

Supervised funds:

Road tax, labor and miscellaneous contributions, 1905-1920.....		\$ 200,000.00
Department of Agriculture, 1920.....		202,702.67
Quartermaster General, 1901-1902, Act of May 26, 1900 (31 Stat. 214) and Act of June 30, 1902 (32 Stat. 507).....		100,000.00(a)
Chief of Engineers, 1904-1905, Act of April 23, 1904 (31 Stat. 271) and Act of March 3, 1905 (33 Stat. 1225) and Supplement.....		34,631.78(a)
Territorial funds and forest revenues prior to 1921..	684,239.64(b)	(c)
Territorial divisional commissioners 1921-1929.....	194,939.60(c)	
Territory of Alaska, 1930.....	1,000.00	
Seward Peninsula tramway, 1923.....	24,014.00(c)	
Tolovana tramway, 1924.....	6,425.00(c)	
Kaltag portage survey, 1925.....	312.72(c)	
Quartermaster General, U. S. Army, Chilkoot Barracks water supply.....		11,080.91
Chief of Engineers, U.S.Army, rivers and harbors, fish traps, etc., 1921-1932.....		1,358,451.53
Miscellaneous, 1926-1930.....		<u>22,349.50(c)</u>

Total supervised funds..... \$ 2,840,147.35

- (a) Expended prior to organization of the Alaska Road Commission.
- (b) Expended prior to supervision by the Alaska Road Commission.
- (c) Included in Alaska Road Commission costs, total \$932,280.46.

TOTAL APPROPRIATED, ALL FUNDS, THROUGH  
FISCAL YEAR 1956..... \$214,484,422.69

C. SUMMARY OF ALL NET EXPENDITURES TO JUNE 30, 1956

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

Fiscal Year	Congressional Appropriations	Alaska Fund	Other Funds	Total
1905	---	\$ 28,000.00	---	\$ 28,000.00
1906	\$118,172.09	57,420.77	---	175,592.86
1907	197,930.91	148,814.79	---	346,745.70
1908	244,857.18	120,772.72	---	365,629.90
1909	236,674.97	146,971.92	---	383,646.89
1910	237,498.50	102,898.29	---	340,396.79
1911	100,000.00	166,777.95	---	266,777.95
1912	150,103.58	167,302.49	---	317,406.07
1912	---	17,052.23 (b)	---	17,052.23
1913	125,010.91	228,117.56	---	353,128.47
1914	153,174.43	170,688.37	---	323,862.80
1915	126,852.28	157,915.84	---	284,768.12
1916	165,011.73	135,708.89	---	300,720.62
1917	500,031.75	76,716.15	---	576,747.90
1918	325,000.00	272,020.18	\$ 145.20	597,165.38
1919	246,651.95	52,372.31	---	299,024.26
1920	192,426.73	224,992.96	101,184.56	358,604.25
1921	350,000.00	218,247.21	98,551.98	666,799.19
1922	426,807.34	173,029.19	83,411.15	683,247.68
1923	555,613.67	34,398.23	150,070.59	740,082.49
1924	730,423.17	67,683.67	138,000.81	936,107.65
1925	775,665.02	168,518.01	194,164.61	1,138,347.64
1926	1,013,577.53	115,035.11	182,705.05	1,311,317.69
1927	889,443.65	207,909.20	119,814.04	1,217,166.89
1928	860,192.90	134,593.11	258,882.17	1,253,668.18
1929	997,297.64	134,371.66	315,494.61	1,447,163.91
1930	775,406.36	138,542.03	342,401.26	1,256,349.65
1931	751,366.08	202,547.78	334,359.60	1,288,273.46
1932	710,738.05	68,270.32	260,022.41	1,039,030.78
1933	448,777.90	162,310.04	83,948.22	695,036.16
1934	467,737.60	88,433.89	42,834.21	599,005.70
1934 (NIRA)	780,396.23	---	53,479.55	833,875.78
1935	522,914.86	242,253.92	72,107.68	837,276.46
1935 (NIRA)	734,751.86	---	93,727.33	828,479.19
1935 (ERA)	1,454.28	---	---	1,454.28
1936	446,805.60	149,562.32	203,749.55	800,117.47
1936 (NIRA)	77,797.00	---	2,793.12	80,590.12
1936 (ERA)	559,945.03	---	---	559,945.03

Fiscal Year	Congressional Appropriations	Alaska Fund	Other Funds	Total
1937	\$ 558,472.55	\$122,394.77	\$ 208,313.82	\$ 889,181.14
1937 (ERA)	170,723.05	---	---	170,723.05
1938	659,793.85	159,163.39	181,669.48	1,000,626.72
1938 (ERA)	376,455.02	---	---	376,455.02
1939	561,752.44	154,034.97	245,877.93	961,665.34
1939 (NIRA)	2,600.00	---	---	2,600.00
1939 (ERA)	10,870.22	---	---	10,870.22
1940	410,540.94	140,251.32	272,040.44	822,832.70
1941	794,909.55	144,973.15	273,112.90	1,212,995.60
1942	1,892,925.33	153,421.65	148,255.07	2,194,602.05
1943	2,795,743.82	112,938.41	47,381.34	2,956,063.57
1944	2,366,075.32	181,748.24	83,651.54	2,631,475.10
1945	2,188,304.06	116,503.16	214,986.51	2,519,793.73
1946	2,257,909.74	119,615.18	179,392.09	2,556,917.01
1947	3,776,113.24	179,677.52	253,802.59	4,209,593.35
1948	3,936,842.28	29,462.08	111,136.87	4,077,441.23
1949	15,352,935.21	77,235.34	304,243.28	15,734,413.83
1950	23,633,376.10	216,620.09	431,019.44	24,281,015.63
1951	29,389,476.14	287.11	500,619.51	29,890,382.76
1952	18,149,624.11	---	858,041.51	19,007,665.62
1953	20,445,121.63	---	260,791.13	20,705,912.76
1954	15,135,182.92	---	-1,124.32	15,134,058.60
1955	13,289,316.25	---	459,395.34	13,748,711.59
1956	13,515,843.48	---	1,073,120.92	14,588,964.40

TOTALS \$174,091,572.55(a) 6,388,575.49(b) 9,237,575.09 203,233,566.61

(a) Includes refunds and reimbursements \$23,245.63, but is exclusive of reversions to Treasury \$3,400.39; Legislative deductions \$47,094.50; Transfer to U.S. Engr. Department \$417.21; transfer to the Bureau of Public Roads \$75,000.00; return of unexpected balance Red Mountain Road to Bureau of Public Roads \$26,295.62.

(b) Includes \$17,052.23 U.S. Treasury adjustment in 1912, and refunds, reimbursements and receipts from sales \$130,182.29 through fiscal year 1929.

"Other Funds" in the foregoing table include the following expenditures from other appropriations:

Fiscal Year	Increase of Compensation Acts	Quartermaster General U. S. Army	Funds Contributed	National Park Service
1918	\$145.20	---	---	---
1919	---	---	---	---
1920	---	---	\$101,184.56	---
1921	940.00	---	97,611.98	---
1922	4,322.09	---	79,089.06	---
1923	28,857.72	---	121,212.87	---
1924	45,675.36	---	92,325.45	---
1925	15,136.08	\$300.00	98,708.53	\$80,020.00



Fiscal Year	Increase of Compensation Acts	Quartermaster General U. S. Army	Funds Contributed	National Park Service
1926	---	\$290.17	\$ 132,414.88	\$ 50,000.00
1927	---	812.00	103,001.10	16,000.94
1928	---	792.83	198,089.34	60,000.00
1929	---	1,000.00	249,494.61	65,000.00
1930	---	1,499.80	180,080.15	160,821.31
1931	---	937.47	165,604.86	167,817.27
1932	---	2,324.83	161,459.79	96,237.79
1933	---	---	6,698.71	77,249.51
1934	---	---	36,027.35	6,806.86
1934 (NIRA)	---	---	---	53,479.55
1935	---	---	51,607.68	20,500.00
1935 (NIRA)	---	---	---	93,727.33
1936	---	---	60,101.48	143,648.07
1936 (NIRA)	---	---	---	2,793.12
1937	---	---	76,656.30	131,657.52
1938	---	---	90,845.47	90,824.01
1939	---	---	146,953.91	98,924.02
1940	---	---	220,871.71	51,168.73
1941	---	---	222,205.86	50,907.04
1942	---	---	116,664.22	31,590.85
1943	---	---	41,362.13	6,019.21
1944	---	---	73,662.54	9,989.00
1945	---	---	199,544.82	15,441.69
1946	---	---	154,112.31	25,279.78
1947	---	---	167,900.50	85,902.09
1948	---	---	47,697.43	63,439.44
1949	---	---	255,723.28	48,520.00
1950	---	---	315,689.44	115,330.00
1951	---	---	309,909.56	190,709.95
1952	---	---	439,751.46	418,290.05
1953	---	---	260,791.13	---
1954	---	---	-1,124.32	---
1955	---	---	459,395.34	---
1956	---	---	1,073,120.92	---
TOTALS	\$95,076.45(a)	\$7,957.10	\$6,606,446.41(b)	\$2,528,095.13(c)

(a) Includes refunds of \$16.95.

(b) Includes refunds of \$10,571.43 but is exclusive of reversions to Treasury \$377.92 and Economy Legislation \$302.39.

(c) Includes refunds of \$20.94 but is exclusive of reversions to Treasury of \$48.74, and Economy Legislation \$3,506.39.

D. COST BALANCE SHEET

January 27, 1905 through June 30, 1956

COST DISTRIBUTION

	<u>Construction Costs</u>	<u>Maintenance Expense</u>	<u>Total</u>
Active Routes* .....	\$140,973,397.69	\$44,878,591.93	\$185,851,989.62
Inactive Routes.....	3,136,256.60	1,887,072.19	5,023,328.79
Buildings and Improvements...	6,659,343.92	443,864.71	7,103,208.63
Surveys - Active.....	880,553.83	---	880,553.83
Surveys - Inactive.....	<u>208,848.52</u>	---	<u>208,848.52</u>
TOTALS.....	\$151,858,400.56	\$47,209,528.83	\$199,067,929.39

COSTS INCURRED (exclusive  
of refunds and reimburse-  
ments)

Total costs 1/27/05 - 11/30/50.....	\$103,736,808.47
Cost Report 12/4/50 - 2/25/51.....	2,266,910.11
Cost Report 2/26/51 - 2/24/52.....	21,893,770.15
Cost Report 2/25/52 - 3/8/53.....	21,431,109.00
Cost Report 3/9/53 - 3/7/54.....	17,241,721.73
Cost Report 3/8/54 - 3/6/55.....	14,012,759.56
Cost Report 3/7/55 - 3/4/56.....	13,911,248.41
Cost Report 3/5/56 - 6/30/56.....	<u>4,573,601.96</u>
TOTAL.....	\$199,067,929.39

\* Includes McKinley Park costs thru June 30, 1952: Construction \$1,771,938.32; Maintenance \$804,332.84. Subsequent to that date receipts from the National Park Service were by reimbursement.