THE ALASKA HIGHWAY

U.S. CONGRESS HOUSE

n favor of the route finally selected.
water route down the Mackenzie
1 Territory to the Yukon River were
cision.
e in the existing airfields, the belief
safest air route for all-year flying had
dation of the Corps of Engineers that
nd feasible within the time limit set
to outweigh the arguments of advo-
minds of the Cabinet committee,
Staff, the Permanent Joint Board on
officials of the Canadian Government.
ave proven that the air route is an
manding officer at the airfield at Big
dered to be the most unsafe of all
e subcommittee that less than 6 days
that field for reasons of bad flying

t, the investment made by the United
elds in Canada and the telegraph and
g the highway has already been almost
ntageous sale of these facilities to the
sh-settlement basis. This subject will
n in this report.
opose to contest the recommendations
ive routes for an international highway
aska. It has concluded, however, that
f airfields from Edmonton to Fairbanks
e highway itself was sufficient justifica-
oute actually used and feels that failure
their authorized representatives to have
would have been a serious error in judg-
with the military requirements of the

E HIGHWAY AND ITS FEEDER ROADS

aska Highway and its feeder facilities by
the private construction firms operating
of the Public Roads Administration con-
tion epics of modern times. It was a
ler great pressure where the elements of
ne to the ultimate test of performance.
ss performance where no errors of judg-
place would not be a supportable state-
findings of the committee on some points.
f the finished highway as it stands today—
ather road—when balanced off against the
ates Government in terms of actual dollars-
us with an example of what American
brains can do when confronted with an
nust be solved and for which there is no
nd transportation procedure.

If exceptions are made for the higher costs of transportation of men, materials, and equipment, for the cost of housing a peak force of 16,000 men, and for the factor of overtime pay made necessary by the time limit on the project, it will be found that the cost of constructing the highway itself was comparable with the average cost of constructing a highway of similar standards in the United States proper during peacetime.

The committee undertook the assignment of investigating this project fully prepared to probe to the utmost the facts and figures pertaining to this project and the conditions under which it was built. It believes that its investigation of these facts and conditions has been as exhaustive as possible under all circumstances. It can report that it was favorably impressed by its findings and such evidence as it found of an unsatisfactory nature was relatively minor and not unexpected in view of the magnitude and scope of the project.

The history of the construction of the project falls into two general classifications: (1) The work for which the Corps of Engineers assumed direct administrative and operational liability; (2) the work assigned by the Corps of Engineers to the Public Roads Administration for which the latter agency assumed full liability.

The original War Department directive issued to the Chief of Engineers on February 14, 1942, read in part as follows:

> It is desired that you undertake the construction, with Engineer troops, of a pioneer-type road from Fort St. John, Canada, to Big Delta, Alaska, via Fort Nelson, Canada, Watson Lake, Canada, Whitehorse, Canada, and Boundary, Alaska. It is further desired that you arrange with the Public Roads Administration to follow the Engineer troops, to correct alinement and grade, construct permanent bridges and culverts, and provide for the completion of the project.

Nine months and six days after the issuance of said directive, the pioneer roadway of the Alaska Highway was completed and opened in a formal ceremony, November 20, 1942, at Soldier's Summit above the southern shore of Kluane Lake, Yukon Territory.

In addition to assuming responsibility for the construction of the pioneer road, the Corps of Engineers, under terms of a confidential letter, dated November 10, 1942, from the commanding general, Services of Supply, Gen. Brehon B. Somervell, to the commanding general, Northwest Service Command, was instructed to commence construction of a road from the vicinity of Haines Point, Alaska, south of Skagway, to the vicinity of Champagne, a point approximately 100 miles west of Whitehorse on the Alaska Highway. This road is now known as the Haines lateral road and construction was authorized to the same standards of construction as the Alaska Highway. Purpose of the Haines lateral road was to relieve the traffic load on the White Pass and Yukon Railway then carrying the bulk of the freight needed for highway construction and supply purposes on that portion of the Alaska Highway east and west of Whitehorse. On April 9, 1943, the Secretary of War authorized the Haines road, as a separate project from the Alaska Highway although over-all responsibility for its construction was vested also in the division engineer of the Northwest Service Command.

It will be seen that the Corps of Engineers concentrated its efforts during the months of February to November 1942, on pushing through the pioneer roadway in which task it was given material assistance by

contractors working under the supervision of the Public Roads Administration.

It will further be seen that the highway which now exists was constructed almost entirely in the calendar year 1943. In 1942 the objective was to force through the wilderness with some sort of a passable trail during the short road-building season. To meet this schedule, the pioneer road went where a bulldozer could go with reasonable ease and speed. At places where a road would normally be benched in a steep hillside or blasted out along a cliff, the bulldozers turned and went up and over the hill or cliff. Speed was the watchword during 1942 and the pioneer road built did not depart greatly from the natural road surface. Trucks did get over this pioneer road, but until July 1943 few of the trucks made the trip from Dawson Creek to Whitehorse in less than 15 days. This section of the highway was traversed by automobile by the subcommittee with ease in 3 days in August 1945.

Seven Engineer regiments were assigned to the construction of the pioneer road. These were the Eighteenth, Thirty-fifth, Ninety-third, Ninety-fifth, Ninety-seventh, Three Hundred and Fortieth, and Three Hundred and Forty-first Engineer Regiments, totaling a force of 394 officers and 10,765 enlisted men. During the latter half of 1942 these regiments were given material assistance in the construction of the pioneer road by 47 contractors working under the supervision of the Public Roads Administration who employed a force of 7,500 men.

There were only three practical points of access to the 1,500 mile route; namely, at the two extremities of the proposed highway and at Whitehorse, Yukon Territory. In order to utilize an existing winter trail from Fort St. John to Fort Nelson, which was impassable after the spring thaw, the Thirty-fifth Engineers were ordered to proceed to Fort Nelson in March 1942. This regiment completed the 325-mile overland march from Fort St. John to Fort Nelson successfully on April 5, 1942, thus cutting off 265 miles from the longest inaccessible part of the route. Because the Thirty-fifth Engineers would be inaccessible except by airplane, after the spring thaw, until a road could be opened to Fort Nelson, every effort was made to push a road through from Fort St. John. The Ninety-fifth and Three Hundred and Forty-first Engineers were assigned to this task and began work in May 1942. The Eighteenth, Ninety-third and Three Hundred Fortieth Engineeers were sent by sea to Skagway, Alaska, thence over the narrow gage White Pass & Yukon Railroad to Whitehorse, all arriving in April 1942. From Whitehorse, the Eighteenth Engineers worked northerly toward Alaska; the Ninety-third Engineers worked southerly toward Lake Teslin; and the Three Hundred Fortieth Engineers were transported by boat from Whitehorse down the Lewes River to points on Lake Teslin and the Teslin River and began construction southerly toward Watson Lake. The Ninety-seventh Engineers were sent by sea to Valdez, Alaska, arriving in April 1942, and moved over the Richardson Highway to Slana where they began construction of a road through Mentasta Pass in the Alaska Range to the junction of the Tok and Tanana Rivers and thence southeasterly toward the international boundary to meet the Eighteenth Engineers working northerly from Whitehorse.

The rate of progress of the troops in co
following tabulation:

Mileage under construc

To date indicated	Mileage
Apr. 30	8
May 31	95
June 30	360
July 31	794
Aug. 31	[1] 1,186
Sept. 30	[1] 1,479
Oct. 25	[1] 1,645

[1] Includes Public Roads Administration construction.

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roadway, and to transfer to the Public Roa
funds for the completion of the constr
authorized standards.

This agreement was embodied in the
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29, 1942. These specifications provided
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steel bridges would be designed for H–
with a 24-foot clear width of roadway.
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The rate of progress of the troops in construction is shown in the following tabulation:

Mileage under construction

To date indicated	Mileage	Remarks
Apr. 30	8	By Thirty-fifth Engineers.
May 31	95	By 4 regiments.
June 30	360	By 7 regiments.
July 31	794	Do.
Aug. 31	[1] 1,186	Fort Nelson reached Aug. 26.
Sept. 30	[1] 1,479	Road passable to Whitehorse, Sept. 24.
Oct. 25	[1] 1,645	Road passable to Fairbanks.

[1] Includes Public Roads Administration construction.

The accomplishments of Public Roads Administration contractors during 1942 included construction of 106 miles of pioneer roadway from Big Delta, Alaska, southeasterly to Tanacross, the widening and grading of over 900 miles of the pioneer roadway, and the completion of construction on the first 77 miles of the Alaska Highway north from Dawson Creek.

Pursuant to the terms of the original War Department directive of February 14, 1942, an agreement was reached between the Public Roads Administration and the Army regarding the part that the Public Roads Administration would play in the construction of the Alaska Highway. An exchange of letters under dates of March 4 and 16, 1942, provided for the improvement and construction of the highway by the Public Roads Administration following as near as practicable the route of the pioneer roadway constructed by Engineer troops.

The type of road to be constructed was to be a two-lane highway along the general lines of Specifications for Construction of Roads and Bridges in National Forests and National Parks, 1941, issued by the Public Roads Administration. The Public Roads Administration agreed to negotiate contracts for the performance of the work and to accept sole responsibility for the form, method of payment, inspection, and administration of contracts. The Corps of Engineers agreed to conduct all negotiations with the Government of Canada for the provision of necessary rights-of-way, to construct the pioneer roadway, and to transfer to the Public Roads Administration sufficient funds for the completion of the construction of the highway to authorized standards.

This agreement was embodied in the initial specifications for the highway issued by the office, Chief of Engineers, under date of April 29, 1942. These specifications provided for 36-foot final-type road with surfacing 28 feet in width. Surfacing was to be provided by materials from local sources. Initially, the bridges would be of the timber trestle type designed for H–15 loading (30 tons gross). Future steel bridges would be designed for H–20 loading (40 tons gross) with a 24-foot clear width of roadway. Culverts would be constructed so far as practicable of portland cement or corrugated metal or, if such materials were not available, of log boxes from local timber. The ruling grades were not to exceed 7 percent, and the curvatures were not to exceed 19° for open-sight distance and 16° for obscured-sight distance.

These specifications were the basis of the original plan for the completion of the Alaska Highway by the Public Roads Administration. The activities of the Public Roads Administration during 1942 were largely confined to assisting the Engineer troops in the completion of the pioneer roadway. Since primary emphasis during the first year was on this phase of the construction, it was not until the beginning of the construction season of 1943 that the Public Roads Administration could begin to give substantial attention to the construction of the permanent improvements on this highway. Aside from work on the pioneer roadway, the principal efforts of the Public Roads Administration during the balance of 1942 and the early months of 1943 were devoted to construction of camps for the housing of workers and the mobilization of contractors and equipment, and performing other essential work required by the Army. The Public Roads Administration obtained services of 4 management contractors and through them other Canadian and American contractors, totaling in all 77, who were employed on a cost-plus-a-fixed-fee basis.

Construction progressed at a rapid rate during 1943. At most camps, machinery was kept in operation 22 hours a day by two shifts of 11 hours each. The pioneer roadway was of great assistance to the forces of the Public Roads Administration, and it is fair to state that the Alaska Highway could not have been completed in 1943 but for the work done on the pioneer road.

As construction proceeded, it became apparent that because of favorable changes in the strategic situation in the Pacific, it would be unnecessary to develop the highway to the high standard of improvement originally planned. Accordingly, progressive steps were taken by the War Department to restrict improvements and reduce construction standards wherever feasible.

A conference was held between representatives of the Chief of Engineers and the Public Roads Administration on March 25, 1943, at which revised standards of design were adopted. These changes in final specifications were issued by the Chief of Engineers. The estimated maximum pay load tonnage to which any one section of the highway would be subjected would not exceed 3,000 short tons per day. The specifications provided that the highway should be constructed to handle such tonnages at maximum speeds for military vehicles of 40 miles per hour. The maximum roadbed width was to be 26 feet between the outside shoulder lines, and surfacing material was to be placed within the roadbed to a width of 20 to 22 feet. Surfacing was to consist of selected local materials including gravel or crushed stone placed to whatever depth was necessary to support the estimated military traffic loads. Maximum grades were not to exceed 10 percent. Curvature and sight distance were to be generally controlled by the alinement and grade of the existing pioneer road with deviations therefrom only where necessary to permit free movement of the estimated volume of traffic. New bridges were to provide two lanes for traffic and have a clear width not in excess of 24 feet. Existing bridges of adequate capacity and durability were not to be replaced even though they were of less than two-lane width. The capacity of new timber bridges was to be H–15 and of new steel bridges, H–20. Construction was to be completed not later than December 31, 1943.

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Of the total equipment in use, 3,
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Principal accomplishments duri
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Grading	
Ballasting	
Surfacing	
Minor drainage	
Permanent bridges	

By the end of August 1943, cons
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Public Roads Administration co
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Unusually good progress was made by the Public Roads Administration contractors during the remainder of the 1943 season. At the peak of construction in September, the total labor force approximated 15,900 of which approximately 10,400 were United States contractor employees, 1,850 were Public Roads Administration employees, and 3,700 were employees of Canadian contractors. Minimum wages payable to United States labor were set by United States Department of Labor, to Canadian labor by the Western Labor Board of Canada, and were approximately equal to rates prevailing in Seattle for United States workers and Vancouver and Edmonton for Canadian workers.

At the peak of construction, 11,107 pieces of equipment were in use of which approximately 6,000 were units of heavy equipment. Of the total equipment in use, 3,983 pieces were contractor-owned and rented to Public Roads Administration and 7,124 pieces were Government-owned.

Principal accomplishments during the 1943 season included the following:

Grading	cubic yards	20, 000, 000
Ballasting	do	5, 400, 000
Surfacing	do	600, 000
Minor drainage	linear feet	250, 000
Permanent bridges	do	21, 000

By the end of August 1943, construction was over 70 percent complete; by the end of September, construction was over 80 percent complete. On October 31, 1943, the construction was 96 percent completed and Public Roads Administration's contractor forces ceased road construction activity as of that date. The construction work then remaining to be done consisted principally of the completion work on about 20 bridges to replace inadequate temporary structures. Bridge work continued under the supervision of the Public Roads engineers. Some of the contracts for uncompleted bridges were continued in force while others were assumed by the War Department. The War Department subsequently took over all construction and maintenance work. Such minor construction work as took place in 1944 and 1945 was by direct contracts. Maintenance work was by a civilian force under War Department supervision. Public Roads Administration Highway Engineer Francis C. Turner was loaned to the Army as consultant on maintenance.

Public Roads Administration contractors were assigned to the construction of the Haines lateral road during the winter of 1942–43 after a preliminary survey of the best possible route for the highway had been made by Public Roads Administration engineers.

A study was made during the winter of 1942–43 by Col. Theodore Wyman, Jr., division engineer, Northwest Service Command, who had over-all jurisdiction for the War Department at that time for the construction of both the Alaska Highway, the Haines Road, and collateral engineering projects in northwest Canada. As a result of this study Colonel Wyman concluded that Public Roads Administration contractors would be unable to complete both the Alaska Highway and the Haines Road during the 1943 construction season. Public Roads Administration contractors were directed to continue work throughout the winter on the Haines Road and then return to the Alaska Highway project in the spring of 1943. Colonel Wyman then