





Indian and
Northern Affairs

Affaires indiennes
et du Nord

**Issued under the authority of the Honourable J. Hugh Faulkner,
Minister of Indian and Northern Affairs**

Produced by the National Historic Parks and Sites Branch,
Parks Canada, and published by the Public Information Branch
Design Management: Eric Plummer
Design: Eiko Emori

Canadian Historic Sites: Occasional Papers in Archaeology and History
will be published as papers become available. Manuscripts may be sub-
mitted to Chief, Research Division, National Historic Parks and Sites
Branch, Parks Canada, Indian and Northern Affairs, Ottawa, Ontario
K1A 0H4, Canada.

Articles appearing in this series are abstracted and indexed in *Historical
Abstracts* and/or *America: History and Life*.

5 **Yukon Transportation: A History,**

by Gordon Bennett

Canadian Historic Sites:
Occasional Papers in Archaeology and History
No. 19

National Historic Parks and Sites Branch
Parks Canada
Indian and Northern Affairs
Ottawa, 1978

Cover: Front: Driving the last spike, White Pass and Yukon Route railway, Carcross, Yukon, 29 July 1900. Back: The White Pass and Yukon Route railway under construction on the Alaska side of the international boundary. (Details from mural by Roy M. Minter and Charles Baker; courtesy Roy M. Minter and Charles Baker.)

© Minister of Supply and Services Canada 1978.
Available by mail from Printing and Publishing, Supply and Services
Canada, Hull, Quebec K1A 0S9, or through your bookseller.

En français ce numéro s'intitule *Lieux historiques canadiens: Cahiers
d'archéologie et d'histoire*, n° 19 (n° de catalogue R61-2/1-19F). En
vente chez son libraire ou, par la poste, à: Imprimerie et édition, Ap-
provisionnements et services Canada, Hull, Quebec K1A 0S9.

Catalogue No.: R61-2/1-19
ISBN: 0-660-01671-0
Library of Congress Catalogue Card No.: 70-103875
QS-7024-000-EE-A1

Price Canada: \$6.50
Price other countries: \$7.80
Price subject to change without notice.

Yukon Transportation: A History

by Gordon Bennett

Canadian Historic Sites
No. 19

7	Abstract
7	Acknowledgements
8	Introduction
8	The Pattern Emerges
24	The Great Stampede
59	Recession and Recovery
94	Between the Wars
126	The Military Legacy
141	The Dawning of a New Era
149	Epilogue
151	Endnotes
167	Bibliography

Frontispiece: Spring break-up on the Yukon River. (Frederick Whymper, Travel and Adventure in the Territory of Alaska [London: John Murray, 1868], facing p. 197.)



Abstract

This paper examines the development of the Yukon transportation system from the early 1840s to the 1960s within the context of contemporary economic conditions. It describes the limitations imposed by geography on the economic development of the Yukon as well as those development problems peculiar to regions that are dependent on the exploitation of nonrenewable resources, and explores the extent to which transportation has provided solutions to these problems. It also discusses the roles played by individuals, companies and governments in the development of various forms of transportation and various traffic routes.

Submitted for publication 1972, by Gordon Bennett, National Historic Parks and Sites Branch, Ottawa.

Acknowledgements

The author wishes to express his sincere appreciation to the following individuals for their assistance: Roy Minter, for his interest, enthusiasm and comments; Victoria A.B. Faulkner and Don Jones of Whitehorse, who kindly permitted the author lengthy interviews in 1970; Margaret Carter, Margaret Archibald and Edward Bush, co-workers and fellow prospectors in the field of Yukon history, and the staffs of the library of the Department of Indian and Northern Affairs and the Public Archives of Canada, especially James Whalen, Brian Hallett, Gerry Cumming and Brian Corbett.

The author also wishes to thank The Canadian Publishers, McClelland and Stewart Limited, Toronto, for permission to reprint excerpts from Laura Beatrice Berton's *I Married the Klondike*, and Pierre Berton's *Klondike. The Life and Death of the Last Great Gold Rush*.

In the four years since this manuscript was written for the department, and as a result of the author's subsequent participation in the SS *Klondike* restoration project, a great deal of additional material has been collected on the history of Yukon transportation, particularly on the subject of Yukon navigation. While it was impossible to incorporate the major findings of this research into the present manuscript, the opportunity afforded by a delay in publication has enabled the author to make minor revisions in the original manuscript and to include much pictorial material that was acquired after 1972. Thus, while the following individuals and institutions were not directly involved in the initial research and preparation of this report, the author gratefully acknowledges their contribution: Brian Speirs, Dianne Johnston and Linda Johnston, Yukon Archives, Whitehorse; Len McCann, Maritime Museum, Vancouver; Captains William Bromley, Alex Courquin and Cy Andrews; Charles Chapman, Allan Innes-Taylor, Al Olsen, Bill Maruk, Howard Perchie, Mark Steinback, W.D. Gordon, Jr., R.C. Beaumont, Bill Lesyk, Syd Smith, Bill Crawford, Cyril Doheny, William Bamford, Russell Kingston, R. Greenius, J. Dunn, Sid White, Jack Forde, Andy Keay, Jim Moran, Harold Nicholson and Claude Hogg.

Introduction

From the inception of the fur trade in the early 1840s to the present predominance of base-metal mining, the Yukon economy has depended on the exploitation of a staple resource. The extent of this dependence has been exaggerated because, unlike other more familiar staple-producing regions, the absence of arable land precluded a comprehensive subsistence economy. Given the relationship between staple economies and transportation as well as the Yukon's traditional isolation from metropolitan centres, it is hardly surprising that the demand for transportation in the Yukon has always been intense.¹

The primary importance of transportation has long been appreciated by observers of the northern scene.² One writer has even gone so far as to assert that "the whole history of the North has been bound up with the solution of the transportation problem."³ Even during the precontact period, when hunting and fishing comprised the sole forms of economic activity, the quality of native life was in large part determined by transportation.

This study will primarily be concerned with the history of transportation routes and forms as they evolved in the Yukon Territory. As Harold Adams Innis suggested in 1938, however, the study of transportation can have a much broader application, impinging on the great questions of social and political life as surely as on the problems of national economy.⁴ It is hoped that this paper will demonstrate that transportation routes and forms not only functioned as carriers of men and materials, but also played a critical role in defining the nature and course of development of the territory.

The Pattern Emerges

I

The Yukon is a land of paradox: richly endowed and barren, enticing and forbidding. To some it conjures visions of treasure untapped, a promise unfulfilled and a future still to be realized; to others it symbolizes nothing more than the "land that God gave Cain." Ironically, neither view is without validity, for what nature bestowed in munificence, geography conspired to make inaccessible.

Situated in the northwest corner of North America and separated by an ice-packed ocean, two seas and a difficult overland and river route from Europe, the Yukon remained untouched by European expansion until the mid-19th century. Surrounded by a series of geographical barriers: the St. Elias Mountains and the northern Cordilleras on the southwest, the Cassiar and Rocky mountains to the south, the Mackenzie Mountains on the east and the Arctic Ocean to the north, the Yukon presented a formidable prospect. For centuries these natural obstacles effectively precluded immigration to the interior. Only the Yukon River, which rises 15 miles from the Pacific Ocean in northern British Columbia and runs two thousand miles through the Yukon and Alaska to the Bering Sea, offered relatively easy entry; yet even this fissure was a grudging concession, for the climate ensured that the river would be closed to navigation for almost eight months of the year and semiaridity helped to ensure that the river would always be shallow during the open season of navigation. The low temperatures and light precipitation were to make husbandry unfeasible. Finally, most of the region escaped the scourge of glaciation, a fact that for centuries preserved the ramparts and protected the resources from man.

II

The white man was not the first to pierce the Yukon's natural defences. The Indian preceded him by thousands of years, by way of the land bridge that then permitted migration across the Bering Strait.¹ Little is known of these Indians and their way of life before the arrival of the whites. After contact had been established, native culture was evaluated from a technological perspective and judged primitive. "Civilization," as understood by the early explorers and traders at least, was unknown to the Indian. While it is undeniable that the apparent simplicity of native culture was in some measure shaped by geography and climate, these factors were not primary for the white man ultimately shared the same region under the same conditions and, if his culture was at best that of the frontier, it was nonetheless technologically more advanced.

1, 2 Two types of canoes employed by Indians of the Fort Selkirk area.
(Frederick Schwatka, *Along Alaska's Great River* [New York: Cassell & Company (1885)], pp. 221, 253.)



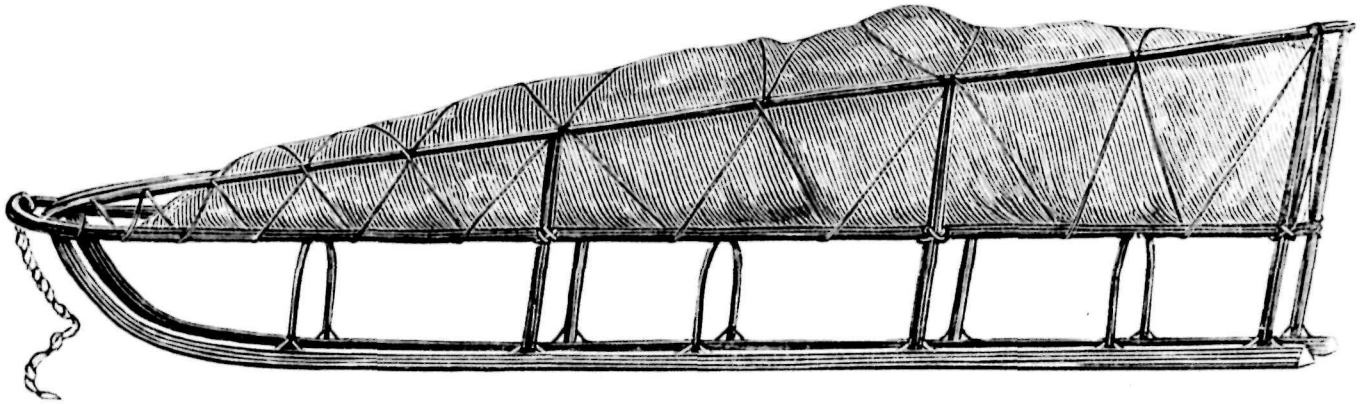
3 A sled used by the Indians of the lower Yukon River. (W.H. Dall, *The Yukon Territory* [London: Downey, 1898], p. 166.)

4, 5 Various types of northern snowshoes. 4, A is an Eskimo or Inuit type. Except for the interstices and flat surface, it is similar in design and size to B, the Hudson's Bay Company snowshoe. C and D, approximately twice as long as A and B, were used by the In-

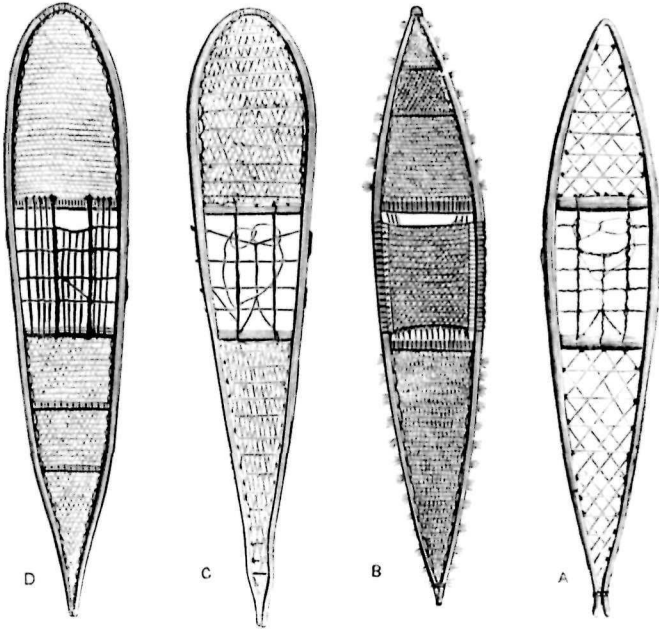
galik and Kutchin Indians respectively, of the lower Yukon. (W.H. Dall, *The Yukon Territory* [London: Downey, 1898], p. 190.) 5, The broader of the two Chilkat snowshoes was used for packing supplies; the narrower, for hunting. (Frederick Schwatka, *Along*

Alaska's Great River [New York: Cassel & Company (1885)], p. 87.)

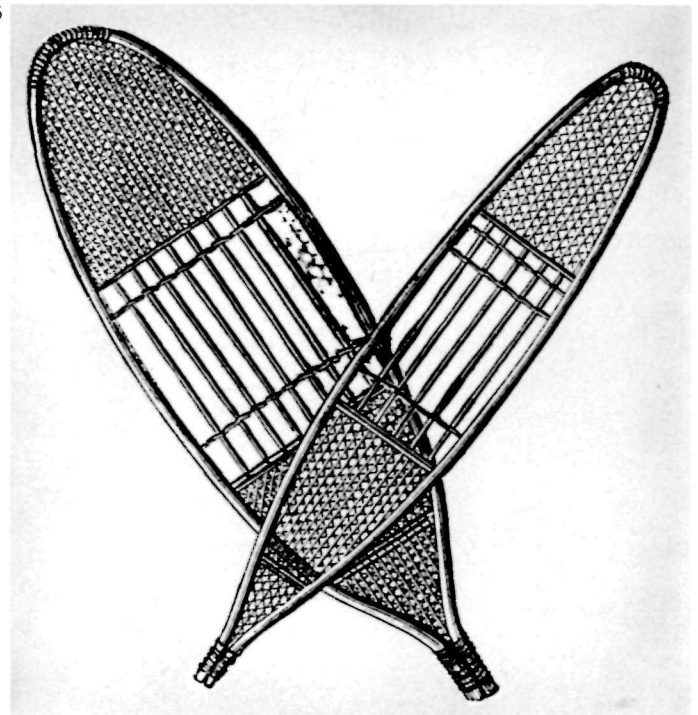
3



4



5



What distinguished the culture of the Russian and the European in the North from that of the indigenous peoples were certain values on the one hand and on the other the existence of a transportation *system* which made possible provisioning and supply, as well as communication, with the outside.

The distinction between a transportation system and the modes of transportation is important. A comparison of the forms of transportation used by both the Indians and the whites in the Yukon, at least until the introduction of steamboats on the Yukon River, reveals that both were similar. Like the whites, the Indians were dependent on the river during the summer months. With bark canoes, which provided the principal means of travel, the Indians enjoyed sufficient mobility to sustain their existence. Built by the women of each tribe, who stretched the bark over wooden frames and pitched the joints to make them waterproof, these canoes were propelled by either paddles or a pole.² In winter transportation was by dog sled, toboggan or snowshoe. The sleds and toboggans were made of birch, the various components being lashed together with leather thongs. No nails or wooden pegs were used. The sleds were fitted with thin, broad runners designed to bend with the declivities of the snow. The runners, in turn, were shod with a thin veneer of bone and iced to reduce surface friction. The Indian sleds were light and fast and capable of carrying heavy loads over smooth ice. To assist the dogs pulling the sleds, the Indians generally preceded them and broke trail with their snowshoes.³

The climate established a seasonal pattern of transportation in the Yukon characterized by the alternating use of water and overland forms of travel that was to persist until the early 1950s. The effects of this dependence on the climate and the rhythm to existence which it produced were to have a marked influence on the history of the area.

III

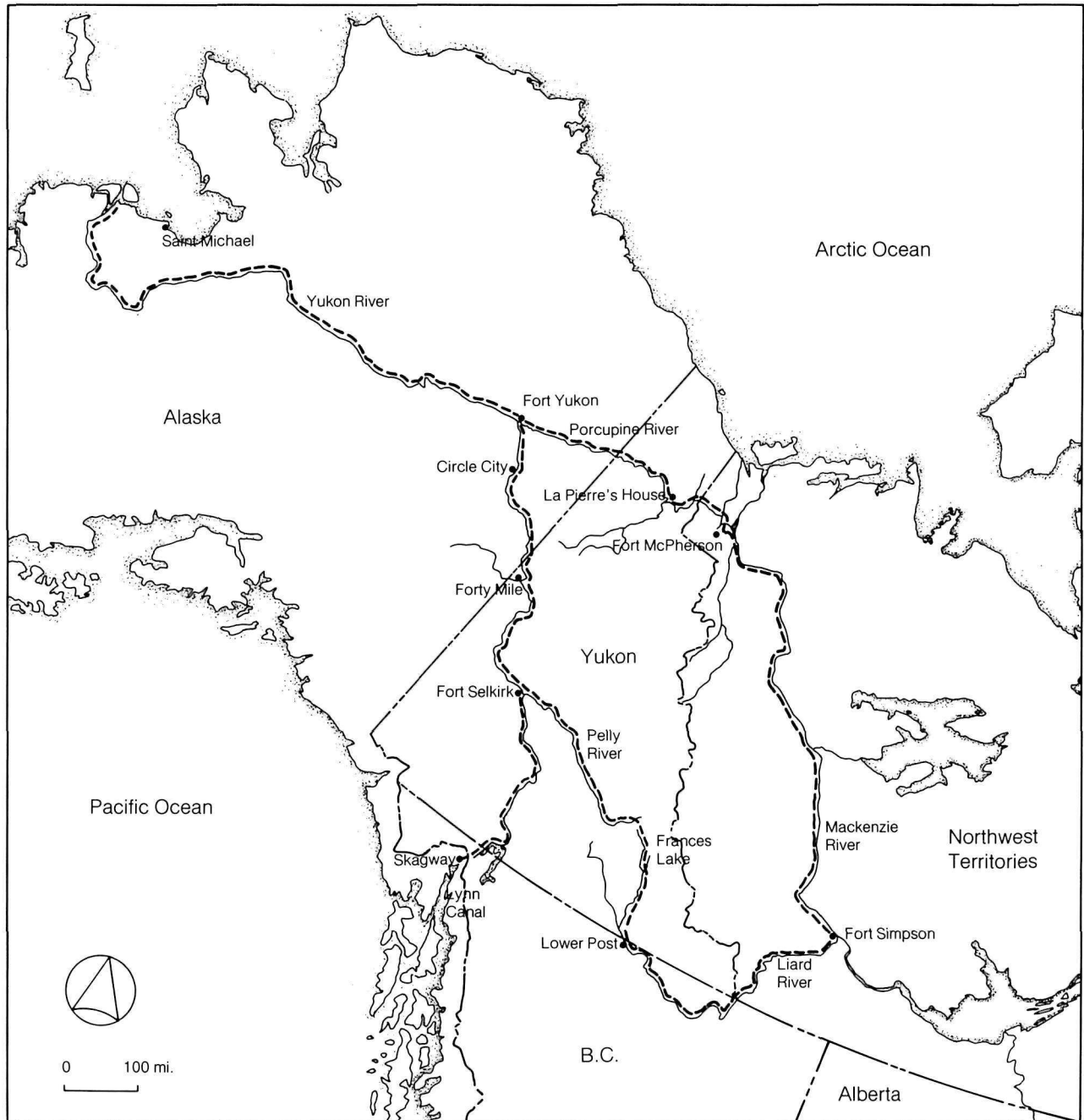
The first whites to enter Alaska were the Russians. Though they never pushed far enough into the interior to cross the boundary that separated the Yukon from Alaska,⁴ they did establish a gateway to the Yukon which was to be of vital importance throughout the 19th century. That gateway was the Yukon River, via the port of Saint Michael, 70 miles north of the mouth of the Yukon. The Russians came in search of furs and in the process established a commercial empire in Alaska with a feudal society.⁵ The Russian monopoly went unchallenged until the late 1830s and the 1840s when the Hudson's Bay Company, pursuing a policy of westward expansion after their union with the North West Company in 1821 and making use of a series of posts on the Mackenzie River,

broke through the barriers which had theretofore isolated the Yukon from British commerce.

The fur trade, the magnet which drew the white men into the Northwest, hinged on two factors: the existence of fur-bearing animals and a network of water routes for transportation. The dependence of the fur trade on the water routes was critical since these routes made the Hudson Bay Company's penetration possible and prospective trading-post sites were chosen "largely on the requirements of water transportation." Dependence on water travel survived long after the Company had withdrawn from the Yukon; in fact, it characterized transportation in the Yukon until the 1950s when the last sternwheeler on the Yukon River was finally beached.

The Hudson's Bay Company broke through the natural barriers that separated the Yukon from the Mackenzie District in a pincer movement, using the Mackenzie River as the source for all exploration west. In 1840 Robert Campbell was commissioned by the Company "to explore the north branch of the Liard to its source and to cross the height-of-land in search of any river flowing to the westward."⁷ In May of the same year, Campbell and a party of seven set out from Fort Halkett on the Liard and followed that river to its junction with the Dease. From there Campbell swung north to Frances River and on to a mountain lake, which he named Frances in honour of Lady Simpson. Beyond the lake he entered the Finlayson River, reached Finlayson Lake and portaged to another river which he called the Pelly, after the governor of the Hudson's Bay Company. He then retraced his movements and re-joined the main party at Finlayson Lake.⁸ Two years later, in 1842, Campbell established the first Hudson's Bay Company post in the Yukon at Frances Lake.⁹ During the next six years Campbell opened up the southeastern section of the Yukon for the Company, establishing another site at Pelly Banks, and explored the Pelly, Lewes and Yukon rivers. In 1848 he built Fort Selkirk at the confluence of the Yukon and the Pelly.¹⁰

In the meantime, traders of the Company had been active in extending the trade to the northern portion of the Yukon using the Porcupine River. John Bell, a chief trader, who had built Fort McPherson in the North West Territory in 1840, discovered the Rat River and explored the Porcupine to its mouth in 1842. In 1847 Alexander Murray was commissioned to establish a post at the confluence of the Porcupine and the Yukon. Leaving Fort McPherson in July of 1847, he proceeded to La Pierre's House where he embarked in the *Pioneer* to the mouth of the Porcupine. At the mouth of the latter river he selected a site for a trading post and built Fort Yukon.¹¹ Though located in Russian America (later Alaska) just a few miles to the west of British territory, the com-



7 Fort Yukon, June 1867. The fort stockade, not shown, was later used as fuel for steamers on the Yukon. (W.H. Dall, *The Yukon Territory* [London: Downey, 1898], facing p. 103.)



mercial advantage of locating at the junction of the Porcupine and the Yukon outweighed diplomatic considerations in this remote area and Fort Yukon become the focal point for the Company's dealings in the northern Yukon.

By 1847 the Hudson's Bay Company had established two water routes to the Yukon from the Mackenzie River. In 1851 Robert Campbell made his historic trip from Fort Selkirk down the Yukon River to Fort Yukon, thereby establishing that the Yukon and the Pelly were on the same watercourse.¹² This discovery was of great significance. Posts in the southern Yukon had always been difficult to provision owing to dangerous travelling conditions on the Liard. With the discovery that the Pelly and the Yukon were on the same watercourse, the Liard route was abandoned in favour of the Porcupine.¹³ From 1852 until 1869, when the Hudson's Bay Company was expelled from Fort Yukon by the United States government, the Porcupine was the main gateway to the Yukon interior.¹⁴

The pursuit of the fur trade in the Yukon by the Hudson's Bay Company was at best a marginal enterprise. The limitations of the transportation system and the resulting high costs were factors that the Company was never able to overcome. These difficulties were exacerbated by the Indians' hostility to white incursion, a prime example of which was the destruction of Fort Selkirk by the Chilkats in 1852. However, occasional manifestations of open hostility by the Indians was secondary and in the case of Fort Selkirk, possibly a consequence of the inadequacy of a transportation system that made it difficult to supply the fort and which only served to entice the Chilkats to take strong measures to regain their historic monopoly over the trade of the southern interior. Within the Company itself there had been a continuing debate over the profitability of the Yukon trade. In arguing for the abandonment of the southern posts, one chief factor noted that losses were incurred from 1848 to 1850 at the Frances Lake, Pelly Banks and Fort Selkirk posts and that during its last year of operation (1851) Fort Selkirk showed a loss again.¹⁵

An examination of the transportation problems that plagued the Hudson's Bay Company illustrates the impossibility of conducting the Yukon fur trade on a profitable basis from the East. According to Innis, sleds employed by the Company in the Yukon were smaller than those used elsewhere with the result that furs had to be packed in smaller bundles.¹⁶ The isolation of the Yukon posts made provisioning difficult and response to changing Indian trade demands almost impossible. George M. Dawson, chief dominion geologist, later noted that it had taken seven years for the returns from Forts Yukon and Selkirk to reach the market. The course of trade was as follows:

*Goods. – 1st year, reach York Factory; 2nd year, Norway House; 3rd year, Peel River, and were hauled during the winter across the mountains to La Pierre's House; 4th year, reach Fort Yukon. Returns. – 5th year, reach La Pierre's House and are hauled across to Peel River; 6th year, reach depot at Fort Simpson; 7th year, reach market.*¹⁷

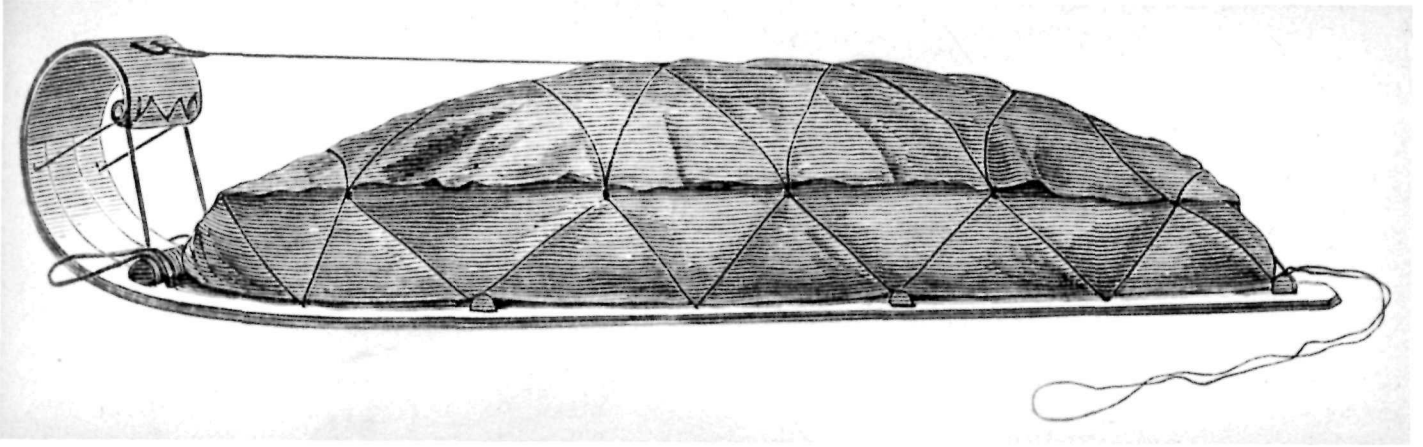
As a result, the Company was forced to restrict the Yukon trade to furs of high value, a fact which adversely affected its competitive position with the Russians.¹⁸

With the expulsion of the Hudson's Bay Company from Fort Yukon in 1869, a phase of transportation history in the Yukon closed. During this phase two river routes had been opened up to the Yukon interior. Neither was to be of lasting significance. The very nature of the fur trade as practised by the Hudson's Bay Company discouraged settlement and with it the introduction of more highly developed transportation forms.¹⁹ The Company had employed the same conveyances as the natives, with minor modifications. Of these the "Hudson Bay Sled" and snowshoe were the most important. The former was, in fact, a toboggan nine feet long made from three birch planks held together by crosspieces. The load was carried in a large moose-skin bag lashed to the sled. The toboggan style was adopted because it was more suitable for carrying heavy loads than the conventional sled. Nevertheless, this adaptation in favour of carrying capacity necessitated the sacrifice of several useful features common to the more conventional style of sled. As a result, the Hudson Bay sled was hard to guide, difficult to take up a hill and practically impossible to keep on the trail when travelling along a hillside. Because the floor of the sled rode close to the surface, the load was subject to water and snow damage. Progress was slow unless travelling over hard-packed snow. With this in mind, the Company designed a special snowshoe for trail use. This snowshoe had a packing effect which facilitated the movement of the sled. The Hudson Bay snowshoe was small, 30 inches being the regulation length. It was pointed at both ends, the front being curved upward and fitted with a knob to break the crust. For other types of winter activity such as hunting, the traders used a larger snowshoe modelled after the "Kutchin" Indian style.²⁰ Only at Fort Yukon, where two boats, 30 feet 8 inches long with 9-foot beams, were built in 1848, was any attempt made to introduce boats and these were limited to the movement of goods on the Porcupine River to La Pierre's House.²¹

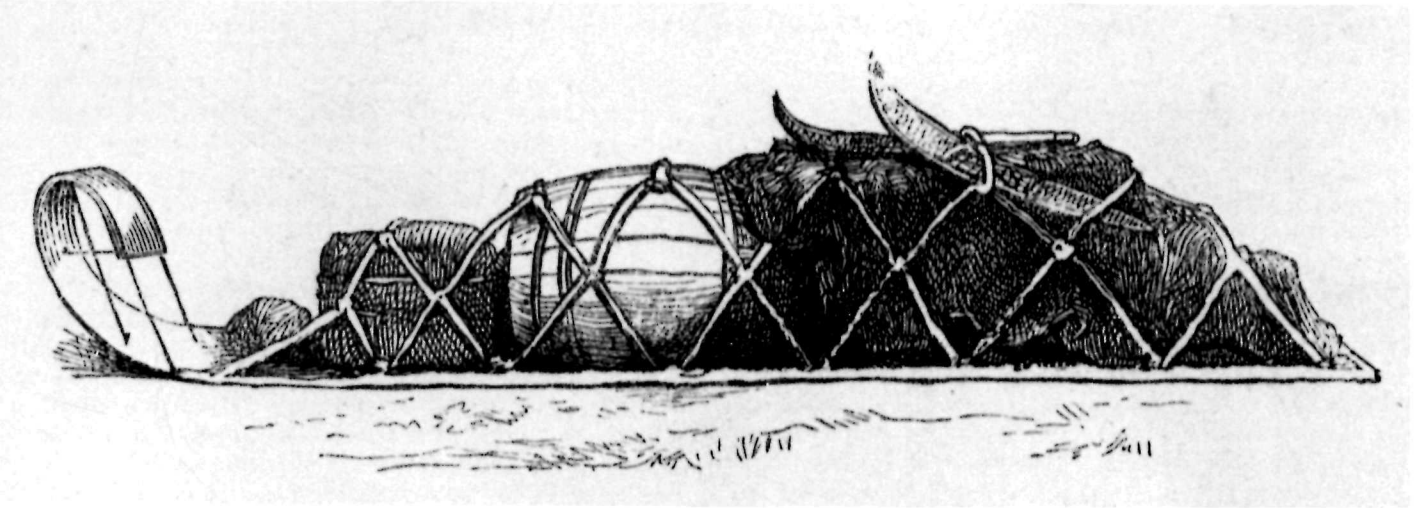
8, 9 Two versions of a Hudson's Bay Company sled. Figure 8 appears to be a more accurate rendering of the sled. (W.H. Dall, *The Yukon Territory* [London: Downey, 1898], p. 165; Frederick Whympere, *Travel and Adventure*

in the Territory of Alaska [London: John Murray, 1868], p. 230.)

8



9



10 Saint Michael, Alaska, circa 1865. Located 70 miles from the mouth of the Yukon, Saint Michael afforded the closest harbour for ocean-going ships. Supplies were then transferred to river boats and conveyed up the Yukon Riv-

er. (W.H. Dall, *The Yukon Territory* [London: Downey, 1898], facing p. 11.)

11 The mouth of the Yukon River, gateway to Alaska and the Yukon. (Frederick Whympere, *Travel and Adventure in the Territory of Alaska* [London: John Murray, 1868], facing p. 164.)

10



11



IV

In 1867 the United States purchased Alaska from Russia. While most Americans tended to regard Alaska in much the same way as Voltaire had regarded New France,²² one enterprising group of traders turned its attention to the new American possession. The San Francisco firm of Hutchinson, Kohl and Company, drawn to the Northwest by the Pribiloff seal fishery, acquired the Russian trading posts and boats in the territory. In 1868 the firm filed articles of incorporation creating the Alaska Commercial Company.²³ With the virtual withdrawal of the Hudson's Bay Company from the Yukon in 1869, the Alaska Commercial Company extended its interests to include the fur trade of the interior and quickly established a commercial monopoly over a region which included not only Alaska, but also the Yukon itself. Until 1894 when Inspector Charles Constantine of the North-West Mounted Police was dispatched to the Fortymile district, the history of the Yukon and Alaska can be said to have been virtually identical.

This period of Yukon history was characterized by two forms of economic activity – fur trading and prospecting. With each passing year, however, prospecting became the more important of the two. The Alaska Commercial Company retained its interest in the fur trade, but the trapping was done by Indians or prospectors who sought to supplement the small returns from their diggings. Unlike the Hudson's Bay Company experience, the two forms of economic activity proved to be relatively complementary under the aegis of the Alaska Commercial Company.

The establishment of the Alaska Commercial Company in Alaska and the Yukon led to the abandonment of the old Hudson's Bay Company trade routes. After 1867 the principal gateway to the Yukon interior was the Yukon River via Saint Michael. The adoption of the old Russian trade route after 1867 had a profound effect on the development of transportation in the Yukon. It not only involved a significant change in access, but also made possible the introduction of steam-powered vessels – the first major technological innovation in the transportation history of the Yukon.²⁴

The first steamboat on the Yukon River was the *Wilder*, a small craft employed by the Russian-American Telegraph Company.²⁵ W.H. Dall, an American explorer, likened the vessel to an old-fashioned flatiron and remarked that it was "just about as valuable for the purpose required. Unable to tow anything, or to carry any freight, while in a breeze of any strength it was no easy matter to steer," the *Wilder* can hardly be said to have marked an auspicious debut for a form of transport that was to dominate Yukon transportation for almost a century.²⁶

Regular river service was introduced in 1869 when the Alaska Commercial Company launched the sternwheeler *Yukon* and augmented two years later with the launching of the Western Fur and Trading Company's *St. Michael*. Both were small craft, 70 to 80 feet in length, 14 to 20 feet in width, with a draft of 3 to 4 feet. Fitted with powerful wood-burning engines, each boat was designed to push a barge when necessary, each barge having a maximum capacity of ten tons. The Canadian surveyor William Ogilvie, who had been commissioned to establish the 141st meridian for boundary purposes and who was to later enjoy a conspicuous place in the history of the gold rush, wrote that the *Yukon* "could make a round trip from St. Michael to any point in the vicinity of the boundary line in about a month, the upstream time being twenty days." In 1871 the *Yukon* went up the river as far as Fort Selkirk. Until 1898 when sternwheelers began to run on the upper, or Bennett-Dawson, section of the Yukon River, no sternwheeler ever went above the site of Campbell's old trading post.²⁷

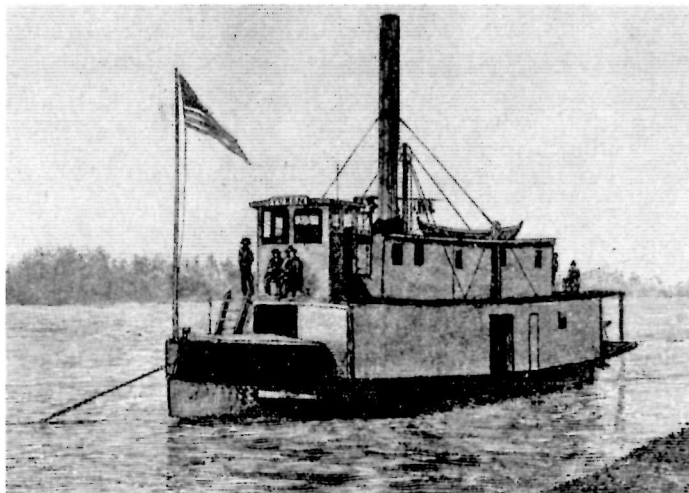
It was the fur trade that had lured the Alaska Commercial Company to the Northwest. By the early 1870s, however, a new interest was generated which was to overwhelm the trade in furs and almost totally replace it.²⁸ This new interest was gold.

The discovery of gold in California in 1848 precipitated a stampede to the West Coast the following year. After the first burst of activity in the California gold fields had passed and as individual mining methods were steadily superseded by more advanced forms of mining technology, the majority of those who had set out for the West Coast settled down to the less romantic but profitable pursuit of settling California. The rush to California had given birth to a breed of men, however, to whom the search for gold was to become a lifelong obsession. Beginning in the early 1850s, these men rushed to every new gold camp, only to abandon it when news of another discovery reached them.

By the 1860s the trail of gold camps had led to the Cariboo district in British Columbia.²⁹ The expansion of gold-mining activity in the West, beginning in California and culminating in the Cariboo, had followed a roughly northern course. This pattern of expansion suggested to some of the more speculative prospectors that there might be a belt of gold running north to south on the western lip of the hemisphere that had its source somewhere in the Yukon or Alaska. In the early 1870s these men began to trickle into the Yukon to test their hypothesis.

Of these men, four stand out as major figures in the history of the Yukon: Leroy Napoleon "Jack" McQuesten, Al Mayo, Arthur Harper and Joseph Ladue. McQuesten, Mayo and Harper reached the north in 1873 via Fort Yukon and the Porcupine Riv-

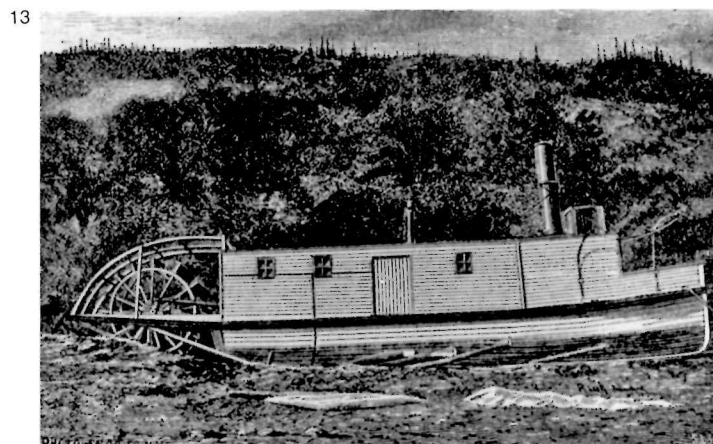
12 The Alaska Commercial Company steamer Yukon. (*U.S. Army. Department of the Columbia, Report of a Military Reconnaissance in Alaska, Made in 1883, by Frederick Schwatka* [Washington, D.C.: GPO, 1885], p. 44.)



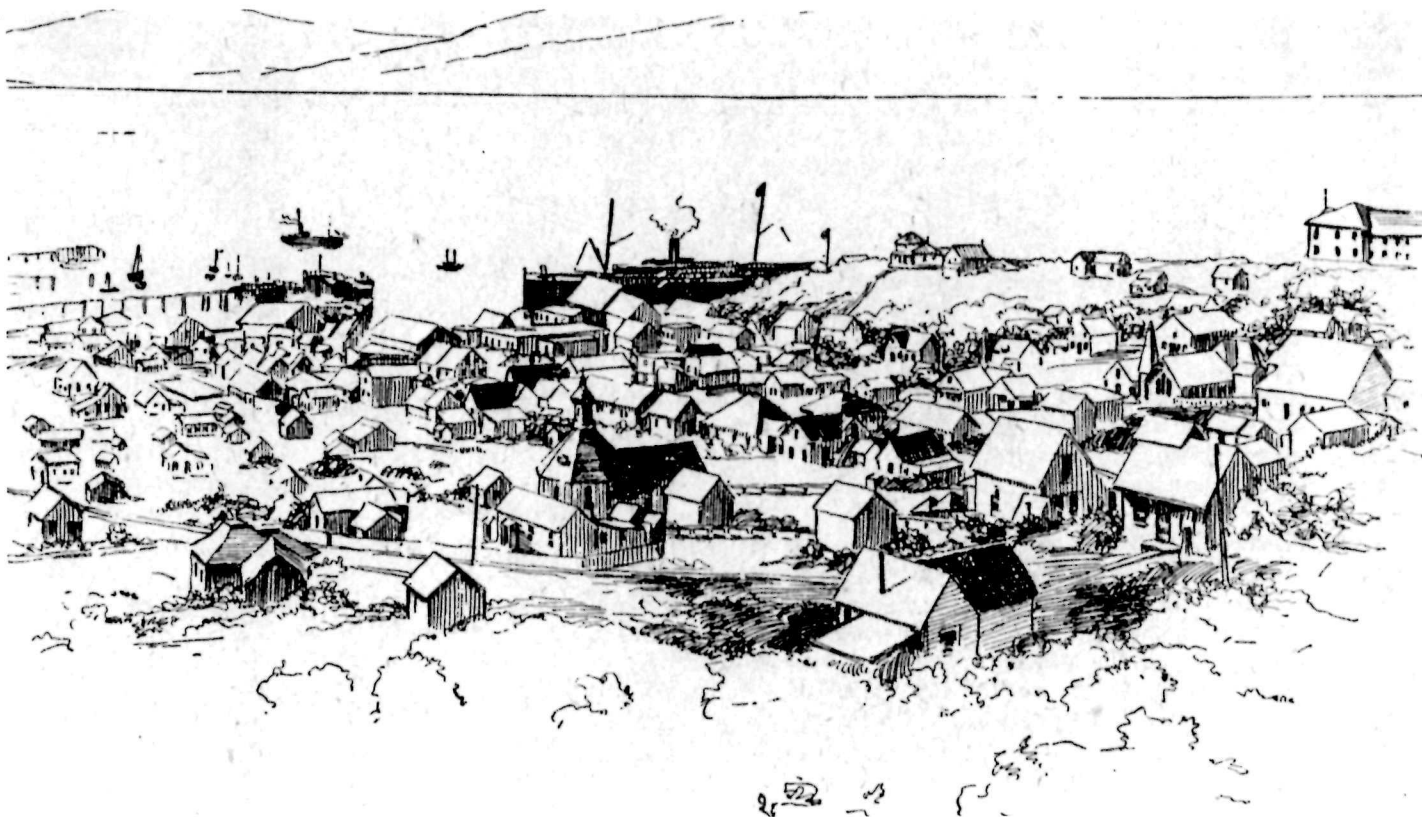
13 The SS St. Michael, grounded on a bar near Fort Yukon. Owned originally by the short-lived Western Fur and Trading Company (also referred to as the Northern Trading Company), the St. Michael was subsequently taken over by the Alaska Commercial Company.

(*U.S. Army. Department of the Columbia, Report of a Military Reconnaissance in Alaska, Made in 1883, by Frederick Schwatka* [Washington, D.C.: GPO, 1885], p. 43.)

14 Juneau, Alaska. Before the Klondike gold rush, Juneau was the main outfitting port for prospectors bound for the Yukon via the Chilkoot Trail. It was the last port-of-call for vessels running up the Inside Passage and the place where prospectors arranged for trans-



14



er. In 1874 they entered the employ of the Alaska Commercial Company.³⁰ During the next 20 years they opened trading posts, prospected, and assisted other prospectors throughout the territory with supplies, credit, transportation and advice. Joseph Ladd joined them in 1882.

It might be said of each of these men that they were frustrated miners. None of them ever discovered the gold that had drawn them north, but they were not failures. Without them, as Pierre Berton has appropriately written, "the series of events that led to the Klondike discovery would not have been possible. Without the string of posts they set up along the Yukon, the systematic exploration of the river country could not have taken place."³¹ This string of posts, moreover, furnished a framework for the first internal transportation network in the Yukon.

Excepting the major innovation in navigation that took place in the late 1860s, no significant change in the Yukon transportation system occurred until the early 1880s when a new route to the Yukon was opened up. Located at the head of Lynn Canal, this new gateway originated at Dyea, led over the Chilkoot Pass to the mountain-fed lakes in northwestern British Columbia and down the Yukon River. For years the Chilkat Indians had guarded the pass, denying the white man access in order to protect their trading monopoly with the Indians of the interior.³² In 1878 a prospector by the name of George Holt used the pass and is generally recognized to have been the first white man to successfully deny the Indian interdict.³³ Two years later the pass was opened to all when the USS *Jamestown* used gunboat diplomacy to "persuade" the chief of the Chilkat Indians to allow free access to it. From 1881 the Chilkoot Pass became the main portal used by miners going into the Yukon.³⁴

Movement over the Chilkoot Pass was difficult, the trail being a veritable obstacle course. The path over the summit, steep and rock-strewn, made it impossible to use pack animals for the through journey between Lynn Canal and the lakes on the other side.³⁵ The Chilkat Indians, no longer able to restrain the whites from using the pass, turned the situation to their own advantage by taking up the profitable pursuit of packing prospectors' supplies over the summit.³⁶

With the discoveries of gold along the bars of the Stewart River in 1886 and on the Fortymile in 1887, the influx of miners into the region increased in intensity. As a result, a pattern that had begun to emerge as early as 1882, when prospectors first began to use the Chilkoot Trail, was established by 1887. This pattern was to persist with only slight modification up to and including the gold rush of 1898.

There has been an unfortunate tendency to associate everything pertaining to the Klondike gold rush with having been a product of it. Nowhere has this tendency been more misleading than in the history of the development of transportation in the Yukon. A cursory examination of what took place during the 1880s, with specific reference to the Lynn Canal gateway to the interior, reveals that the main outlines of the gold-rush transportation system had been laid long before 1897–98.

In 1886 a trading post was built on the tidal flats at Dyea by John J. Healy. Here the prospectors debarked from steamers which had carried them up the Inside, or Inland, Passage, purchased their supplies and made arrangements with Healy for the packing of their possessions over the trail. Thus the first organized economic enterprise to serve miners going into the Yukon from the Alaska Panhandle predated the gold rush by 12 years. By 1887 Sheep Camp, three-quarters of the way up the Dyea trail, had been established as the main stopping-off point on the coastal side of the pass, just as it was to be during the gold rush.³⁷ As early as 1887, prospectors were whipsawing timber and building boats at Bennett Lake for the trip down the Yukon River and William Ogilvie's observation, made in the same year, that the supply of lumber for boat building had become practically exhausted suggests that this had been going on for some time.³⁸ The tent city of thousands that ringed the southern bank of Bennett Lake in the spring of 1898 may have shocked the newspapermen who were despatched by their publishers to report on the Klondike phenomenon, but to those who had been in the Yukon for some years it was only the culmination – surprising in its extent to be sure – of a process that had begun at least ten years earlier.

In retrospect, the 1880s stand out as a decade of great progress in laying the framework of the gold-rush transportation system. For the first time accurate information was accumulated concerning transportation routes as a result of the explorations of Frederick Schwatka, an American army officer, and Canadians George M. Dawson and William Ogilvie.³⁹ A portage road, replete with rollways and windlasses to transfer boats, was built in 1887 on the east bank of the Yukon River across from the present townsite of Whitehorse to bypass the Whitehorse Rapids.⁴⁰ In the same year, Dawson notified the minister of the Interior that Edward Bean had obtained permission from the United States government to build a road over the White Pass, some six miles east of the Chilkoot, and reported the rumour that a railroad was to be built over the Chilkoot.⁴¹ Although Bean had petitioned the secretary of the Interior for a franchise to construct a trail over the White Pass, his request had been refused on the grounds that

15 Near Dyea, Alaska, the southern terminus of the Chilkoot Trail, in the early 1880s. (*Frederick Schwatka, Along Alaska's Great River [New York: Cassell & Company (1885)], p. 65.*)

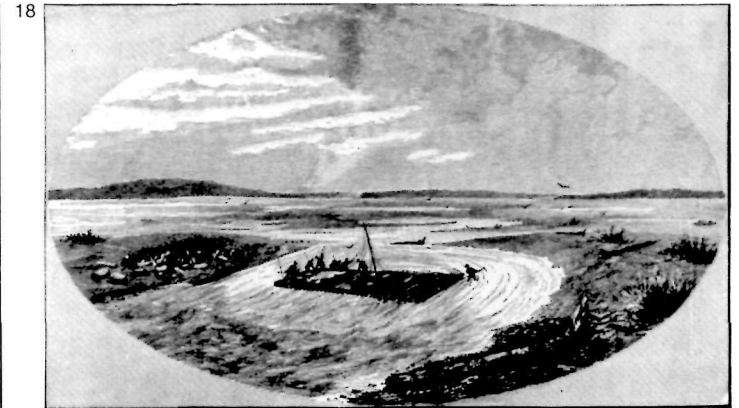


16 An artist's impression of the Chilkoot Pass (Schwatka's Perrier Pass) 14 years before the great stampede. Schwatka named many of the geographical features on the Chilkoot and upper Yukon. (*Frederick Schwatka,*

Along Alaska's Great River [New York: Cassell & Company (1885)], p. 85.)



17, 18 Navigation problems on the upper Yukon River. 17, A raft negotiating sweepers (trees or brush dislodged by riverbank erosion). 18, Running aground was much more common and often meant long hours of unloading, easing the craft off the bar and reload-



ing before once more getting under way. (*Frederick Schwatka, Along Alaska's Great River* [New York: Cassell & Company (1885)], pp. 134, 145.)

19 The raft which carried U.S. Army lieutenant Frederick Schwatka and party from the headwaters of the Yukon to central Alaska in 1883. (*Frederick Schwatka, Along Alaska's Great River* [New York: Cassell & Company (1885)], p. 311.)

19



Congress was the only body empowered to grant franchises. Bean was not the last person to seriously contemplate a trail over the White Pass before the gold rush. At least two more unsuccessful applications for a franchise were made, one in 1888, the other by William Moore in 1891.⁴²

While none of these schemes bore fruit, they do suggest that the pre-gold-rush Yukon showed enough economic potential to justify speculative consideration being given to substantial improvements to the transportation system. Furthermore, they suggest that ambitious transportation schemes were not simply products of gold-rush hysteria. While it is important to bear in mind that charter and/or franchise applications do not necessarily prove serious intent on the part of the applicant, it should be noted that governments, not individuals, were the usual risk takers in the construction of “development” roads during the 19th century and that the absence of legislation providing for a franchise – and to an even greater extent the corollary subsidy – may well have been a factor in postponing a series of schemes that was economically premature.⁴³

To serve the ever-growing human influx, sternwheeler operations on the lower river were expanded. In 1883 a small sternwheeler, the *New Racket*, was constructed. The Alaska Commercial Company built the *Arctic*, one of the first of the larger boats on the lower river (140 feet long, 28 feet wide, with a 6-foot hull), in 1889 and it, like its predecessors, made the Saint Michael-Fort Selkirk run.⁴⁴

In 1892 the monopoly of the Alaska Commercial Company was broken with the formation of the North American Transportation and Trading Company, a Chicago-based firm with its Yukon headquarters at Cudahy. An immediate result was a reduction in prices and the supplying of better goods by both companies.⁴⁵ Another significant consequence was the North American Transportation and Trading Company’s decision to go into the navigation business. The *Portus B. Weare*, the first of the company’s sternwheelers, was placed in service in 1892. A short time later the *John J. Healy* followed. Responding to the challenge of its new competitor and to the needs of the growing northern population, the Alaska Commercial Company added the *Alice* (1895) and the *Bella* (1896) to its fleet of river boats.⁴⁶

Excepting the introduction of steam-powered vessels on the lower river, modes of transportation remained primitive between 1869 and 1896, just as they had been during the Hudson’s Bay Company’s presence. Canoes, rafts and sleds continued to be the principal forms of domestic travel, the birch-bark type of canoe giving way to cottonwood dugouts after 1869.⁴⁷ Poling boats were introduced by the miners during the 1880s and used on the

Yukon River and its tributaries. They were particularly well-suited to upstream travel. Long, narrow, and pointed at both ends, these craft were propelled by two men sinking poles through the water and pushing on the riverbed. At times the poles were augmented by a canvas sail.⁴⁸

An important innovation in overland travel occurred during this period with the introduction of horses.⁴⁹ The earliest record of horses in the Yukon dates from 1891 when Jack Dalton and E.G. Glave brought horses in over what was later to be known as the Dalton Trail.⁵⁰ There is also evidence to suggest that horses were used infrequently at Dyea before this time, but the nature of the Chilkoot Trail prevented them from being brought into the Yukon profitably. Another factor limiting the use of horses was the lack of food. It was generally believed that native grass was not nutritious enough to sustain horses and the costs involved in bringing in hay were too high to make importation feasible. There was also some discussion as to whether horses could withstand the climate and, since it was felt that horses would have to be shod, it was believed that the iron shoes would freeze solid to the ice or else freeze the horses’ feet. Despite these apparent drawbacks, horses were brought into Forty Mile in 1893 and were in general use at Circle City after 1894.⁵¹ However, the horse did not seriously challenge the status of the dog as the primary motive force in overland transportation during this period.

V

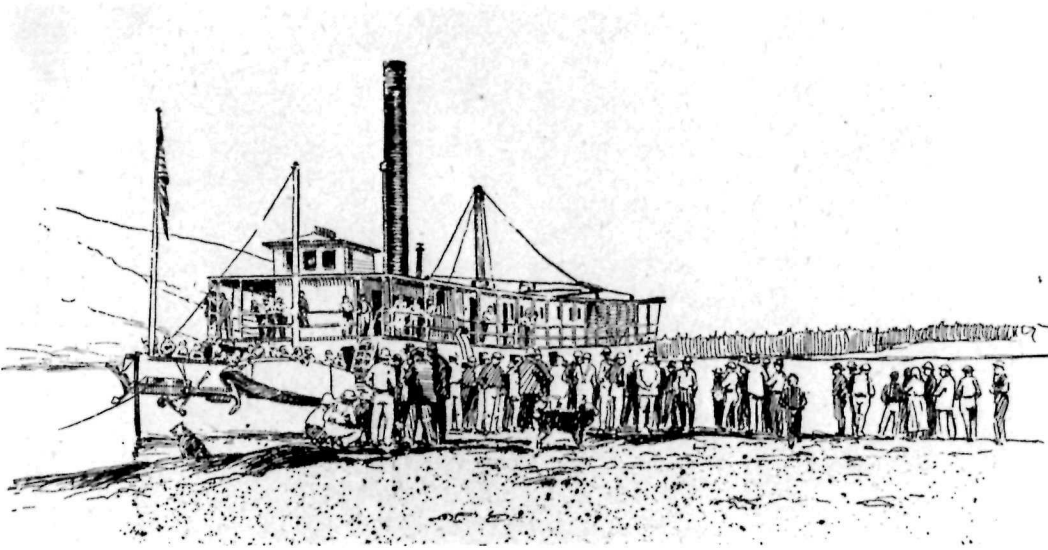
On the eve of the Klondike gold rush the Yukon interior was served by two transportation networks, each originating in Alaska: one on Lynn Canal, the other at Saint Michael. Each fulfilled a separate function. The former was the avenue of migration, the latter the highway of trade. In keeping with this functional nature, the forms of transportation for each were distinct. The lower river was the private preserve of the sternwheeler and the trading companies.⁵² The Lynn Canal, on the other hand, was atomistic in nature, serving individuals or small parties of prospectors who crossed the Chilkoot Pass on foot and travelled down the Yukon River system in small boats of their own construction. Interestingly enough, both of these networks were to retain their pre-gold-rush characters during the great stampede.

20 The arrival of a steamboat was an occasion. Whole settlements would greet the latest purveyor of goods and news from the outside. (*Chicago Record, Klondike* [Chicago: Chicago Record Co., 1897], p. 268.)

21 Seasonality was the one obstacle river transport never surmounted. Here the *Portus B. Weare* is trapped in the ice at Circle City while its crew looks in vain for a channel. (*Ernest Ingersoll, Gold Fields of the Klondike and the Wonders*

of Alaska [n.p.: Edgewood (1897)], p. 338.)

20



21



The Great Stampede

I

On 16 August 1896 gold was discovered on Bonanza Creek, a tiny tributary of the Klondike River. As news of the discovery spread throughout the territory, prospector after prospector, miner after miner abandoned his diggings and set off in frenzied pursuit of the new El Dorado. A year later Klondike hysteria enveloped the outside world.

In many respects the Klondike discovery and the stampede it fathered provided a fitting curtain to the 19th century. Debilitating depression with only brief and fitful interruptions had overhung the western world for a generation before 1898. The psychological effects of the Klondike discovery changed all this, precipitating an almost New Year's Eve type of celebration of purge and promise, as the worn-out 19th century indulged in one last grand binge. In an era that had been characterized by the Gilded Age, the Great Barbecue and the Robber Barons, the chain of events set in motion by the discovery served to democratize the maxim that "money making was the most prized career."¹ No longer was wealth regarded as a private prerogative of a Rockefeller, a Morgan or a Carnegie: the New Year's resolution on everyone's mind was to strike it rich.

With unwitting foresight, a despatch datelined Forty Mile, Yukon Territory, 17 August 1896, predicted that "such is the lure of gold in depression ridden America that many are expected to come."² Probably no other event in Yukon history has ever been anticipated with such understatement. From late July of 1897 when the *Portland* and the *Excelsior*, each laden with gold, landed in Seattle and San Francisco respectively, most of the English-speaking world and much of Europe found itself caught up in a maelstrom that knew only two words – "gold" and "Klondike." Almost immediately a crush of humanity, doggedly determined to win its fair share of untold wealth, streamed north.

Three factors made the Klondike gold rush possible: the existence of a vast amount of placer gold, the publicity given to the discovery in the press of the time, and the transportation system that had evolved since the era of the fur trade.³ Without a juxtaposition of the three in 1897–98 the gold rush would never have reached the proportions that it did.

If one accepts the definition of transportation in its broadest sense as the utilization of transportation routes and a variety of transportation forms to move men and supplies, the history of transportation during the gold rush can be said to have been practically synonymous with the history of the gold rush itself. Each interacted with the other; the one as cause, the other as ef-

fect as circumstances dictated. If the gold rush is conceived, moreover, not as an independent entity nor as a temporary aberration, but as one stage in the historical evolution of the Yukon, then an estimate of its effect on the transportation system can be attempted. With the exception of the railroad, the impact of which properly belongs to a future chapter, the gold rush did not substantively alter the nature or function of the gateways which had been established prior to 1896. No new routes of any consequence were discovered although several variations on the old routes were used with varying degrees of success. What the gold rush did do was to exaggerate the impracticality of the old Hudson's Bay Company fur-trade routes and to strain and emphasize the inadequacy of the coastal routes under gold-rush conditions. Where the effects of the gold rush were most clearly felt were on the modes of transportation. As might be expected, many of these effects were quantitative, but the building of roads and tramways, the introduction of sternwheelers on the upper river, and the construction of the White Pass and Yukon Route railway were major qualitative changes in the transportation system of the Yukon.

II

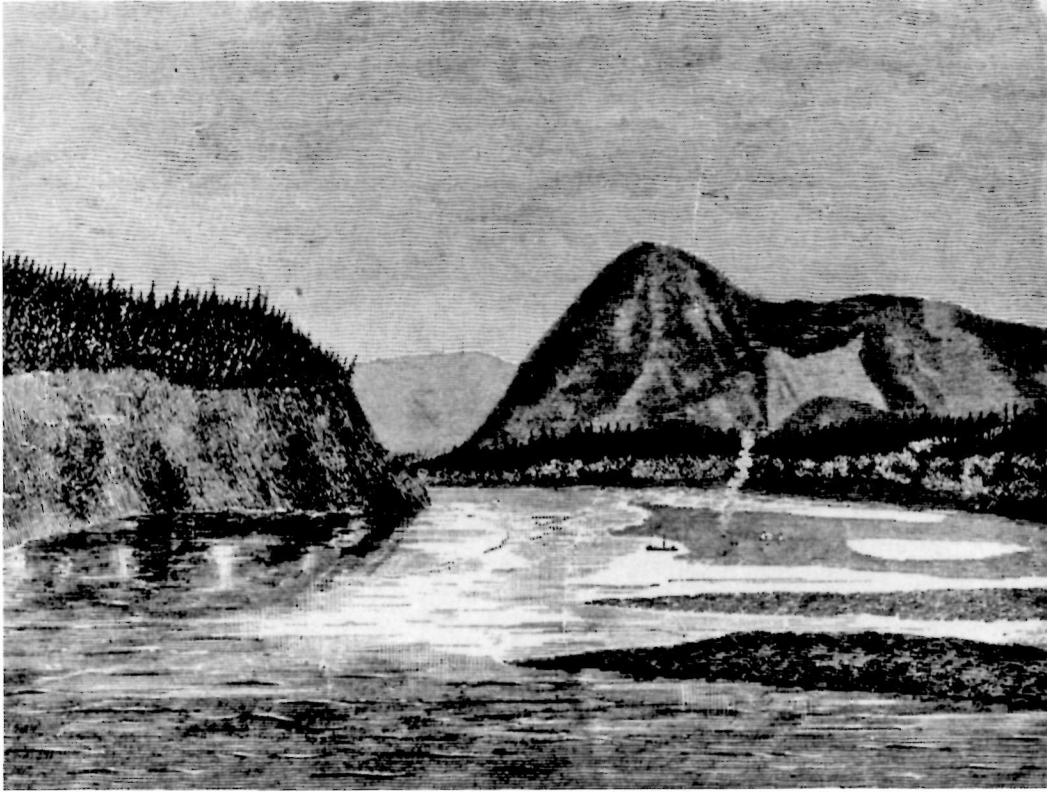
Another qualitative change which is not so immediately apparent also occurred. Before 1896, no government had attempted to influence or interfere with the transportation system. Adjustments in the transportation system had resulted from the action of natural forces and the response to them by individual men or trading companies. As we have seen, this process of "natural selection" had resulted in the practical extinction of the Hudson's Bay Company fur-trade routes, the domination of trade by the Saint Michael route and the rise of the Chilkoot route as the principal avenue of migration. With the gold rush, however, government for the first time became actively interested in influencing the flow of transportation into the Canadian North. The most conspicuous examples of this interference were the promotion of the old Hudson's Bay Company trade routes by the municipality of Edmonton; the promotion of the Stikine railway project by the Dominion government, and the imposition of customs duties.

When news of the gold strike on Bonanza Creek reached the outside, Edmonton was only a small town of seven hundred people. Nonetheless, Edmonton qualified as a transfer point to the Klondike, being situated at the head of a known trail to the Yukon (the old Hudson's Bay Company Athabasca-Mackenzie-Porcupine-Yukon river route) and having the facilities to serve as a supply base, in this instance the northern terminus of the Canadian Pacific Railway.⁴ In an attempt to stimulate the economy, local

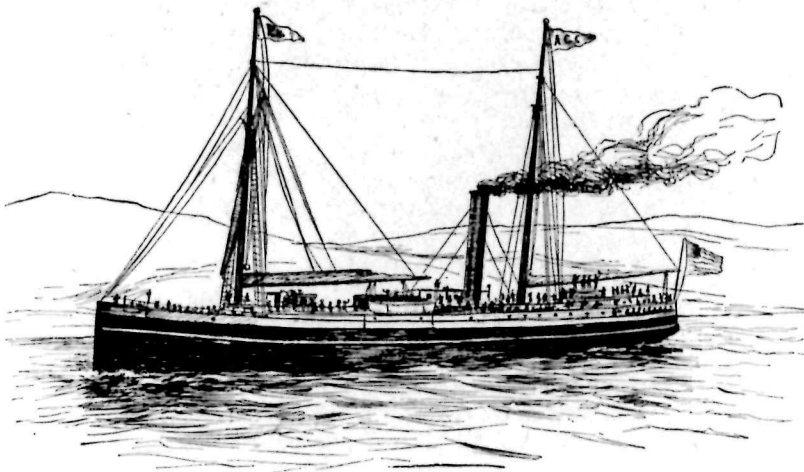
22 The first known view of what later became Dawson City – 13 years before the discovery of gold on Bonanza Creek. (*Frederick Schwatka, Along Alaska's Great River* [New York: Cassell & Company (1885)], p. 243.)

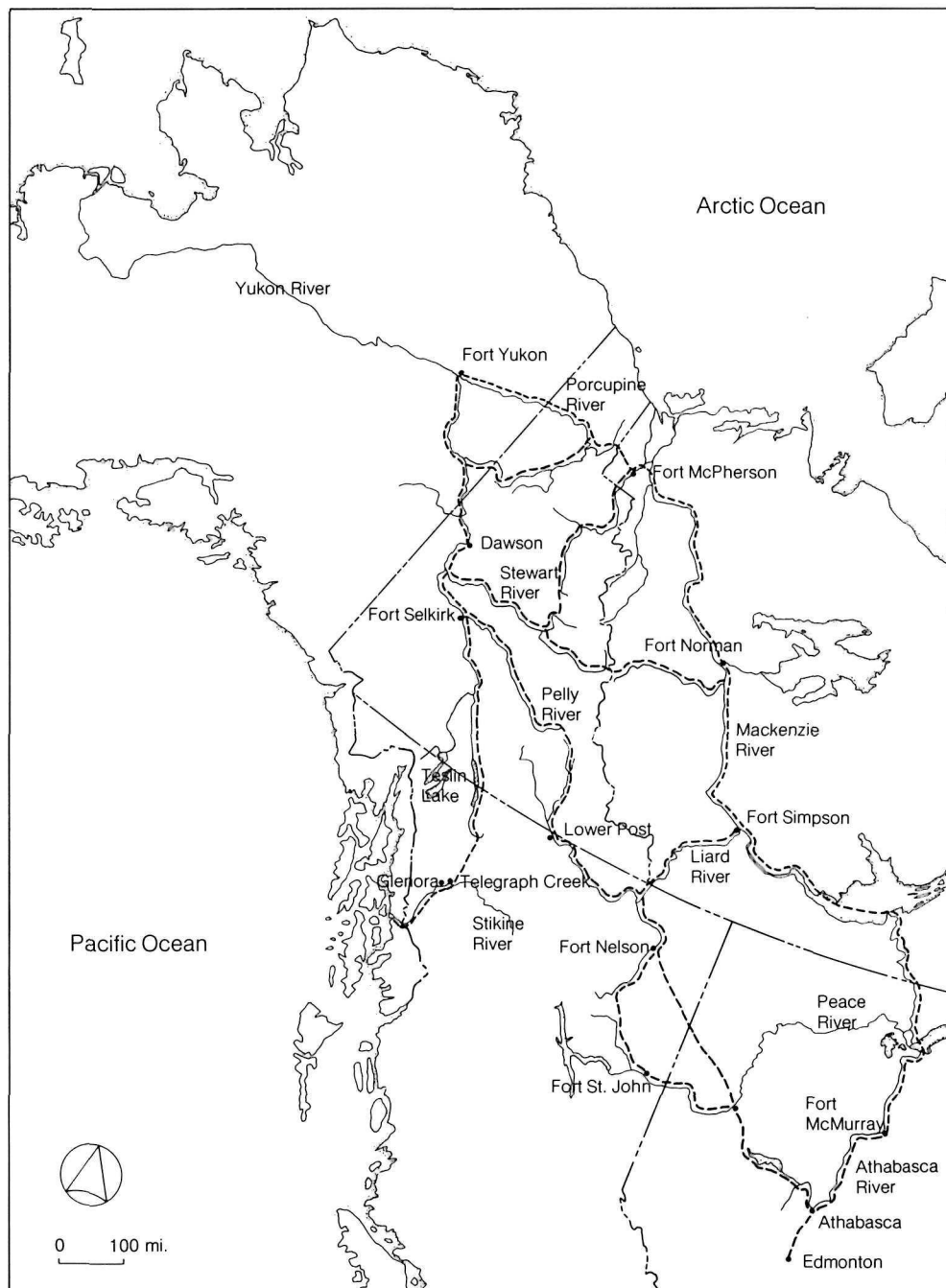
23 The arrival of the *Excelsior* (below) in San Francisco and the *Portland* in Seattle in July 1897 signalled the beginning of the great stampede. (*Chicago Record, Klondike* [Chicago: Chicago Record Co., 1897], p. 400.)

22



23





politicians and merchants undertook an advertising campaign to attract stampedeers. Billing the route through Edmonton as the "All Canadian Route,"⁵ they hoped to capitalize on the patriotic inclinations of the Canadian stampedeers. On a more practical plane, the promoters emphasized the fact that "going via Edmonton" eliminated customs levies, an important consideration for those who had mortgaged themselves in order to take part in the rush. Had Edmonton advocates been content to stand on this one advantage, the Edmonton route would most likely have escaped the notoriety for which it was later known, but the city built its advertising campaign around the dubious assertion that the Edmonton trail was the fastest route to the gold fields. Even the most ardent optimist would have been hard-pressed to substantiate this claim for the truth of the matter was that the 90 days allowed for traversing the trail by the Edmonton promoters was patently unrealistic.⁶ That some people took this route is indicative of the delirium that overcame normally sane men during the gold rush. The Hudson's Bay Company presence in the Yukon had always been precarious, with transportation a basic problem. This obstacle, as we have seen, was never successfully overcome. Moreover, to exacerbate the plight of those who chose this route during the gold rush, the light canoes, the assistance of Indians and voyageurs, the series of supply bases, all of which had been available to the fur trader, were not available to the gold seekers. Nor was there any resemblance between traders who were capable of withstanding the rigours of the trail and the stampedeers who were not.

Of the one hundred thousand people who set out for the Klondike in 1897–98, only two thousand used the Edmonton route. Few of those who did ever reached their destination. "Not a single one," Pierre Berton has written, "as far as can be determined, found any gold at all."⁷ In almost every case it took two years to go from Edmonton to Dawson and by the time the lucky ones finally made it, the gold fields had been staked from end to end. This first example of an attempt by government, in this case municipal, to influence the direction of transportation flow into the Yukon would have been comic had it not had such tragic consequences. The overland routes running west of the Mackenzie River proved no more responsive to the wishes of Edmonton than they had been to those of the Hudson's Bay Company.

Edmonton was not the only would-be metropolis to vie for the Klondike trade. Operating on the valid assumption that the great majority of stampedeers would opt for one of the coastal routes, the port cities of Victoria and Vancouver, with the active support of Montreal- and Toronto-based railroad interests, set out to supply the outfitting and transportation needs created by the rush. In

this they were assisted by the Canadian government which imposed a schedule of customs duties on all foreign goods going into the Yukon. This schedule had the dual purpose of raising revenues and diverting business away from such American centres as Seattle and San Francisco which had early established a stranglehold on Klondike trade. As the Yukon was cut off from the coast by the Alaska Panhandle, however, all goods had to pass through American territory before reaching the Yukon. There, supplies that had been purchased in Canada were liable to retaliatory customs duties levied by American authorities, unless conveyed through Alaska in bond, in which case any prior advantage gained from outfitting in Canada was lost.

The trade issue was complicated by a longstanding dispute with the United States over the Alaska boundary.⁸ Despite Canada's claim that Dyea and Skagway, the coastal gateways to the Yukon interior, were on Canadian soil, the United States exercised sovereignty over both of them. Ever since the late 1880s Canada had pressed for a solution to the question only to meet with American indifference. The gold rush made a settlement all the more urgent from the Canadian viewpoint for reasons of state as well as for the potential effect that any settlement would have on the rivalry between Canadian and American ports. The United States, on the other hand, showed little interest in negotiating so long as it enjoyed *de facto* control over all supplies going into the Klondike via the coastal routes.

An alternative solution to the boundary imbroglio presented itself in the Stikine River route which originated at Fort Wrangell, Alaska, followed the Stikine River to Telegraph Creek, crossed overland to Teslin Lake on the British Columbia-Yukon border and thence down the Yukon River system to Dawson.⁹ Under the treaty of 1825 between Great Britain and Russia, Great Britain had secured free navigation rights on the Stikine which were ceded to Canada after 1867.¹⁰ The Stikine route, therefore, became a vital lever in Canada's attempt to influence transportation flow into the Yukon, especially in view of the failure to reach an accord with the United States on the boundary question. The surveyor general of Canada succinctly explained the need to develop the Stikine route. "We must have an independent road allowing free access to our country whatever complications may arise with the United States," he wrote, "and for this purpose it is imperative that a road be located from Telegraph Creek to Teslin Lake."¹¹ With this in mind, the Canadian government signed a contract on 26 January 1898 with those ubiquitous Canadian railroad contractors, William Mackenzie and Donald Mann, to build a wagon road within six weeks and a narrow-gauge railway by 1 September 1898 from the head of navigation on the Stikine to

Teslin Lake.¹² To complete the transportation system, the government planned to connect each end of the rail line with a fleet of steamboats.¹³ In return, Mackenzie and Mann were to receive a land subsidy of 25,000 acres for each mile of line constructed. After a long and occasionally acrimonious debate in the House of Commons, a bill was passed approving the project.¹⁴ Twelve miles of track had been laid and tickets had actually been sold when the Conservative-dominated Senate rejected the terms of the government contract. This dealt the *coup de grâce* to the Stikine project and the railroad scheme was unceremoniously abandoned.¹⁵

Attempts to regulate artificially the flow of transportation into the Yukon during the gold rush failed. Only in the imposition of customs duties did the government achieve any partial success. This action may have persuaded some to use the Edmonton route and it seems evident that it was partly responsible for stimulating the trading and transportation companies operating out of Victoria and Vancouver. The failure of government to influence the selection of access routes to the Klondike, however, appeared in sharp contrast to what was taking place, without government intervention, on the traditional gateways of Saint Michael and the Lynn Canal.

III

These two gateways, which attracted the majority of stampedees, were linked to the West Coast outfitting ports by a thousand-mile stretch of water known as the Inside Passage. As a result of the unprecedented demand for coastal steamer facilities, the existing transportation companies were strained to capacity.¹⁶ To cope with the overflow, a number of new transportation companies sprang into existence, coastal steamer production was rapidly increased, and old, generally unseaworthy vessels that had been left to rot on the beaches were revived. Martha Black, a towering figure in the post-Klondike period of Yukon history, later described what for most of the stampedees had been a typical trip up the coast when the gold-rush hysteria was at its height.

*The steamer was certainly a "has-been." She was dirty, and loaded to the gunwales with passengers animals, and freight. Men slept on the floor of the saloon and in every corner. The captain was seldom, if ever, sober, and there were many wild parties. Poker, black jack, and drinking went on night and day, and our safe arrival in Skagway was due probably to the Guiding Hand that looks after children, fools, and drunken men.*¹⁷

The Saint Michael route responded to the gold-rush transportation challenge with a rapid expansion in facilities. By the summer of 1898 there were an estimated 110 steamers on the lower river,

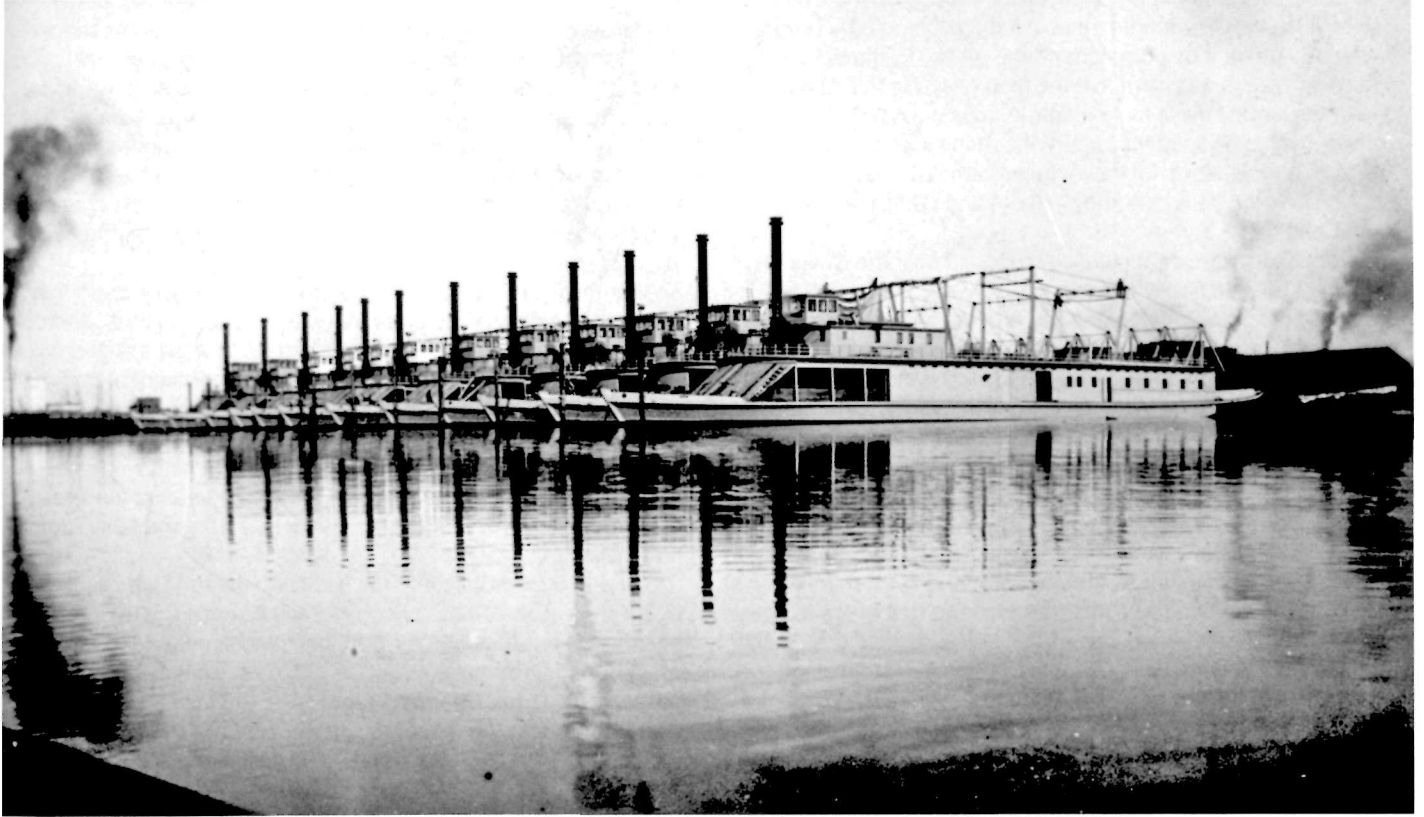
a tenfold increase over 1897 and a 14-fold increase over the pre-gold-rush number.¹⁸ Saint Michael itself became something of a boat-building or, more correctly, a boat-assembly centre.¹⁹ Yet despite the rapid increase in the number of boats on the lower river, the Saint Michael route never did regain control of population movement into the interior, a control it had lost to its Lynn Canal rival after 1882. Though potentially the fastest route to the gold fields, this advantage was never seized.

Several factors account for the lower route's failure to exploit the opportunity provided by the gold rush. The transfer of traffic from coastal steamer to river boat was not orderly. Passengers would be spilled off the decks of the ocean vessels at Saint Michael only to discover that there were no available sternwheelers to take them on the last leg of the voyage to Dawson. This problem was exacerbated by impediments to navigation on the lower river itself. On that section of the river below Circle City known as "the flats," the river spread out like a lake, cut through and through by innumerable bars and islands. As a result, the river was reduced to little more than a series of small shallow streams through which a pilot had to locate a channel large enough to accommodate large steamers. Every summer once the channel had been found, a pilot was stationed on the flats to take the boats safely through, but the annual spring floods made it necessary to locate a new channel each year.²⁰ Initially the trading companies had used Eskimos and Indians as deck hands and pilots because of their knowledge of the river; however, their familiarity with the watercourse was limited to short stretches and as a consequence 20 or more native pilots were required for each trip. This system was abandoned once white pilots had gained enough experience to navigate the river without outside help, but the problem of shifting channels remained.²¹

Another difficult section of the river was encountered at the "Ramparts." At this point a sternwheeler running against the current was forced to tie up every 10 or 15 minutes so that an extra head of steam could be raised.²² At Fort Yukon, low water often made it impossible to take a sternwheeler above the post.²³ Had the United States government acted upon the suggestion that a permanent channel be dredged through the flats and at Fort Yukon,²⁴ the lower river might have attracted a great deal more of the Klondike traffic than it did. However, while the lower river route did not attract large numbers of stampedees, it did retain the important function that it had performed since 1869 as the life line to the Yukon.²⁵ Despite certain obstacles to navigation, it remained the only feasible route over which heavy freight could be brought in.²⁶

25 "Built by the mile and cut apart in proper lengths" – thus did one observer describe the 12 virtually identical boats built by the Moran Brothers shipyard in Seattle for the Klondike trade. Included in this commercial ar-

mada were the *J.P. Light*, *D.R. Campbell*, *F.K. Gustin*, *Mary F. Graff*, *Pilgrim*, *Victoria* and *Oil City*. (Minnesota Historical Society.)



If most of the stampederers avoided the Edmonton trails and the Saint Michael route with remarkable if unconscious discretion, they made up for it by pouring onto the Alaska Panhandle with blitzkrieg force. It was here that the mad cascade that constituted one of the largest mass movements in peacetime history converged, only to be scattered upon one of the six trails which led into the Yukon interior. Of these trails, the most popular by far proved to be the trails over the Chilkoot and White passes on Lynn Canal.²⁷

Before the gold rush, the density of traffic over the Chilkoot Trail had not been heavy enough to justify any major improvements. Consequently, when the first wave of stampederers hit the beaches at Dyea in August of 1897, the transportation facilities were wholly inadequate to cope with the assault: a roughed-out road between Dyea and Sheep Camp which required fording, a *horse packing outfit that had been organized in 1894 by John J. Healy*,²⁸ and the human packing service provided by the Indians. As a result, the stampederers were forced to transport themselves and their supplies under the most adverse circumstances. During late summer of 1897 many built canoes to move their supplies up the Dyea River to the head of canoe navigation at Canyon City, at which point everything was transferred to the trail which led over the summit. When the river froze over, some sledged their outfits over the ice to a point just below Sheep Camp.²⁹ Most of the stampederers, however, moved their supplies along the Dyea-Sheep Camp trail that had been cut prior to the gold rush.

As the number of stampederers increased, some improvements became necessary. A toll bridge was built one-half mile out of Dyea and a good wagon road was constructed to Finnegan's Point, six miles outside the city.³⁰ Horses were brought into Dyea in great quantity and packing operations were expanded. A number of communities sprang up along the trail where the stampederers could stop for food and shelter, only to disappear when the gold rush had spent itself and eliminated their function.³¹

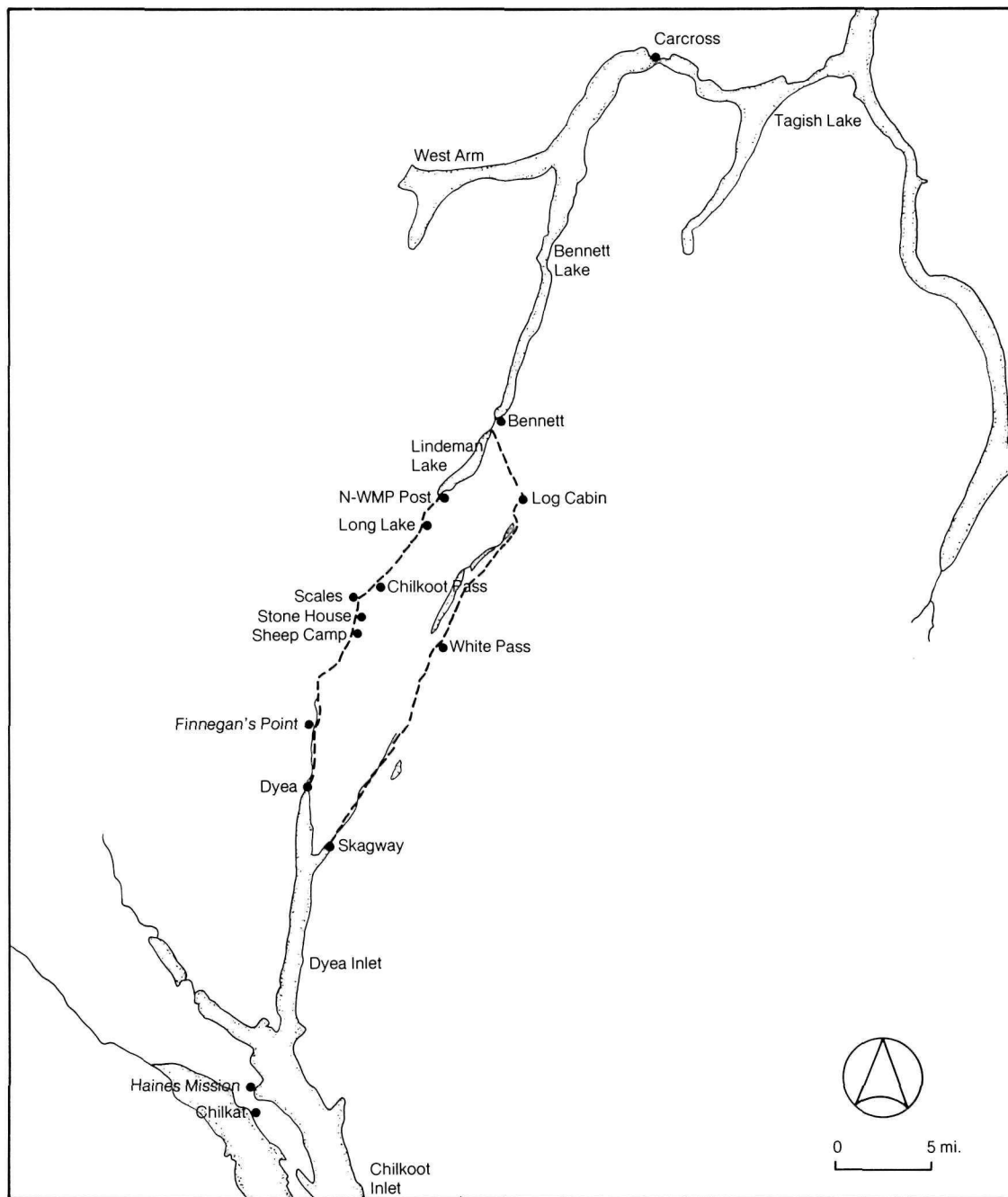
That winter the trail was improved when 150 steps were cut out of the ice on the coastal side of the summit. Later more steps were added. A cord life line was strung up parallel to this somewhat incongruous stairway and shelves were hacked out at intervals so the stampederers could avail themselves of a few moments' respite. A toll was levied for the use of the steps which the operators collected without the arguments commonly associated with such an enterprise. As T.A. Rickard noted, "Everyone was in a hurry; and anything that facilitated progress was liberally compensated."³² In December a horse-powered tramway was constructed up the pass. It was superseded by a much more ambitious undertaking in the spring of 1898. The new tramway,

which ferried goods from Canyon City to the summit and was later extended to Crater Lake, was built by the Chilkoot Railroad and Transportation Company. It consisted of a copper-steel cable supported by tripods anchored in concrete and was powered by steam generators. When it was finished, it was said to have "had the longest single span in the world, twenty-two hundred feet from one support to the next." Each car on the line had a 300-pound capacity. The tramway never stopped and in the spring of 1898 it was dropping freight on the summit at the rate of nine tons an hour.³³

After the Chilkoot Railroad and Transportation Company tramway was completed, the Dyea trail was equipped with a coherent transportation system which eliminated most of the transportation problems that had previously impeded the movement of traffic along this route. Freight rates fell sharply, levelling off at 13 cents a pound for the through journey between Dyea and Bennett;³⁴ however, the impact of this significant improvement was small. Ironically, by the time the tramway became operable, the stream of humanity that had set out for the Klondike the previous summer had practically dried up.

Since 1882 the Chilkoot Trail had been the funnel through which men in search of Yukon gold had flowed. The gold rush did not change this. Of the forty-odd thousand stampederers who are estimated to have made it into the Klondike, well over half went in by this route.³⁵ But whereas before 1897-98 the Dyea trail had been regarded as the best route to the Yukon gold fields, the gold rush had the effect of exaggerating its deficiencies to the point where they overshadowed its utility. Martha Black spoke for most of those who took the Chilkoot Trail during the gold rush when she called it the "worst trail this side of hell." "Men talked of the Chilkoot as if it were a malevolent thing," Kathryn Winslow has written, "capable of wrath and punishment."³⁶ Of all the photographs taken of the gold rush, the one that depicted a black line of lock-stepped humanity, stooped and bent as it inched its way through the pass, came to symbolize this adversity.

Why did the gold rush so alter the reputation of the Chilkoot Trail? Why did this transportation highway into the Yukon, heretofore regarded as the best route into the interior, come to be regarded as some kind of hell the stampeder had to survive before he was worthy of the Klondike treasure? Was it the trail itself or something else that made men look upon the Chilkoot as that "malevolent thing"? The evidence suggests that a combination of factors, the stampederers themselves, the size of the stampede, the season, as well as the inadequacies of the trail, wrought the change. Few of those who set out for the Klondike in the fall of 1897 were fit enough to cope with the rigours of the trail. Fewer



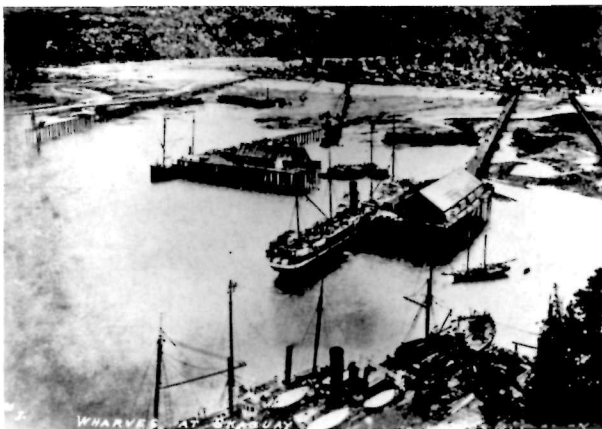
27-38 Few phenomena have been as well-documented in photographs as the rush to the Klondike. Figures 27 to 38 show only a few highlights. 27, A portion of the Skagway waterfront, 1898. (*Public Archives of Canada.*) 28, The Chilkoot Trail between Dyea and

Canyon City. (*Yukon Archives.*) 29, The Chilkoot Pass viewed from the scales. (*Yukon Archives.*) 30, The last 1,000 feet to the summit of the Chilkoot Pass. (*Public Archives of Canada.*) 31, The wagon "road" on the White Pass Trail, three miles from the summit.

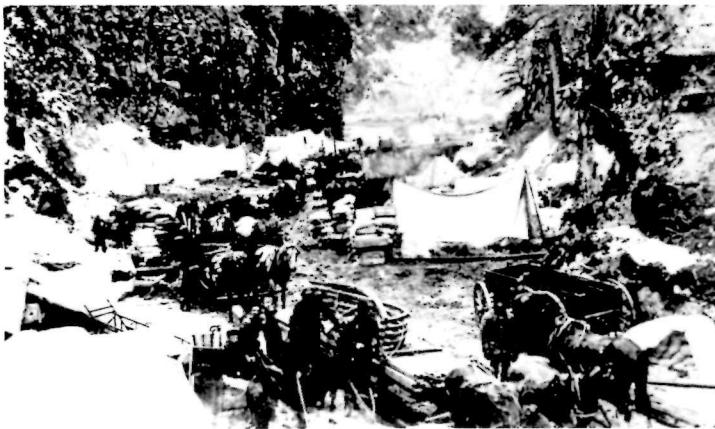
(*Yukon Archives.*) 32, A portion of the stampede settlement at Lindeman Lake. (*Yukon Archives.*) 33, Bennett, 1898. (*Yukon Archives.*) 34, North-West Mounted Police post at Tagish Lake where every boat and its occupants were registered. (*Yukon Archives.*) 35, The tramline between Miles Canyon and Whitehorse Rapids. (*Public Archives of Canada.*) 36, Shooting the Whitehorse Rapids. (*Public Archives of Canada.*) 37, The Klondike armada on Lake Laberge.

38, The Klondike armada on Lake Laberge.

27



28



29



30



31



32



33



34



35



36



37



38



still had any alpine experience. Improper diet and inappropriate clothing for both the task and the climate added to the hardship,³⁷ but of all the burdens that each stamperder had to face before he reached the Klondike, none was more significant in altering the reputation of the trail than packing.

The Klondike discovery occasioned a great mass movement to Dawson, the metropolis of the gold fields. In Dawson the population expanded so rapidly that the supply organizations were unable to keep pace with increasing demand. As winter descended upon the Klondike in 1897, the prospect of starvation loomed ominously. As a result, the government passed a regulation in January 1898 that no one was to be permitted to enter Canadian territory without having the means of survival on his person, or more specifically, as it turned out, on his back.³⁸

Just how effective this regulation was in terms of forcing the typical stamperder to pack the legendary ton of supplies over the trail is open to question. While much has been written about the unreliability of many of the handbooks that purported to provide the stamperder with information about his trip, almost all were unanimous in recommending that the tenderfoot take enough supplies to get him over the trail and established in the gold fields. Because the regulation requiring the year's supply of provisions was proclaimed in January 1898 when most of the stamperders were already on the trail, it seems doubtful that it had much effect. There is, for example, no record of any bona fide stamperder being turned back at the summit because he lacked the requisite supplies. In fact, it appears that the North-West Mounted Police regarded the regulations as a means of denying entry to "undesirables." The fact remains, however, that packing was one of the most severe trials that the stamperder had to suffer in his quest for the Klondike.

Those who were fortunate enough to have money met the regulation without difficulty. They hired Indian packers, contracted the task out to one of the packing outfits that did business along the trail, or procured pack animals. For those who had mortgaged themselves to the limit in order to make the trip, however, and they constituted the majority, the import of the regulation was quite simple – they would have to transport their supplies on their backs. Few of them knew at the outset how to maximize space and distribute weight in manageable allotments. It was only through trial and error and after a great deal of hardship that the stamperders learned to pack and move their outfits in stout canvas bags 50 inches long. Arranging the pack so the centre of gravity rested on the shoulders, with a strap around the forehead to give extra support, the typical stamperder transported 50 to 60 pounds at a time. The outfit was moved in relays of about five miles and

cached, the process being repeated until the entire outfit had moved from the coast to the lakes. The relay system had the effect of concentrating all the traffic on one part of trail, a fact that resulted in numerous blockages, loss of time and general deterioration of the trail. In all, about 30 trips were needed to freight an outfit from one cache to another and 90 days to move it over the trail from the coast to the head of navigation at Bennett Lake. It has been estimated that by the time a stamperder had completed this task he would have walked at least twenty-five hundred miles.³⁹

The route leading over the White Pass, while less popular than its rival, the Chilkoot, attracted some five thousand of those who stampeded to the Klondike in 1897–98. This pass, named by William Ogilvie in 1887 after Sir Thomas White, then minister of the Interior, had been known for ten years before the gold rush.⁴⁰ Captain William Moore, a former steamboat captain, is generally credited with its discovery. Between 1887 and 1897, Moore and the White Pass, which he virtually came to regard as his personal possession, waged competition with their rivals John J. Healy and the Chilkoot Pass in an attempt to siphon off the traffic going into the interior. Despite Moore's endeavours, however, the White Pass remained unused until the gold rush when it was suddenly thrust into prominence.

The White Pass route had two great advantages over the Chilkoot route: Skagway, at the foot of the White Pass, had a harbour whereas Dyea did not, and the trail through the White Pass was low enough to use pack animals over the summit. As a result, pack animals were shipped by the hundreds to Skagway. Of all the animals that were employed as beasts of burden, horses and mules proved to be the most adaptable to northern conditions. Burros were too small and oxen were too slow to traverse the boggy ground so characteristic of the White Pass route. At first some attempt was made to make the trail passable for the pack animals and some stretches of corduroy were laid, but, as one observer pointed out, "the moment a horse could by any means be got over the trail, all further improvement ceased and was never again resumed."⁴¹

The great demand for horses on the White Pass Trail during 1897–98 was reflected in the \$300-price which horses commanded in Skagway. A few enterprising men recognized that here was a mine potentially richer than the gold fields themselves and horses that had been slated for the glue factory only days before found themselves relegated to the hell of the Skagway trail. As Robert Kirk noted, even excellently conditioned horses fell victim to the ignorance of their new masters, the weather, the bad trail, the poor food and the lack of rest that awaited them in Skagway.⁴²

By late 1897 the White Pass route on the coastal side of the summit had become so littered with the carcasses of horses that the stampederes were referring to it as the Dead Horse Trail. In their insane urge to reach Dawson as quickly as possible, the stampederes had made no improvements. The boggy trail had deteriorated under the constant pounding of feet to the point where it became impassable. As a result, the trail was temporarily closed and a wagon road was built by George Brackett to White Pass City, ten miles up the trail from Skagway. Brackett charged a toll of \$20 a ton for the use of his road, but, unlike the toll that was charged for the use of the stairway of ice on the summit of the Chilkoot, Brackett encountered one problem after another in his attempts to collect it.⁴³

The trails leading over the Chilkoot and White passes converged on Bennett Lake, the former via Lindeman Lake. During the winter of 1897–98, a tent city, well in excess of ten thousand people, mushroomed at the head of the lake as stampederes stopped to build the motley armada that would carry them down the Yukon River system after the spring break-up.⁴⁴ Although knock-down boats constituted a standard item in most Klondike outfits and many stampederes packed the necessary construction materials over the passes, the demand for boats so exceeded the capacity of what few shipbuilders there were that priority was given to the construction of large freight scows. These freight scows, built by such contractors as King's Sawmill and Shipyard, *were made of two inch planking, forty-two feet long, and twelve feet wide, with straight sides. They were square at both ends, but sheered up like a barge, with pointed outriggers running about eight feet at the bow and stern, and a long heavy sweep at the end. They were decked fore and aft for eight feet, with the middle open, and a plank ran around the sides to walk on.*

*Each scow had a mast about twenty feet high, rigged with a square sail. The mast was set about eight feet back of the bow, so that a man could work the sweep in front of it. Sails were used only when crossing the lakes. Usually a tent was placed over the cockpit in the middle. After the cargo was loaded, this was where the crew lived, cooking on a little sheet iron stove. The scows were unpainted, were capable of carrying twenty tons, and drew from 24 to 26 inches.*⁴⁵

A similar problem of supply and demand beset sawmill operators who had established themselves at Bennett to satisfy those who could not afford the price of a ready-made boat (\$300 to \$500) or had failed to include the requisite materials in their outfits.⁴⁶ A shortage of labour exacerbated the situation when few stampederes showed any inclination to work for wages and possibly defer their arrival in Dawson. The problem was partially allevi-

ated when a compromise was worked out whereby those who wanted boat lumber supplied the mill with raw timber and took lumber that had already been cut into boards to build their vessels.⁴⁷ For most of those who streamed north, however, cutting timber for their own use and assembling boats of their own manufacture was the rule.

After the lumber was whipsawed, a frame was constructed, the sides and bottom were nailed to the frame and the cracks were caulked and pitched. Then the oars or poles were cut, a mast erected and seats nailed down for the last leg of the race for Dawson.⁴⁸ To increase the speed of these vessels – some fragile and unseaworthy, some barely adequate, and only a few built well enough to ensure safe passage down the watercourse – the stampederes used blanket sails and “current sails.” The current sail was a device consisting of a piece of canvas weighted with rocks and dropped into the water. The undercurrent catching this submerged sail countered contrary winds and augmented downwinds where the water was deep enough so the current sail did not drag on the bottom.⁴⁹

Having survived the perils of the trip up the coast, the adversity of the passes and the misery of the whipsaw pits at Bennett, the stampeder had yet two more serious obstacles to face – Miles Canyon and the Whitehorse Rapids. The canyon, a turbulent, dangerous stretch of water at the foot of which was a series of rapids, was to claim several lives before the North-West Mounted Police passed a regulation that only skilled pilots were to take boats through Miles Canyon and the Whitehorse Rapids.⁵⁰ Fines of \$100 were levied against all who violated this rule. The regulations also prohibited women and children from accompanying the pilot through the canyon to the foot of the rapids although this prohibition was occasionally evaded. The pilots, who were licensed by the North-West Mounted Police, charged \$20 to \$25 for each boat they took down. One of the most famous of them was Jack London, who was later to gain fame as a popular novelist. On a good day a pilot could make ten trips, returning to the head of the canyon from the foot of the rapids on horseback.⁵¹ One look at this violent stretch of water, however, persuaded many a stampeder against trusting the fate of his possessions to the skill of a pilot. As a result, a windlass was rigged up on the east side of the river in the spring of 1898 to haul the boats out of the water and a tramway was built by Norman Macaulay from the head of Miles Canyon to the foot of the Whitehorse Rapids, a distance of about five miles. The tramway consisted of peeled logs, eight inches in diameter, over which horses pulled wagons with cast-iron concave wheels. The freight rate on Macaulay's tramline, which he named “The Whitehorse Rapids Tramway

Company," was three cents a pound and an additional \$25 was charged for each boat. Shortly thereafter, another tramway, this one six and one-half miles long, was built on the west bank by a John Hepburn, but the competition affected both operations and Hepburn sold out to Macaulay for \$60,000.⁵²

Once through the Whitehorse Rapids, the way to Dawson was unimpeded except for the minor obstructions at Five Fingers and Rink rapids. These obstacles, however, were not difficult to negotiate with boats of the size used by the stampeder. By mid-June the flotilla began to stream into Dawson.⁵³ The ordeal of the past few months meant nothing. The success or failure of the stampede was now to be determined in the Klondike gold fields.

IV

The gold rush gave birth to many elaborate transportation schemes for facilitating the movement of men and supplies into the Yukon. This was a natural response to the news coming out of the Klondike that gold was there for the taking. A myth was in the process of being created – that nuggets of gold covered the Klondike landscape in such profusion that they only awaited some lucky soul to gather them up. Nor was this myth challenged by those who had struck it rich in 1896–97 and who now found themselves deluged by gold seekers eager for information about the Yukon. "You might just as well believe what you hear," the former confided, "because you just can't tell lies about Klondike. It's all true."⁵⁴ In the popular imagination, therefore, it was neither the finding nor the mining of the gold that caused people to hesitate about leaving for the Klondike; the obstacle to be overcome was that of getting to the gold fields themselves.

It is hardly surprising that two of these transportation schemes which promised to convey the prospective stampeder to the Yukon without the exertion required by more conventional forms of transportation were based on inventions that had captured the popular imagination of the time: the bicycle⁵⁵ and the balloon. In Kalamazoo, Michigan, a man by the name of Frank Corey built an airship to carry him to the Klondike when news of the phenomenal discovery broke in the American press. Corey's plan was to take two men on the inaugural flight so each of them could stake claims and thereafter to run fortnightly flights to the Yukon. His scheme reached its climax when requests for tickets started to pour in, but, despite the enthusiasm it had generated, neither the plan nor the airship ever left the ground. In Seattle, Washington, meanwhile, the Jacobs Transportation Company invested \$150,000 in another balloon scheme, this one conceived by a Don Carlos Stevens. It was Stevens's plan to operate regular flights from Tesklo Bay near Juneau to Dawson and so enthusias-

tic did he become about the whole thing that he let it be known that when he got to Tesklo Bay he would hang out a sign – "*All Aboard for Klondike*" – "and when I've got my passengers I'll cut the rope and away we'll go." In this instance, Tesklo Bay's proximity to Dawson, in comparison to that of Kalamazoo's, was of little consequence. The promoters, it turned out, had more hot air than the balloon.⁵⁶

Other transportation schemes that were talked about but never made it off the drawing boards were legion. The Pullman Palace Car Company completed a prototype for an electric sleigh which the Great Northern Mining and Transportation Company intended to use on the Klondike creeks. Complete with steam heat, electric lights and elegant interior appointments, the prototype was designed to travel at the then breath-taking speed of 60 miles an hour. The degree of disappointment felt by Yukon plutocrats and would-be plutocrats must have been great when news was received that the scheme had failed, but unfortunately their disappointment was never recorded. Another solution to the northern transportation problem was conceived by the Klondike Combined Sledge and Boat Company, which designed a steel sledge and barge which it intended to market in the summer of 1898. This contraption had sails and oars, air chambers for buoyancy and, as an added inducement, burglar-proof compartments for gold. Like its predecessor, this scheme suffered an unheralded end and one can only speculate whether its failure was the result of impracticality or the end of the gold rush.⁵⁷

The experience of a stampeder setting out from Edmonton would tend to suggest the former. He also built a "sleigh-boat," the overland motive power for which was to be supplied by a horse until a river was reached, at which point the device would be capsized to make a boat. The one problem never resolved by the inventor, however, proved to be the contraption's failing. "When the snow and ice were on the ground," an eyewitness remarked incredulously, "the rivers were also frozen." Edmonton was privy to another scheme which did make some sense. This device was a steam sleigh which had a cogwheel for traction. Nevertheless, the progress it made failed to create a favourable impression – only 18 inches. The steam sleigh only bored itself deeper and deeper into the ground as a result of the action of the cogwheel. Other ideas which attracted attention during the gold rush included carts mounted on buggy wheels and large unicycles around which platforms had been built.⁵⁸

Two other schemes to expedite the movement of supplies, particularly food, had Scandinavian origins. The first was made by a captain of the Royal Norwegian Army, Nils Muller, who suggested to Clifford Sifton that a series of stations be built between the

coast and Dawson, and manned by a corps of Norwegian skiers. Muller wrote that

*A skiloper with a full load of provisions is able to cover 15 miles per day – with one or two days provisions about 30 or 35. But with a sufficient number for relieving at each station the distance between Dawson City and Dyea may easily be covered in 8 days – counting 20 working hours per day.*⁵⁹

How this mode of human transport was to adequately supply the needs of some thirty thousand people was never answered and for its part the Department of the Interior showed no interest in finding out. In the meantime, the Alaska missionary, Sheldon Jackson, had persuaded the United States government to relieve the food crisis by driving a large herd of reindeer overland from the coast, the reindeer to supply not only transportation, but ultimately the fare of hungry Dawsonites. Like its predecessors, this scheme failed when most of the reindeer died of starvation before reaching their destination.⁶⁰

Of the many transportation schemes that were stillborn during the gold rush, none was more interesting nor perhaps more deserving of attention than the proposal for a monorail. The brain-child of a David Jones from San Francisco, the monorail appeared to be an effective answer to the northern transportation problem. Its originator claimed that "it can be carried above the snow and the line can always be available for service, it can be run over steep grades either by friction rollers or cog and back gearing and could be built rapidly."⁶¹ Unlike so many others who were out for some fast money, James did not want to sell his plan; rather he sought employment in the civil service to develop his scheme. However, the Canadian government gave short shrift to his proposal and both his idea and his desire for employment were refused.⁶²

All of these transportation schemes had one thing in common: all failed to find application for one reason or another. Many of them were products of the hysteria that was typical of the gold-rush period, poorly thought out, and perhaps in no way dissimilar to the contraptions which amateur inventors try to pass off as perpetual motion machines, but others, if not successful, were forerunners of things to come. In the invention of the steam sleigh propelled by a cogwheel, for example, we can see a precursor to the snowmobile, a device well-suited to the needs of northern transportation. For the immediate future as men conceived it in 1898, however, the solution to the northern transportation problem was not to be found in snowmobiles. For that, men would turn to the 19th-century panacea for all transportation problems – the railroad.

V

The Klondike gold rush caused a stampede of railroad incorporations which in its own peculiar fashion was as great as its human counterpart over the passes. In 1897, 32 railroad companies applied for federal charters to build lines into the Yukon. In the same year the Province of British Columbia incorporated 10, while between 1897 and 1899 another 12 filed articles of incorporation in the United States.⁶³ In 1897 the Canadian government commissioned a series of surveys to determine the most feasible route for a railway and in 1898 it sponsored its own scheme to build a line between the head of navigation on the Stikine River and Teslin Lake.⁶⁴

The one railroad scheme that finally materialized was not wholly inspired by the gold rush. In 1895 a group of English capitalists who had formed the British Columbia Development Association sent one of their number, Charles Herbert Wilkinson, to Canada's westernmost province to investigate investment prospects. From Ernest Billinghamurst, the brother of another member of the syndicate, Wilkinson learned of Captain William Moore. Moore, discoverer of the White Pass and its foremost promoter, had previously sought money from Billinghamurst to develop a route over this pass. Consequently Billinghamurst introduced Moore to Wilkinson. Wilkinson showed enough interest in Moore's scheme to send Billinghamurst to Skagway. Billinghamurst reported favourably and in 1896 a decision was made by the syndicate to proceed with a transportation project of an undertermined nature. A small sum of money was placed at Moore's disposal and in 1896 Moore used this money to cut a rough trail a few miles out of Skagway.⁶⁵ This initial development work was followed by the incorporation of two Canadian companies in May and June of 1897, the British Columbia-Yukon Railway Company and the British Yukon Mining, Trading and Transportation Company, to build a railroad from the summit of White Pass to the trading post of Selkirk on the Yukon River.⁶⁶ The absence of enabling legislation providing for railroads in Alaska prevented the syndicate from obtaining a right of way between Skagway and the summit.⁶⁷

The incorporation of these two companies predated the beginnings of the Klondike stampede by some three weeks. Thus the decision to build a railroad into the Yukon, if not actually proceed with its construction, was not a result of the gold rush. In fact, considering the short duration of most gold rushes, the Yukon's remoteness and the cost of building a railroad over such difficult terrain as the Alaska Panhandle, the gold rush was not of itself an altogether attractive proposition for investing in a transportation system as permanent as a railroad. This is not to suggest, however, that the promoters were unaware of the Bonanza Creek dis-

covery nor that the discovery had no effect in their application for the railroad charters. As Tappan Adney has pointed out, the Klondike discovery was "common property outside six months before" the *Portland* and *Excelsior* caused the "acute attack of insanity" that precipitated the stampede.⁶⁸ What should be noted is that other factors not directly related to the gold rush played an important role in the syndicate's decision to build the railway. Information culled from official and unofficial sources suggested that gold was not the only resource which could be profitably exploited. Reports concerning grazing land, timber and other metals indicated that the Yukon had a potentially rich and diversified economic base, a crucial consideration in light of past gold rushes and the exhaustible and nonrenewable nature of gold mining.⁶⁹

When news of the Klondike discovery broke in the English press in August of 1897, the British Columbia Development Association found itself in an excellent position to exploit the transportation potential of the ensuing stampede. The syndicate, however, had fallen on bad times and a lien was taken on it by the English financial house of Close Brothers. When the syndicate failed in March 1898, Close Brothers appropriated its assets, including the two railroad charters that had been secured the previous spring.⁷⁰

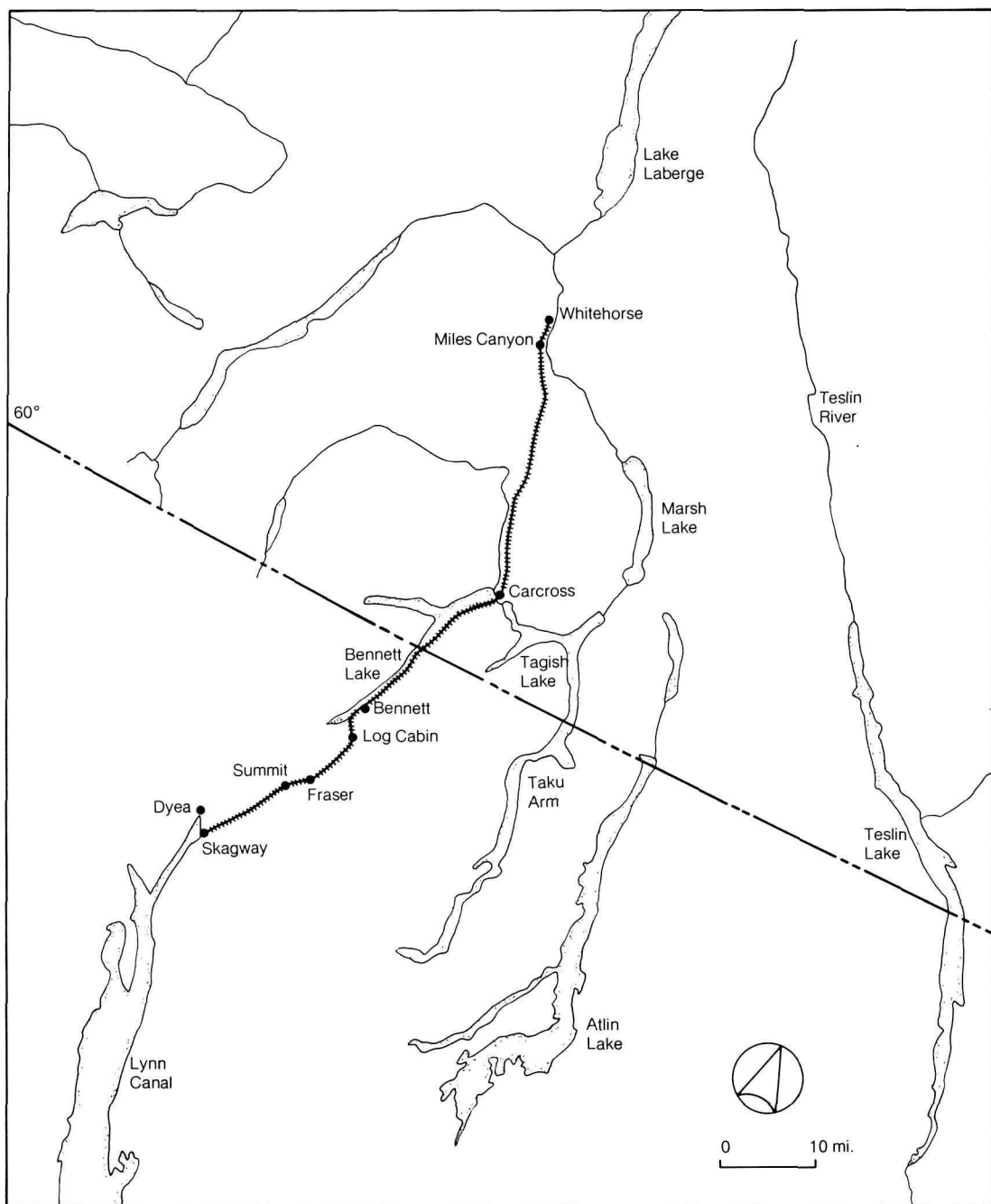
On 29 March 1898 Close Brothers obtained a West Virginia charter to build a railroad between Skagway and the summit of White Pass. With the passage of a bill "Extending the Homestead Laws and Providing for Right of Way for Railroads in the District of Alaska" by the United States Congress on 14 May 1898, and the subsequent approval by the secretary of the Interior of the company's application for a right of way from Skagway to the summit, the last legislative obstacles to a Skagway-Selkirk railroad were overcome.⁷¹

In the meantime, a representative of Close Brothers, Sir Thomas Tancred, had travelled to Skagway to determine the feasibility of building the railroad. With two United States representatives of the firm, Samuel H. Graves and E.C. Hawkins, in tow, Tancred arrived in Skagway in April.⁷²

Once in Skagway, Graves and Hawkins made a preliminary survey of possible routes leading over the White Pass. After a cursory examination of the area, they met with Tancred in the bar of the St. James Hotel in Skagway. There they discussed the feasibility of building the railroad and debated what recommendations Tancred should relay to the investors on his return to England. On the basis of their survey, Graves and Hawkins were agreed that the rail line could not be built. At this point the discussion was on the verge of breaking up and with it the railroad scheme when something occurred that was to be of major consequence for the

railroad scheme, the subsequent course of transportation history in the Yukon and indeed the history of the Yukon Territory itself. Michael J. Heney, an independent railroad contractor, had overheard their conversation. Heney, who had been lured to the north by the vision of building a railroad into the Yukon, had conducted an extensive survey of the area leading out of Skagway and was convinced that a railroad could be built. The only thing he lacked was capital. With the conviction of a man obsessed and the persuasiveness of one who knew that his dream hung in the balance, Heney set out to convince Tancred, Graves and Hawkins that he was right. His determination and his experience won the Close Brothers' representatives over. On 27 May 1898, men and supplies were landed at Skagway. The following day construction commenced.⁷³

The construction phase was beset by many problems. Skagway was over a thousand miles from Vancouver, Victoria or Seattle, the nearest supply bases, and the only connecting transportation service was by water. The capacity of the coastal steamer fleet that served Skagway and other points on the Panhandle, moreover, was taxed to the limit by the stampede. With the end of the gold rush a momentary respite ensued, only to disappear with the outbreak of hostilities in Cuba and war with Spain. The war brought the United States government into direct competition with the railroad for transportation services on the coast and the American government forced its advantage by pressing practically every available vessel on the Pacific coast into government service. In Alaska the terrain over which the roadbed was to be laid was devoid of material adequate for ballast and as a result, ballast had to be hauled from the bed of the Skagway River at one end and from Fraser at the other. These difficulties were exacerbated by an insufficient labour supply. "It was obviously out of the question to engage men in the ordinary way and convey them in hundreds at our cost to Skagway," the first president of the railroad later recalled, "because while the gold fever was at its height, the moment they set foot ashore in Skagway would be our last glimpse of them."⁷⁴ Nevertheless, the harsh reality of the gold rush partially offset this problem. There were literally hundreds of vagrants in Skagway awaiting the arrival of friends, money or both before hitting the trail for the gold fields. Here was a ready-made labour market if, albeit, an unskilled one. But these vagrants were also a "captive market" and the merchants of Skagway who dominated the town council realized that once the railroad began operating, their captive market would disappear. As a result, the town council made it known that it expected the railroad to pay for the privilege of operating out of Skagway and if this failed, the council threatened to seek an injunction preventing the railroad



from laying track on that section of the roadbed that ran through town.

When the controversy was at its height and while the town council was engaged in a volatile meeting, the railroad crews worked through the night. By morning the track was laid. Presented with a *fait accompli*, the town council capitulated.⁷⁵ Despite this small success, however, the company's labour problems were not fully overcome. Turnover continued at a rapid rate as men, heretofore forced to remain in Skagway for a variety of reasons, found these reasons obviated with the arrival of their friends or money. No longer restrained, they would drop their tools and leave for the Klondike.⁷⁶

Like so many other transportation projects of the period, the White Pass and Yukon Route⁷⁷ railway was built with the intention of returning an immediate profit to its investors. But while other transportation companies, cognizant of the boom and bust nature of the gold-rush phenomenon, operated on the "high-grading" principle with planned obsolescence in mind, the railroad was designed as a permanent fixture in the Yukon transportation system. It would be built, Samuel Graves noted,

*in the belief that the line that would pay best was a well located one, with the lowest possible gradients and a very solid roadbed over which heavy engines could haul heavy loads up the hill in summertime, and which would admit of modern appliances for snow fighting in the winter.*⁷⁸

The intentions of those on the site, however, could and often did exceed the expectations of observers in Skagway and indeed the expectations of some of the investors themselves. In Skagway local wags referred to the project derisively as the "Jackass and Yukon Railway," while in England some of the less enthusiastic shareholders tried to jettison the scheme with arguments in favour of a tramline.⁷⁹ But the contractors and the Close Brothers representatives in the field persisted and as the weeks slipped by the line finally began to take shape.

By 21 July four miles of track had been completed.⁸⁰ This brought the roadbed to the foot of the pass where the most difficult section in terms of construction would begin. Here the White Pass rose to an altitude of 2,885 feet in 14 miles. In order to reduce the gradient, 21 miles of track were required. The problems involved in finding a satisfactory roadbed for the additional 7 miles of track were complicated by Brackett's wagon road. The right of way that Brackett had reserved for his road was the most direct and feasible line to the summit and while the roadbed for the railway could cross this line, it could not run parallel to it. Finally, after several attempts to skirt Brackett's road, which were made even more costly by the need to remove debris that con-

stantly fell on the wagon road as the railroad crews carved out the roadbed, the White Pass and Yukon Route bought Brackett out.⁸¹

As the railroad slowly inched its way up the pass to Heney Station during August of 1898, word of the gold strike at Atlin, British Columbia, reached the construction camps. Its impact was immediate as an estimated 65 per cent of the work force abandoned their jobs and stampeded to Atlin. It was not until October that the company was able to replenish the crew to their pre-Atlin levels and by that time two valuable summer months of construction time had elapsed.⁸²

With the onslaught of Alaskan winter, construction entered a new stage. Winter work required an almost superhuman effort. "The strong winds and severe cold made the men torpid, and benumbed not merely their bodies but their minds," Graves wrote, "so that after an hour's work, it was necessary to relieve them by fresh men."⁸³ At mile 15 the crews reached the most difficult stretch on the line. Here a perpendicular wall of granite rose nearly two thousand feet from the canyon floor. Polished by the action of long-extinct glaciers and worn smooth by the winds that ripped through the pass, this stretch presented a problem of the severest order. Working on platforms supported by crowbars drilled into the granite below and suspended by ropes secured from above, the labourers blasted and hacked the face of the rock until a tenuous horizontal ribbon had been cut for the roadbed. A mile further on, a tunnel 250 feet long was bored through the mountain. At mile 19, the Dead Horse Gulch Viaduct, a switch-back 215 feet above a rock-strewn stream was built. Finally on 18 February 1899 the summit was reached. Two days later freight and passenger trains were placed in service.⁸⁴

Once over the summit, construction proceeded apace to the head of Bennett Lake. To facilitate supply, Heney organized a teamster operation which doubled as a passenger- and freight-carrying service between the summit and the lake. When the railroad reached Bennett on 6 July 1899, the horses and wagons were withdrawn and made ready for use over the frozen surface of the lake that winter.⁸⁵

From Bennett the survey called for the line to skirt the eastern shore of the lake to Caribou Crossing (now Carcross). Because heavy rock blasting was required on this section, the company transferred most of its operations to the Caribou Crossing-Whitehorse section with the exception of the rock crews which were left to cut out the road beside the lake. The decision to complete the first and last sections of the railway before tackling the middle made it necessary to move rails, engines, rolling stock and other material over the middle section to Caribou Crossing. For this purpose the lake was used as a connecting link and a power barge

40 Cutting the grade for the White Pass and Yukon Route railway on Tunnel Mountain. (*Yukon Archives.*)



41 A crew pauses for a noon meal at the entrance to the tunnel. (*Yukon Archives.*)





43 A railroad crew clears the grade and lays track. Occasionally the rails dipped and swayed with the configuration of the ground. (*Yukon Archives.*)



44 Wheelbarrow crews remove rock near the summit of White Pass. (*Yukon Archives.*)

45 A cut through glacial frost and what appears to be a causeway in the distance. (*Yukon Archives.*)

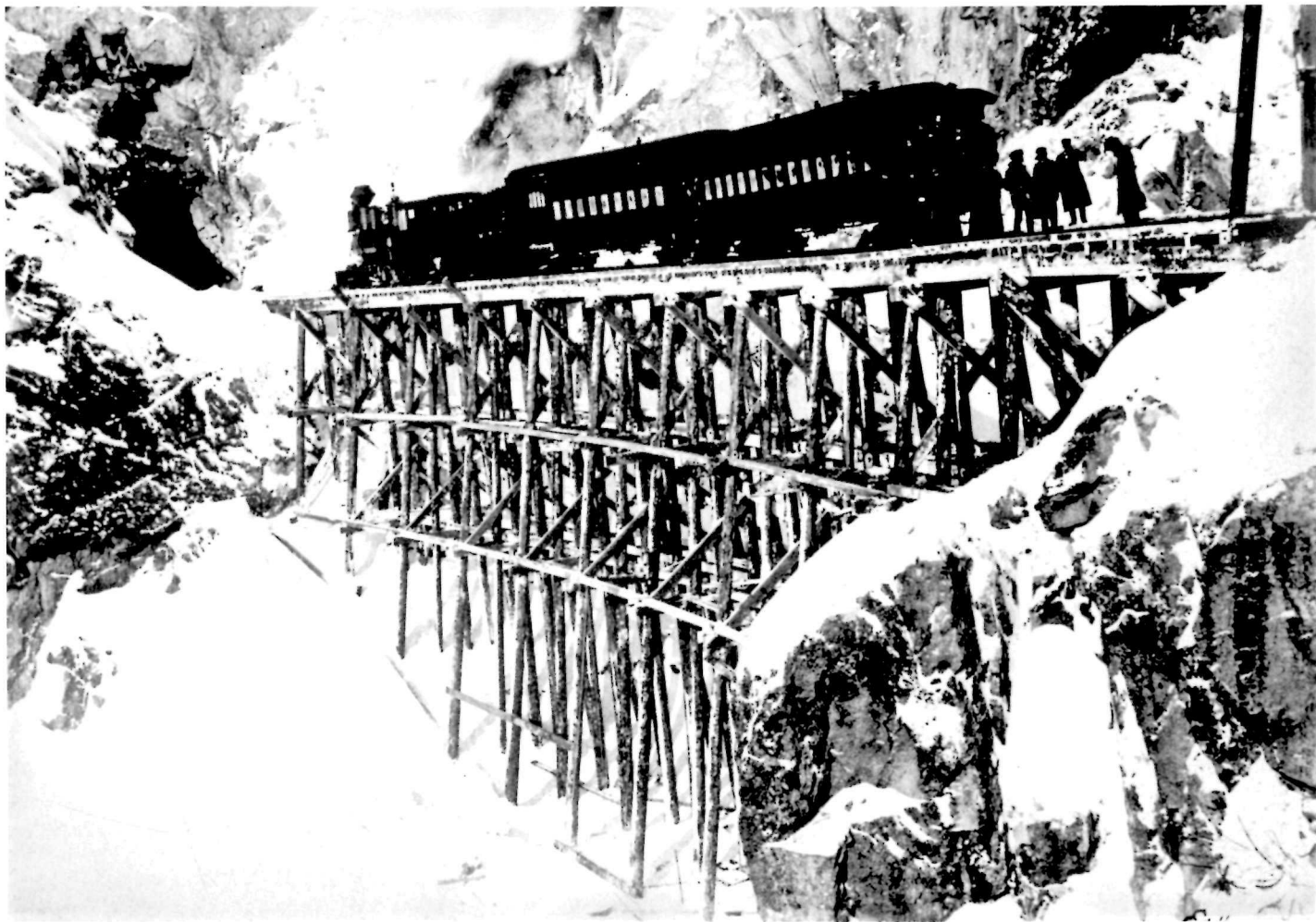
44



45



46 The first passenger train to the summit
of White Pass, 20 February 1899.
(Yukon Archives.)



was built. As with Heney's horse-drawn wagons that had operated between the summit and Bennett, the barge was also used to move people and supplies going on to Dawson.⁸⁶ When the lake froze over that fall, the White Pass and Yukon Route organized the "Red Line Transportation Company." This cartage service moved "a large number of passengers and hundreds of tons of freight, including material, engines and boilers etc., for a number of steamers built at the head of Lake Bennett that spring." On 8 June 1900 the Caribou Crossing-Whitehorse section was finished. In the meantime the company had bought out Macaulay's tramlines at Miles Canyon and Whitehorse in order to secure a right of way. With the completion of the line between Caribou Crossing and Whitehorse, a through transportation service was inaugurated between Skagway and Whitehorse, utilising the power barge on Bennett Lake. Finally, on 29 July 1900 the Bennett-Caribou Crossing section was completed. The following day through trains between Skagway and Whitehorse began operating.⁸⁷

When completed, the White Pass and Yukon Route railroad was 110.7 miles long. Of this, 20.4 miles of track were in Alaska, 32.2 miles in British Columbia and 58.1 miles in the Yukon Territory. The railway was of the narrow-gauge (three feet) type, 45-pound rails having been used. From Skagway to the summit of White Pass, the most difficult stretch in terms of construction and maintenance, the line ascended 2,885 feet. The maximum gradient on this section was 3.9 per cent, the average being 2.6 per cent. The highest elevation was not at the summit of the pass, however, but at Log Cabin, British Columbia, mile 33, where the railroad reached an altitude of 2,916 feet. The average track curvature on the Alaskan side ranged from 16 to 20 degrees. The total construction cost was approximately ten million dollars and an additional 2.5 million dollars were spent on rolling stock and equipment.⁸⁸

All told, some thirty-five hundred men were employed at one time or another while the railroad was being built. Of this number, 35 died from all causes including illness as well as accident.⁸⁹ Writing a few years after the railroad had been in operation, Graves noted that probably "no other railway in the world was built by such highly educated men as worked on our First Section." This phenomenon, a demographic product of the Klondike stampede, was only one of the remarkable factors associated with the building of the railroad. Another was the "White Pass spirit" that prevailed during the construction phase.⁹⁰ Except for a short strike in March 1899, which was precipitated by the company's decision to reduce wages and extend the working

day, no other serious labour-management problems were encountered.⁹¹

As the first train ever to ride on the new rails confidently made its way from Whitehorse to Skagway, pulling the empty cars which had accumulated in Whitehorse since June of 1900, an Irish crewman remarked, "Be Jakers – the first thrain into this country was a thrain OUT."⁹² Whether he realized it at the time or not, this Irishman perceived both the challenge and the continuing dilemmas that were to confront the transportation system of the Yukon, and indeed the Yukon itself, for the next half century.

VI

The pressure of the gold rush on the river transportation system had an immediate impact that was reflected in the tremendous expansion of navigation facilities. By August of 1898, 30 additional transportation companies had joined the original firms, the Alaska Commercial Company and the North American Transportation and Trading Company, in the competition for traffic on the Yukon River. Taken together, these companies operated some 60 stern-wheelers, 20 barges and 8 tugboats.⁹³ Despite the unprecedented pressure on the navigation system, however, the gold rush did not result in the introduction of any new forms of water transportation. The sternwheeler retained its role as the basic form of river communication during the period. While the gold rush was not accompanied by any qualitative changes in sternwheeler technology, it was marked, nonetheless, by a significant modification in water routes to the Yukon interior. Before 1898 the sternwheeler had worked the lower Yukon exclusively. Sternwheeler traffic originating at Saint Michael had never been extended above Robert Campbell's old fur-trading post at Fort Selkirk. It was for this reason that Fort Selkirk had been designated the original terminus of the White Pass and Yukon Route railway.⁹⁴

The gold-rush popularity of the upper river system was to have a significant effect on the transport function of the upper and lower routes. While thousands of people busied themselves in the spring of 1898 building the wind- and pole-propelled vessels that would convey them from Bennett Lake to Dawson when the ice broke up, a few began the historic experiment of assembling the steam-powered craft they had sledded over the passes the previous winter. Though there is some dispute as to which sternwheeler was the first to successfully navigate the upper river route between Bennett and Dawson that spring,⁹⁵ that controversy is less important than the success of the experiment itself. An historic breakthrough had been accomplished – steam had been introduced on the upper route. The effect of this achievement was

47 The Red Line Transportation
Company's last run into Bennett from
the summit, 6 July 1899. (*Yukon
Archives.*)



to be of profound consequence for the future of the Yukon transportation system.

Having demonstrated that the sternwheeler could be successfully used on the upper river route, a number of sternwheelers were built at Bennett Lake. Because of the obstacles to through navigation posed by Miles Canyon and the Whitehorse Rapids, the fleet was separated into two divisions – one serving the Bennett-Miles Canyon section, and the other the Whitehorse-Dawson run.⁹⁶ In 1898 the Bennett Lake and Klondike Navigation Company operated the *Flora* and *Nora* below Whitehorse to connect with the *Ora* which plied between Bennett and Miles Canyon. These vessels were approximately 75 feet long. The trip between Bennett and Dawson took four and one-half days. Sleeping accommodation consisted of wooden bunks ranged in tiers of three and the passengers supplied their own bedding. The cost for the through trip was \$75. Meals were an additional dollar each. In the meantime, the Canadian Development Company had placed the *Willie Irving*, the *Goddard* and the *Anglian* between Whitehorse and Dawson. In the summer of 1898 steam service was expanded to include Lindeman Lake with the operation of a steam ferry to connect with Bennett.⁹⁷ The upper route proved to be so successful that it was able to challenge the historic pattern of river transportation dominated by the lower river via Saint Michael. As a result, various sternwheelers like the *Victoria* were withdrawn from the lower run and transferred to the upper Yukon.⁹⁸

With the introduction of sternwheelers on the upper river, the desirability of extending the railroad to Fort Selkirk, a need which had previously existed, was obviated. Whitehorse, situated at the foot of the major impasse to through navigation on the upper river, Miles Canyon and the rapids, was selected as the terminus for the railroad. When the railway was finally completed in July of 1900, the upper river route, served by the railroad and a complementary fleet of sternwheelers, was in a position to supplant the lower route as the main life line to Dawson.

VII

Recalling his trip to the Klondike, Robert Kirk wrote that "the present advanced state of development of the northern mines is due largely to . . . dog-teams."⁹⁹ While Kirk may well have exaggerated the importance of dogs as a transportation factor in the Yukon to the detriment of other forms of transportation, it must be admitted that the dog and the dog team played a crucial role in northern life during this period.

No one knows when dogs were first used to fulfill a transportation need in the Yukon. The Indians used them to the extent that their technologically primitive society demanded and the

Hudson's Bay Company had utilized dogs in the prosecution of the fur trade. With the coming of the prospector in the 1880s, the use of dogs had declined in proportion to the falling off of the trade in furs. This occurred in part because the mines were worked during the summer months only. Many of the miners left for the outside before the annual fall freeze-up, while the rest passed the winter months inside their cabins. The evolution in mining technology occasioned by the introduction of winter digging in the early 1890s and the discovery of the rich gold fields in the Klondike in 1896 renewed the demand for dogs and dog teams.

Dogs were used for a variety of purposes during the Klondike period: to haul poles, logs and lumber for sluice boxes, drift burning and cabins; to deliver mail; to reach the small outlying settlements in the territory; to commute from creek communities to Dawson; to freight supplies, food and equipment; to carry gold from the mines to Dawson; to labour in the mines themselves, and to deliver water door to door before Dawson acquired its water system. During the summer dogs were used as pack animals; during the winter to draw sleds.¹⁰⁰

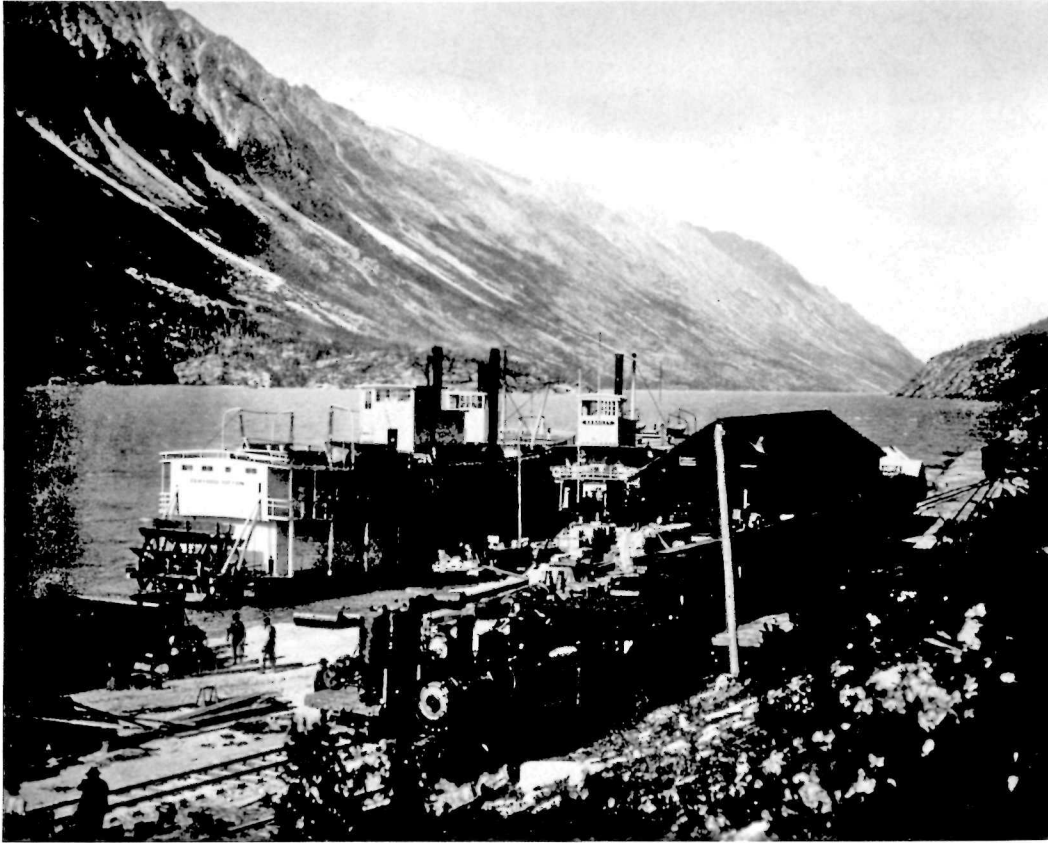
It has been estimated that by 1899 there were some four thousand dogs regularly employed in the town of Dawson. While most of these dogs were privately owned, many of the transportation companies used dogs as well. Men often made \$100 a day freighting supplies to the mines and in the spring of 1898 a return of \$150 a day was not uncommon. During the summer months gold was brought into Dawson from the mines by dog trains consisting of 15 to 20 dogs. Each dog in the train carried a pack which weighed between 20 and 30 pounds. An indication of the wealth conveyed in this manner is apparent from the fact that a train of 15 dogs, each dog carrying a 30-pound pack, transported gold to the value of \$122,400 (gold valued at \$17 an ounce). For two and one-half months during the summer, the dog trains operated 24 hours a day, six days a week. During the winter, dog punchers worked eight hours a day, averaging 20 miles with a load of twelve hundred pounds. Occasionally, the dog teams were relieved from freighting supplies to the creeks and used for trips to the coast on Lynn Canal, 500 miles away. During these trips the packers carried private mail and light express. The charge for carrying a letter was one dollar, and the driver often increased his revenue by taking a miner from Dawson to the coast. The passenger generally paid some \$500 for the privilege of accompanying the sled, not for riding in it, and he was expected to assist in the making of camp and the cutting of firewood and to furnish his own blankets and robe.¹⁰¹

48 The *Clifford Sifton*, the *Bailey* and an unidentified sternwheeler at Bennett. Until the railway was completed to Whitehorse, Bennett was the head of navigation on the upper Yukon. (*Yukon Archives*.)

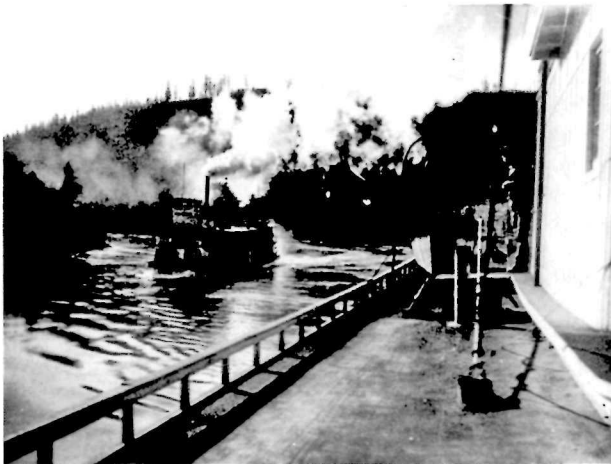
49 A steamboat race. The vessel on the right is probably the *Canadian* since it and the *Bailey* were involved in one of the most famous, and wisely one of the few, steamboat races on the Yukon. According to a report in the *Victoria Daily Colonist* of 29 September 1900,

"the fight was a draw. A battle royal had been fought [the *Bailey* rammed its opponent twice]. The *Canadian*, although having somewhat the best of the struggle, was so badly damaged that no victory was claimed." (*Yukon Archives*.)

48



49



50-56 Dogs performed just about every transport function conceivable. They packed in summer, made long-distance trips in winter, provided Dawson and Whitehorse with primitive "municipal waterworks," and drew

loads which belied their small size. (Yukon Archives.)

50



51



52



53





Various breeds of dog were used for freighting in the Yukon. By far the most sought-after were the native breeds; the husky, the malemute and the "Siwash" or Indian dog. These dogs were aptly suited to the rigours of the northern environment, being "well-boned, deep chested, and strong in the back, fore and hind quarters," as well as having thick outer and inner coats of hair and paws that were well-furred between the pads and the toes. Arthur Treadwell Walden, a noted Yukon dog puncher, preferred the husky to the malemute because it was larger and stronger, and observed that the "Siwash" or Indian dog was generally less preferable than either because of its supposed indolence. It is interesting to note that Walden's ascription of greater size and strength to the husky instead of the malemute reversed the conventional distinction drawn by professional breeders between the two types of dogs, thereby suggesting that Walden mistook one for the other. In addition to their superior physical characteristics, the native dogs showed a marked propensity for scavenging, to which the elevated food caches that dotted the northern landscape bore mute testimony. Accounts of their bad temper were legion as they were quick to attack one another when confused or frightened and no gold-rush story was considered complete without a graphic description of a particularly vicious dog fight.¹⁰²

During the gold rush a brisk business was done importing outside dogs for sale. In fact, contemporary photographs give every indication that the number of outside dogs far exceeded the number of native breeds in use at the time. Though not as valuable as the native breeds, these dogs proved adaptable to northern conditions, nature furnishing them with a thick coat of hair once the cold weather had set in. They had neither the strength nor the endurance of the native dogs and their dietary requirements were also greater, but they were particularly well-suited to short-distance hauling. Tappan Adney, an acute observer, noted that for this purpose the St. Bernard and the mastiff were unsurpassed.¹⁰³

On the trail, dogs were fed dried salmon, each dog being given approximately two pounds of fish each day. Not only was dried salmon relatively cheap, but experience showed that it was also more nourishing than other foods, "one pound of dried King salmon being equal to five pounds of fresh meat." The Indians did a brisk business selling fish to the dog punchers. When fish was not available, a concoction of bacon and rice was prepared that was frequently adulterated with cornmeal or oatmeal, each dog being given three to four pounds. The dogs were fed once a day and always at night. This was done because it encouraged them "to make better time on the trail." Another reason was that the dogs tended to become lazy and indolent after feeding "and practically unfit for work."¹⁰⁴

Of all the dogs in a team the most important was the leader. During the winter of 1897–98 when dogs were selling for \$200 in Dawson, lead dogs were commanding \$300 apiece. A well-trained lead dog relieved the driver of half the work involved in driving the team. The qualities required in a good lead dog were those of intelligence, discipline and responsiveness. The leader was not expected to augment the pulling power of the other dogs. It was his job to keep to the trail and to hold the harness taut. Leaders were generally of the native breed although this was a matter of individual preference. Jeremiah Lynch, a former United States senator, favoured an outside dog, believing that the Scottish collie made the best leader. The professional dog punchers generally had two lead dogs, one to relieve the other when breaking trail.¹⁰⁵

The two most common types of sleds used during this period were the Yukon sled and the basket sleigh. The Yukon sled, or standard freight sled, originated in the Cassiar district of northern British Columbia and was brought into the Yukon during the early 1890s. Seven feet in length, the Yukon sled was 16 inches wide on the runners and set 4 inches off the ground. It was narrow in comparison to other contemporary styles, a characteristic which gave it more mobility. To compensate for this width limitation, the sled box was designed to overhang the runners by two inches on each side, thereby increasing the carrying capacity by four inches. The frame of the sled was light but strong, consisting of four pine slats laid lengthwise over four crosspieces of ash. The runners were also made of ash, with a brass plate attached to the bottom. Wooden runners were not used alone, as the ice had the effect of cutting them to pieces, and steel runners were apparently not popular because they had a tendency to split in low temperatures and produced too much friction under the same conditions. There is no evidence to suggest that the Indian custom of shoeing the sled runners with a thin veneer of bone was ever adopted by the white dog drivers.¹⁰⁶ This was unfortunate as the Indian type of runner proved particularly well-suited to northern conditions.

A "gee-pole" was lashed to the side of the Yukon sled.¹⁰⁷ Approximately six feet long and three inches thick at the butt end, the gee-pole extended upward from the front of the sled at an angle of 45 degrees. The gee-pole facilitated steering and was used to keep the sled upright. It was also used to break the sled loose when the runners froze to the surface and as a braking device when going down small hills.¹⁰⁸

The second style of sled, the basket sleigh, originated among the Indians of the lower river. It was larger than the Yukon sled, varying in length from 8 to 12 feet and in width from 20 to 22

inches, and the body was 6 inches above the runners. Unlike the Yukon sled, the carrying surface did not overhang the runners. The basket sleigh had a light, flexible frame that was made from hickory, oak or white birch. The sides of the sleigh consisted of narrow wooden uprights set at two-foot intervals, a foot high in the front and two feet high in the rear. Each side was covered with a rail and the interstices of the frame were filled with a netting of cord or rawhide. Instead of a gee-pole, the basket sleigh was fitted with a plough-handle arrangement that extended from the middle of the sleigh to the back.¹⁰⁹

The load that could be drawn by a dog team depended on two factors: the dogs themselves and the condition of the trail. Under optimum conditions a team of five native dogs could pull a sled with a thousand-pound load a distance of 15 to 25 miles in a single day. Generally speaking, the sled was loaded in the ratio of 160 pounds to each dog.¹¹⁰ In loading a sled, weight was distributed so that the heaviest part was in the front. The load was placed on a light canvas sheet approximately eight feet by ten feet which covered the bottom of the sled. Once loaded, the canvas sheet was drawn up and wrapped around the load. Two long ropes at the end of the sled were then woven back and forth through the side ropes to secure the sled. For extra security, these ropes were woven through V-shaped ropes at each end. After this was done, water might be splashed over the rope joints, to freeze them together.¹¹¹

Only after the sled had been loaded were the dogs harnessed and the traces hitched. During the gold rush the standard dog harness consisted of a leather collar with a back band and a belly band to which the traces were attached. In harnessing the team, a dog puncher started with the lead dog and worked back to the sled dog. The dogs were generally arranged in tandem fashion rather than in pairs. Once harnessed, the dogs were hitched together, starting with the lead dog, until the dog in front of the sled dog was reached. Then the dog in front of the sled dog was harnessed to a whiffletree at the front of the sled. The sled dog was hitched separately to the whiffletree with a short pair of traces so as to enable him to jump out of the line and pull at right angles when the sled went around a corner.¹¹²

When the sleds were loaded, the dogs were coupled closely together to increase their pulling power. Another set of rings at the junction of the back band and the traces was used when the sleds were empty. This gave the dogs an additional 18 inches between them and made it easier for the dogs to run. Three miles an hour, or the speed at which a man could walk, was usually as fast as the dogs could go when the sled was loaded; when the sled was empty a dog team travelled at the rate of six miles an hour.¹¹³

To reduce friction the runners were always iced while on long trips a sail was sometimes used to take advantage of fair winds.¹¹⁴

While it was not uncommon for a thousand pounds to be loaded on a single sled, the experienced dog punchers generally used three sleds when hauling heavy freight. This was done in order to distribute the weight over 21 feet, thereby allowing a greater degree of mobility and speed. The sleds were connected by cross-chains. Hitched together, the three worked as one as the mode of connection forced each sled to follow in the track of the one in front. The sleds in these "sleigh trains" were reinforced with iron braces to reduce stress. As with the single sleds, weight was distributed so the heaviest part was in the front, the usual distribution being six hundred pounds in the first sled, four hundred in the second and two hundred in the third.

If the sleds tipped over, they were righted one by one. On long hills the sleds were unhitched and hauled up separately. On steep descents the dogs were unsnapped and the sleds allowed to go down on their own power. To reduce the momentum of a sled on a downhill run the driver rode on the gee-pole by leaning back on it and using his feet as a brake. This was considered the most dangerous part of sledding. Several fatalities occurred and in one instance a driver was impaled, but riding the gee-pole was a necessary evil. Mechanical braking systems were tried, proved unsatisfactory, and abandoned.¹¹⁵

Over-sweating was a constant problem when the dogs drew heavy loads. To offset this condition, the driver frequently stopped and unhitched the team to enable the dogs to cool off by rolling around in the snow. This sudden chilling had no apparent ill effects on the dogs. The most difficult surface for the dogs to work on was ice. Their paws, warmed by the strain of pulling, would melt the ice, allowing frost balls to form under their nails and between the pads. These frost balls cut the paws like broken glass. As soon as the driver saw a dog limp he would stop the team and thaw out the pads by putting the dog's foot in his mouth, after which he dried the foot with his shirt. Frequently an outside dog, ignorant of the consequences, would stand still on the ice when the team was stopped, causing his warm feet to freeze solid to the trail.¹¹⁶

On long trips, especially between Dawson and Skagway, a dog puncher had to carry sufficient provisions to last him throughout the trip. These included fur robes, blankets, a small tent, a small sheet-iron stove, food for the party and for the dogs, cooking utensils, snow goggles and snow shoes. Within these limits, the weight of the outfit was reduced to the bare minimum as comfort was sacrificed to speed. On the trail, men wore drill parkas, fur caps which covered the ears, and heavy wool-lined, moose-skin

mitten. Several pairs of moccasins were carried as it was necessary to keep feet dry at all times. Drill parkas were favoured over fur ones because the latter were generally found to be too warm. Fur parkas were worn at night and in the early morning when the temperatures were lower.¹¹⁷

On the trail the drivers and the passengers drank tea exclusively as it was considered to be more nourishing than either coffee or cocoa. Liquor was never touched as it dulled the senses.¹¹⁸

Travel on the Yukon River was difficult. The water did not freeze evenly and the surface was rough. Wind and snow exacerbated the surface conditions. Wherever it was necessary to break trail, the driver would precede the dogs and pack the snow with his snowshoes. The trip to the coast took 30 days. If light freight or express were carried, two sleds might be taken, one of which could be dropped along the way once the driver and team had consumed enough food to permit the balance of the supplies to be transferred from one sled to the other. During the late fall and early spring when the ice was not frozen during the day, it was customary to travel at night.¹¹⁹

It was no coincidence that both the gold rush and the golden age of dog transport occurred at the same time. The gold rush created the need for a winter transportation system, a need that had been practically nonexistent before 1896, and the demand created thereby could be met by the only available resource – dogs. As a result, dogs and dog teams became synonymous with winter transportation between 1897 and 1900. But the gold rush also created pressures that were to limit the supremacy of the dog to a brief interval. Although the dog was well-suited to northern conditions, the gold rush underlined the fact that dogs could not satisfy northern transportation needs adequately because of their size and pulling capacity. Once the horse was introduced, it was only a matter of time before it would supersede the dog. By 1900–01 the transition was pretty well complete. Nevertheless, the dog retained certain transportation functions which extended well beyond 1900. Of these, the most important were communication with outlying settlements not served by roads and in Mounted Police winter patrols.¹²⁰

VIII

Although horses had been used in the Yukon prior to the gold rush, it was not until 1900, after it had been demonstrated that the horse could successfully survive the Yukon winter, that horses were to supplant dogs as the principal medium of overland transportation. Before 1896 it was generally believed that no horse could survive the northern winter on a diet of native hay and the demand for horses had not been great enough to warrant the ex-

pense of importing hay for the winter season. In Circle City, where horses had been used to pack supplies to the mines, the entire horse population had been killed each autumn in order to prevent mass starvation. Between 1896 and 1898 when the demand for horses increased enormously, the exorbitant price of hay, which fluctuated between \$400 and \$1,200 a ton, discouraged large importations of horses to meet the increased demand. Yet despite inflated prices and the limited seasonal value of horses, the teamsters who operated during the gold rush managed to realize substantial profits. Freight charges for horse cartage were high, ranging from a flat rate of 45 cents a pound on gold, to 25 cents a pound from Dawson to anywhere on Bonanza Creek, 35 cents a pound to Eldorado, and 50 cents a pound to Hunker Creek for general merchandise. One observer estimated that each horse employed in Dawson during the gold rush earned \$4,500 a season for its owner.¹²¹

In spite of the horse's physical superiority – a horse could draw or pack at least five times the weight that a dog could¹²² – the dog retained its status as the Yukon's primary work animal until 1899. Until the question of winter survival could be answered affirmatively, the use of horses would always be limited. Although William Ogilvie had reported in June 1896 that horses "have been in use here, packing to the mines in the summer and hauling wood in the winter for several years . . . notwithstanding that they live only on the coarse grasses of the country," it was not until the winter of 1897–98, when 12 horses were brought in from Circle City and Forty Mile and kept working on a diet of native hay and sheltered in stove-warmed tents, that it was popularly believed that the horse could survive the cold.¹²³ The successful wintering of a number of horses in 1898–99 by the North-West Mounted Police confirmed the year-round practicality of horse transport and was followed by the importation of large numbers of horses the following spring.¹²⁴ In the summer of 1899 the cutting and drying of local red-topped grass assumed the proportions of a small industry in preparation for the winter ahead and that winter over one thousand horses were worked.¹²⁵ The primacy of the dog had been broken.

IX

Prior to the gold rush, no internal transportation system of any consequence existed in the Yukon. To be sure, the basic outlines of a domestic transport system based on water had been established as early as the 1870s by such men as McQuesten, Harper and Mayo, but the overriding consideration of the pre-gold-rush era had been to develop an efficient system of communication with the outside. Communities that were little more than tiny trad-

57-59 Some typical examples of turn-of-the-century teamster operations. Figure 57 shows a team hauling a heavy boiler to the creeks. (*Yukon Archives*.)

57

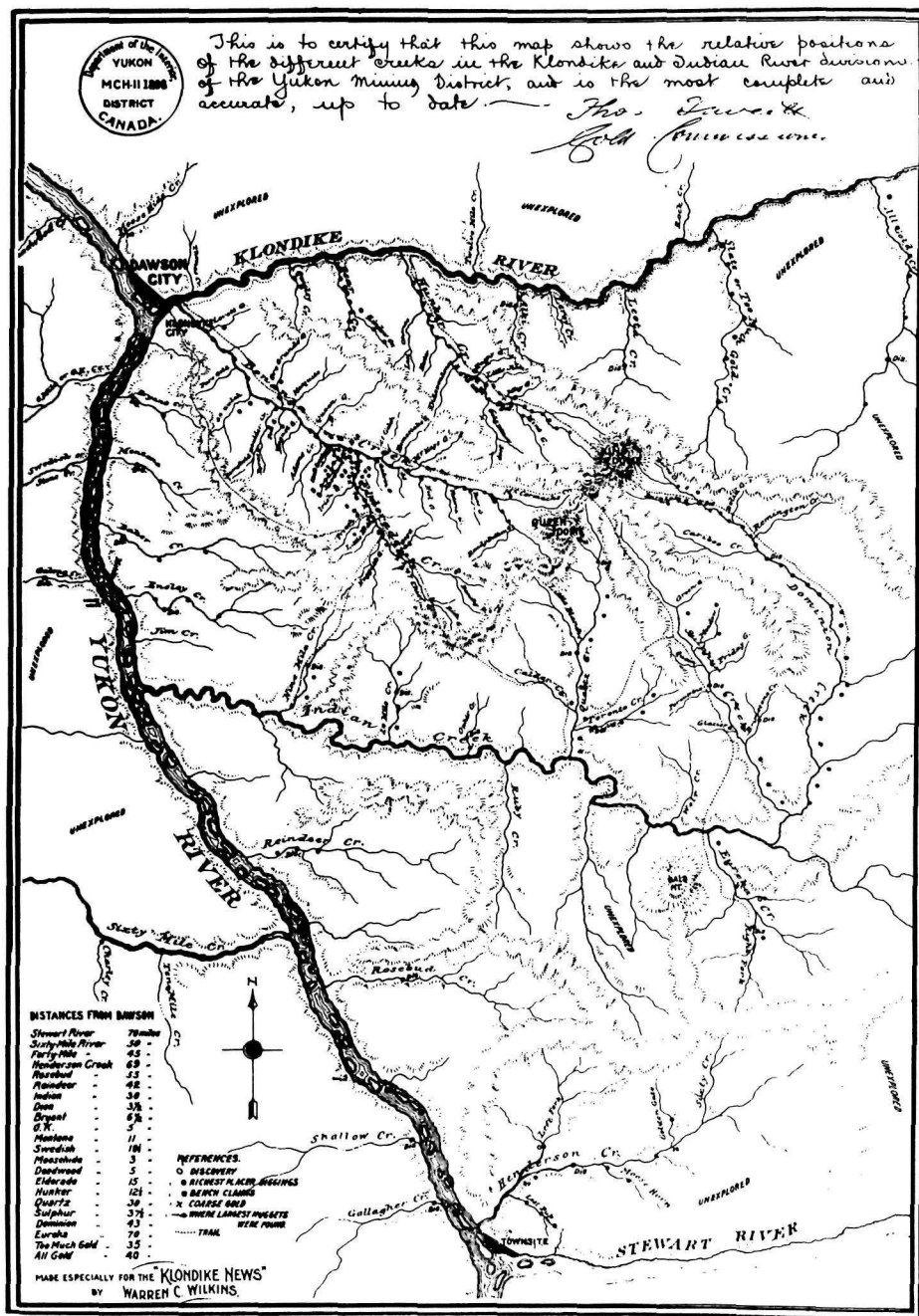


58



59





ing posts, a small, constantly floating and ever fluctuating population, and the seasonal nature of the mining industry – each characteristic of the Yukon before 1896 – were not in themselves sufficient to create an internal transportation system. Under gold-rush conditions, however, the pressures for an internal transportation system mounted, only to be increased by the problems posed by the shallow, unnavigable creeks that linked Dawson and the gold fields, and the introduction of horses.¹²⁶ Taken together, these factors generated a need for a system of roads and trails with subsidiary bridges and ferries to connect the Klondike mines with Dawson on a year-round basis.

Initially, road construction was undertaken by the individual miners and the teamsters who operated between Dawson and the mines. Between 1897 and 1898 a footbridge was built between Dawson and Klondike City, a scow ferry was placed in operation on the Klondike River connecting the north shore with a point just west of the mouth of Bonanza Creek, and a road was cut up Bonanza valley to Grand Forks, located at the confluence of Bonanza and Eldorado creeks.¹²⁷ Nevertheless, it soon became apparent that the private sector was neither willing nor able to deal adequately with the road requirements of the district.

Given the avarice which underlined the stampede, this is hardly surprising. Men had not rushed to the Klondike to establish a permanent community replete with a system of roads: they had come in search of gold. Once successful, and all thought they would be, they planned to leave as quickly as possible. As a result there was no inducement to improve the trails which connected Dawson with the mines apart from the desire of each individual to facilitate his own movement. The only other alternative within the private sector, a toll road, was tried and proved a failure. As the newspaper campaign against the Pioneer Tramway Company demonstrated, neither the miners, the merchants nor the teamsters were interested in a solution of this type.¹²⁸

In the meantime the one road between Dawson and Grand Forks had deteriorated to the point where "mud and water were up to the knees in many places." Along with the inflationary pressures set off by the stampede, the condition of this road was responsible for the generally exorbitant freight charges characteristic of the gold-rush period. Exasperated by inadequate transportation facilities, the community began to agitate the issue with the demand that government assume responsibility for road construction and maintenance. Citing the British Columbia gold camps as a precedent, many petitioned the gold commissioner for redress. Finally, the much-vilified gold commissioner, Thomas Fawcett, advised his superiors that there "ought to be some assistance in building roads."¹²⁹

Fawcett's recommendation was acted upon in 1899. In that year the first government-built road in the territory was completed between Bonanza and Hunker creeks, with branches to Gold Bottom and Caribou. This was followed in 1900 by the construction of a new road to join Dawson and Grand Forks. Seventy-seven miles of wagon road and 170 miles of sled trails were built between 1899 and 1900.¹³⁰

Certain soil characteristics made the construction of roads a complicated undertaking. The roads that were built in the area contiguous to Bonanza Creek, an area that was densely populated and hence in need of good roads, required a great deal of drainage, much corduroy and substantial quantities of fill. As a result, these roads were always better in the winter after the first snowfall than in the summer.¹³¹ The hard-packed snow offered a smooth, regular surface which permitted an ease of movement not to be found at other times of the year and eliminated the dust problem that was ever present during the summer months. During the spring, summer and autumn months, travel, whenever possible (which admittedly was not often), was done at night to take advantage of the stabilizing effects which lower temperatures had on the road surface.¹³² But climate and soil characteristics were not the only drawbacks to road construction during this period. Unusually high labour costs reinforced the tendency to temporize with the road problem in the belief that the problem would disappear once the gold rush had spent itself.¹³³

Despite these obstacles, the foundations of an internal overland transportation network were well on the way to being realized by 1900. This new development, marking a significant stage in the evolution of the Yukon transportation system, was accompanied by direct government involvement through the appropriation of public money to pay for road construction and maintenance. The assumption of this responsibility was also attended by a change in attitude on the part of the dominion government, which had previously tended to view the Yukon and the gold rush as passing phenomena. Nevertheless, the government's admission of its responsibility did not settle the roads question to the satisfaction of many Yukoners. Rather, it transferred the issue to the political arena – an arena already characterized by a substantial amount of anti-government feeling.¹³⁴ Further, this dependence on the government was to have long-term implications which could not be foreseen in 1900 and which were to be exacerbated by the Yukon's territorial status. So long as the central government could regard the Yukon as a hinterland to be profitably exploited, the essential road requirements of the territory would be satisfied, but once the Yukon became a millstone around the neck of the imperial power,

61 A suspension bridge over the Klondike River and freight scows on both banks, Dawson, 1899. (*Yukon Archives.*)



as it did after 1914, the domestic needs of the territory would be sacrificed to other priorities as defined by Ottawa.¹³⁵

X

The Klondike gold rush altered irrevocably a substantial portion of the pre-gold-rush transportation system even though that system had been largely responsible for the scope and nature of the great stampede. Dyea and the Chilkoot Trail, which had served almost a generation of pre-1896 prospectors as well as the majority of those who had rushed to the gold fields in 1897–98, virtually disappeared in the wake of events that transpired during these years. Their demise was offset, however, by the rise of Skagway and the White Pass route, thereby vindicating Captain William Moore's ten-year act of faith that Skagway would one day replace its Lynn Canal rival as the gateway to the Yukon. For this the railroad was totally responsible.

The railroad survived as the most lasting legacy of the gold rush. That life in the Yukon did not return to its pre-1896 state is attributable in full to its existence. Without the railroad it is difficult to conceive of the mining industry adapting as successfully as it did to the conditions that prevailed after 1900 and without this adaptation it is inconceivable how the Yukon could have sustained the population that remained. It is inconceivable, moreover, that thousands would have chosen to remain had they been compelled to accept eight months of complete isolation – a fate that was theirs had the railroad not been built.

The railroad was also responsible for the subsequent shift in trade away from Saint Michael to the upper river and the emergence of Whitehorse as the transportation hub of the territory. Whitehorse's evolution to its present status was born of the decision to locate the railroad terminus there.

Less spectacular but no less important was the need for winter transport which the gold rush created. Before the stampede, transportation and communication had been limited to the summer months. This proved adequate so long as the traditional prospector and his values prevailed, but both were overwhelmed by the great influx of 1897–98. The introduction of overland transport to satisfy this seasonal requirement was an event of long-term significance and added another dimension to the Yukon transportation system.

Recession and Recovery

I

Midsummer 1899:

In Dawson, log cabins could be had for the taking as steamboat after steamboat, jammed from steerage to upper deck, puffed out of town en route to Nome. The saloon trade fell off; real estate dropped; dance halls lost their custom. Arizona Charlie Meadows announced that he would float his Palace Grand in one piece down the river to the new strike. Jacqueline, the dance-hall girl, complained that her week's percentage would hardly pay her laundry bill. In a single week in August eight thousand people left Dawson forever . . .

And so just three years, almost to the day, after Robert Henderson encountered George Carmack here on the swampland at the Klondike's mouth, the great stampede ended as quickly as it had begun.¹

The facile conclusion has long been drawn that the end of the great stampede marked the end of the Yukon Territory. A popular conception persists that shortly after 1900 the Yukon somehow disappeared, like some North American Atlantis, only to reappear in the 1940s and 1950s when attention was turned to the construction of the Alaska Highway and man's insatiable appetite for natural resources once more kindled his interest in the North. In the interim, it is generally believed, nothing happened.²

Except for a handful of personal reminiscences which make no pretence of completeness³ and a number of studies pertaining to the Alaska Highway, this view has been reinforced by a paucity of written history for the post-gold-rush period. All but ignored in territorial historiography is that a number of significant themes and events shaped the course of Yukon development after 1900.

II

In the immediate post-gold-rush period the Yukon Territory entered an era of protracted economic decline that was to last, with only brief interruptions, until the 1950s. Although several factors contributed to this reversal in the territory's fortunes, it was the inherent instability of the gold-rush economy, not the exhaustion of the gold fields, which precipitated the decline. Interestingly enough, of the 250-odd million dollars that the gold fields ultimately produced, more than 75 per cent was taken out after 1900. What distinguished the gold rush from the post-gold-rush period was not the existence of gold, but the mode of mining peculiar to each. The tenfold increase in gold production that attended the gold rush was the product of a massive input of labour supplied by the Klondike stampede.⁴ This increase in the labour

market added a new dimension to the economy – “sheer numbers of people demanding the amenities they had enjoyed in the south.” As a result, a variety of service-oriented enterprises encompassing medicine and the law, business, commerce, newspapers and entertainment evolved.⁵

The pressures toward inflation, already loosed by the free-spending hysteria that overcame the gold camp, were given a powerful artificial stimulus by the regulation promulgated by the territory’s first commissioner, James Walsh, that “no person was to come into the city [Dawson] who had not at least \$750 in money or money’s worth.” Placing the population of Dawson at thirty thousand in 1898 and taking \$1,000 as the average sum brought into Dawson by each individual, one official estimated that this “set free within a very small area the enormous sum of \$30,000,000.” This in itself was enough to propel an economic boom. At the same time, the mining industry and the demands of the local population gave a strong impetus to other industries based on lumbering and coal mining.⁶

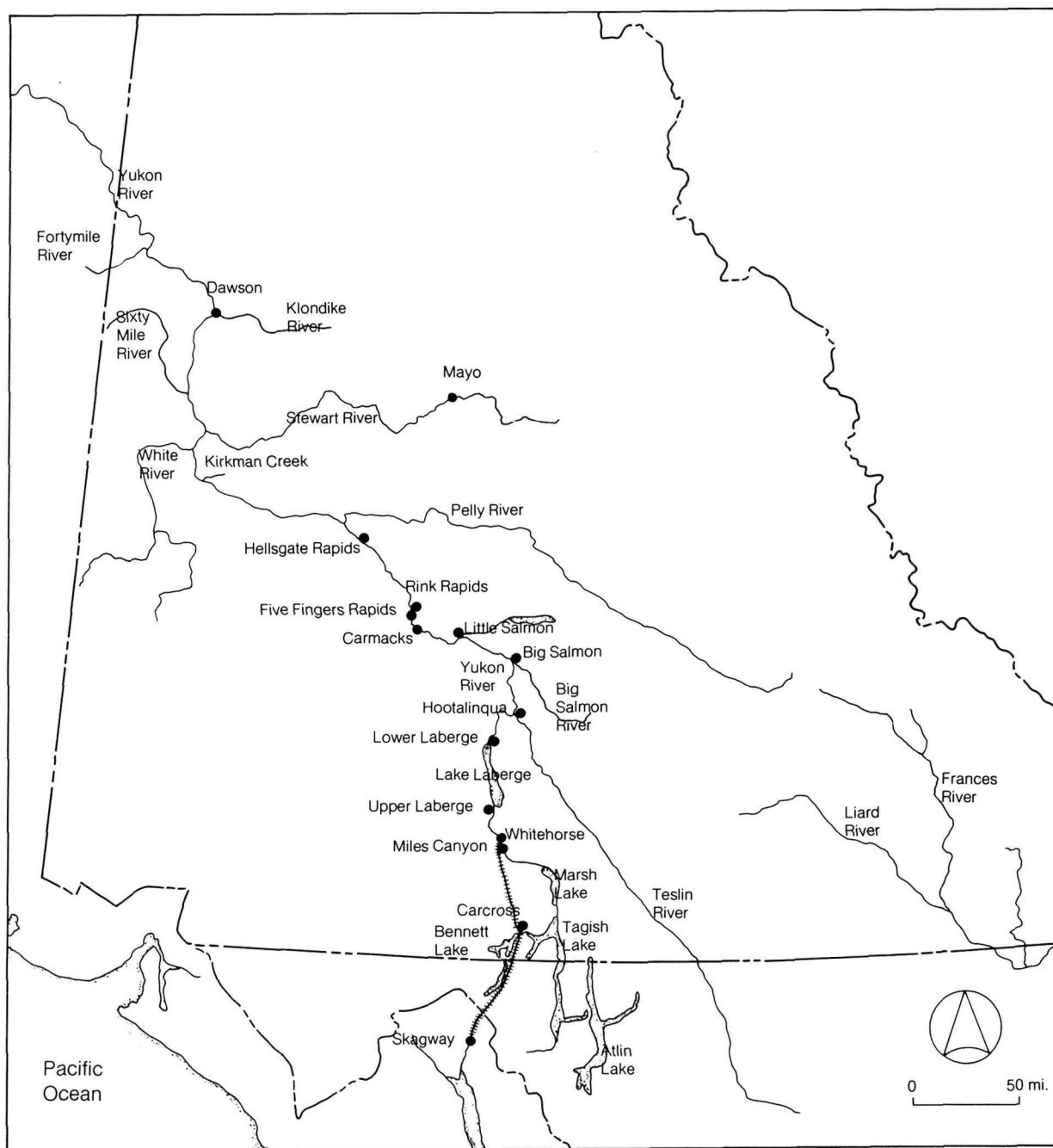
Yet for all of these stimuli, the foundation upon which the gold-rush economy rested was fragile. As the rich, easily accessible gold deposits were exhausted, production declined and the population, no longer having the means to support itself, decreased. By 1902 the gold-rush economy, sustained in large part by rising gold production and a rapidly expanding gold population, had collapsed.⁷

As early as 1899 there were symptoms of the impending decline when many abandoned Dawson for the new gold fields in Nome, Alaska,⁸ but the severity of the decline was not clearly apparent until the early 1900s. By then most of the trading and transportation companies that had sprung up during 1898–99 had disappeared and by 1904 real estate values had plummeted to less than one-third their 1899 valuations. By 1904 considerable property was vacant on Front Street in Dawson and in the words of one observer, “undoubtedly . . . permanently vacant.” Its depreciation, he added, “is so great as to leave it practically valueless except as to the material contained in the buildings.” That summer “many substantial men . . . and many more of those who have constituted our floating population” left Dawson for Fairbanks, Alaska, and another chance at fortune. But the paradoxical legacy of the gold rush was not that people left the Klondike after 1899, but that many people remained. Those who did leave were in the majority, but their departure was predictable. They included those stampedeers whose single motivation was, as J.R. Lotz has noted, to “clean up and clear out” and the old-timers who had gone to the Yukon long before news of the Klondike discovery reached the outside. Even as one government official was

confidently noting the evolution of Dawson “from an uncertain, unstable and excited mining camp to a steady, permanent and prosperous community,” the old-timers “began to get an uneasy sensation in their spines. It was as if the whole cycle of their experience was being repeated.”⁹ These men had spent their entire lives living on the fringes of civilization, only to move on as civilization progressively encroached upon what they considered to be the last outposts of their freedom and independence. And now civilization had overcome Dawson. Like those who had been moved by the maxim “clean up and clear out,” the old-timers recognized that their time to leave had come.

But the end of the gold rush neither presaged the end of mining in the Yukon nor did Dawson follow the classic pattern of other 19th-century placer gold-rush centres and become a ghost town. It is more accurate to regard the post-gold-rush period in the Yukon as rather one of severe dislocation and readjustment to new circumstances than demise. The superstructure of the gold-rush economy had been both superficial and unstable and it disappeared. What followed was a rationalization and a consolidation of the Yukon’s economic base. The period 1900–14 was not only one of profound economic change precipitated by a decline in production, it was Dawson’s golden age as well. During that time anarchy gave way to order, ostentation gave way to studied elegance, and gambling houses, drinking parlours and prostitutes were gradually replaced by fraternal organizations, churches and schoolmarms. As was to be expected, the mining industry pointed the way. After 1901 the labour-intensive, “poor man’s” methods of mining characterized by the pan, the rocker, the sluice, wood burning and the individual claim were superseded by capital-intensive techniques based on the dredge, hydraulic monitors, steam thawing and concessions. This conversion from primitive extractive methods to highly sophisticated extractive techniques based on machinery gave the area a stability and a security it had never known before.

The impact of these changes on the transportation industry was not so great as might be initially supposed. So long as gold mining over an extensive area continued and so long as a population large enough to support and be supported by the mining industry remained, transportation was a basic need. This need did not end in August 1900 when the residents of Dawson memorialized the governor general for better transportation facilities; rather it was only the beginning.¹⁰ This is not to suggest, however, that the aftereffects of the gold rush bypassed the transportation industry. As was noted above, most of the transportation companies that had sprung up to serve the needs of the gold-rush population during 1898–99 had abandoned the field by 1901. Nevertheless,



the quality of transportation in the Yukon did not deteriorate after 1901. If anything, it improved as attempts were made to reduce the cost-price squeeze and open up new areas for economic exploitation in the territory.

III

The Yukon River continued to be the most important transportation artery in the Yukon between 1900 and 1914 just as it had been through the fur trade, early prospecting and gold-rush phases of Yukon history. The one significant modification that occurred during this period was the completion of the White Pass and Yukon Route railway from Skagway to Whitehorse in July of 1900. With the completion of the railway, a practical alternative to the lower river route via Saint Michael came into existence. But the emergence of this alternative did not diminish the river's role; instead, it enhanced it and gave the river a greater utility. The river itself remained the heart of the Yukon transportation system. For this reason, an understanding of its peculiar qualities is a necessary prerequisite to any examination of the evolution of transportation in the territory.

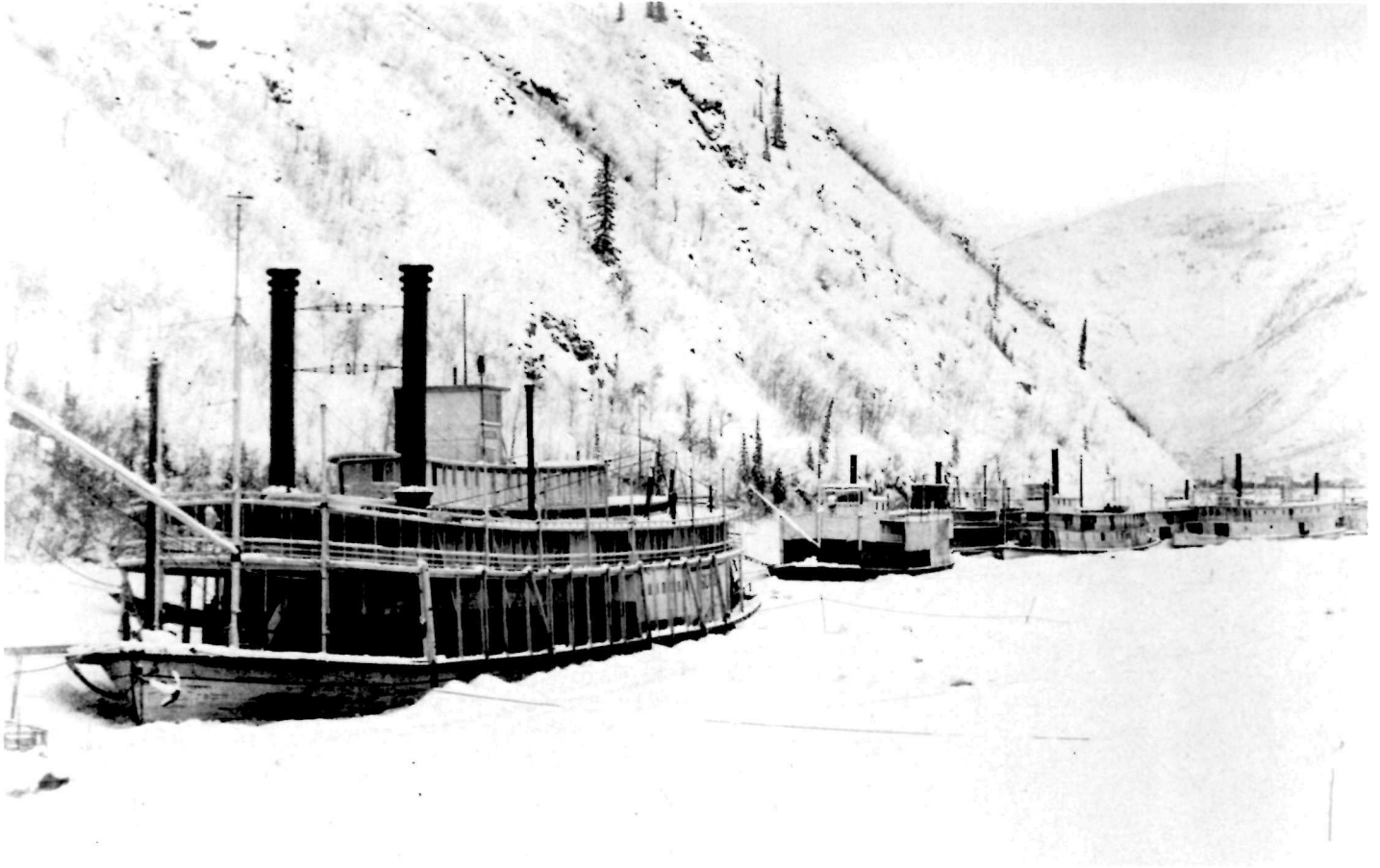
The Yukon River, 1,993 miles in length, is the fifth-largest river in North America.¹¹ Authorities differ as to its exact source, some designating it as Lindeman Lake, others citing the Nisutlin River and Summit Lake.¹² From its source, the Yukon River follows a tortuous course to its mouth on the Bering Sea off Norton Sound in Alaska. For half of its length the river flows in a northwesterly direction through the central plateau of the Yukon Territory. At the edge of the Arctic Circle it shifts abruptly to the southwest as if deflected by the intruding waters of the Porcupine, and from there it flows on inexorably to the sea. The peculiar ambulations of the watercourse – here like a corkscrew, there like the furrows in a field – are suggestive of the contradictions which characterize the river itself. Inordinately circuitous and difficult to navigate, the river nonetheless provides an inland waterway through the heart of Alaska and the Yukon, the only fissure in an otherwise impregnable land mass. Long by any standard of measurement, the river is shallow through most of its extent, the consequence of a semiarid climate. Swift on the upper section, the river rapidly loses velocity as it spills onto the Yukon plateau, and from there meanders lazily to the sea.¹³ Unlike any other river of comparable economic importance, certain sections of the river on the Canadian side of the international boundary line have different high-water periods during the year. The section of the river between Marsh Lake and Fort Selkirk, formerly known as the Lewes, and the section below White River reach their high-water marks in July and August, after the solar energy of the summer months has

melted the glacial ice that feeds them. On the other hand, those sections below the river's snow-fed tributaries, the Teslin, Pelly and Stewart rivers, have their high-water periods in late spring, after the annual spring break-up of the ice.¹⁴

The railway eliminated the obstacles to navigation at Miles Canyon and Whitehorse, thereby furnishing the necessary conditions for a successful challenge by the upper route for sternwheeler traffic on the Yukon River.¹⁵ After 1900 the upper river virtually superseded the lower river as the primary gateway to the interior and by 1915 its traffic monopoly was practically complete. Despite this weighting of the balance at the expense of the Saint Michael route, however, serious impediments to navigation on the upper river between Whitehorse and Dawson existed. On Lake Laberge, the opening of the navigation season was delayed each spring while sternwheeler crews anxiously waited for the ice on the lake to rot and break up, some two weeks after the ice on the river below the lake had gone out.¹⁶ It was not until the early 1920s that this problem was overcome and the navigation season prolonged by the successful damming of the headwaters on the lake. At Five Finger Rapids, approximately 150 miles below Laberge, four massive knuckles of rock jutted out the water, ready to smash the sternwheeler whose unwary pilot had failed to hug the east bank. Below the Five Fingers were the sunken reefs of the Rink Rapids. At Hellsgate Rapids, just above Fort Selkirk, the island-studded river appeared to flow in greater volume along the east bank, but the pilot who failed to use the navigation channel near the west bank did so at his peril.¹⁷ Below Kirkman Creek, a small tributary that was located above the confluence of the White and Yukon rivers, deposits of detritus caused the navigation channel to shift throughout the season. These were the major obstacles to transportation, apart from the climate, on the upper river and this was the highway that was to be internal life line of the Yukon Territory until 1950.

Ownership of the railway placed the White Pass and Yukon Route in an excellent position to exploit the transportation potential of the upper river route to Dawson. This potential was recognized as early as 1899 by the directors of the company who had had either the perspicacity or the good fortune to charter the company as a general transportation line which included the right to build wharfage and docking facilities.¹⁸ With the collapse of the gold-rush economy and the resultant withdrawal of most of the transportation companies that had evolved to meet the demands of the gold-rush population, the way was cleared for the White Pass and Yukon Route to enter the river transportation business.

63 Steamers in winter quarters at Dawson.
They were wintered in a slough just
above the confluence of the Klondike
and Yukon rivers. (*Yukon Archives.*)



The decision to set up a river division within the company was precipitated by the general chaos which prevailed on the river during 1900. As the sole transportation company providing service from tidewater at Skagway to the head of navigation on the Yukon River at Whitehorse, all traffic going into and out of the Yukon via the upper route went by the White Pass and Yukon Route railway. This led to innumerable problems at the transfer point at Whitehorse where

*through shipments of goods were split up, Customs papers lost, goods stolen on the boats . . . Many of the boat owners were not responsible financially, so that the passengers with through tickets and the goods owners with through bills of lading naturally preferred to make their claims against us [the White Pass and Yukon Route], leaving us in our turn to recover from delinquent boat owners – if we could.*¹⁹

These difficulties convinced the first president of the company, S.H. Graves, that in “self-defense we must organize our own river service.”²⁰

The company’s plight was not nearly so severe as Graves’s statement would tend to imply. To be sure transshipment mix-ups gave cause for concern. But the company was also aware that the setting up of a river division would result in the elimination of any serious competition by virtue of the company’s ownership of the railway. With Tancred’s approval, a river division was subsequently organized and styled the British Yukon Navigation Company.²¹ During the winter of 1900–01 the company built a shipyard in Whitehorse and a repair yard in Dawson.²² Three boats were purchased from the Canadian Pacific Railway Company, the machinery and fittings from which were installed in new boats built at the British Yukon Navigation Company’s Whitehorse shipyard.²³ On 1 May 1901 the British Yukon Navigation Company acquired the fleet of its largest potential competitor, the Canadian Development Company, and shortly thereafter extended its operations to Atlin, British Columbia.²⁴

The economic vicissitudes of the post-gold-rush period had a serious impact on the numerous transportation companies plying the Yukon River. After 1901 most of them withdrew from the field, unable to compete with the White Pass and Yukon Route’s complementary railway and sternwheeler service. A number managed to sell their boats to the British Yukon Navigation Company and by 1903 all but three boats on the upper river were owned by the White Pass subsidiary.²⁵ But though the post-1900 economy had serious implications for the transportation companies that had sprung up to serve the demands of the gold rush, it was of minor consequence for the Yukon transportation system as a whole and was not without its benefits. The British Yukon Navigation Com-

pany enjoyed a period of relative prosperity between 1901 and 1914 although this prosperity occurred at the expense of competitive conditions on the upper river. When the conversion to capital-intensive mining took place after 1903, the transportation legacy of the gold rush, in the name of the White Pass and Yukon Route, played a vital role. Without the complementary facilities of the railway and the post-gold-rush sternwheeler fleet offering through rates from tidewater to Dawson, the transition to capital-intensive mining would likely have occurred on a much reduced scale.

By 1907, having pursued an aggressive policy of eliminating common carrier competition, the British Yukon Navigation Company enjoyed a monopoly on the upper river limited only by a single independent company operating one sternwheeler between Whitehorse and Dawson. In the same year, wharfage rents in Dawson were brought into line with prevailing conditions by reducing them 50 per cent.²⁶

While transportation on the upper river was adapting itself to the changing transportation requirements of the territory and exhibiting a visible trend toward monopoly, a similar process of adaptation was occurring on the river below Dawson. Before 1901 the lower river had been the principal supply route to the Klondike gold fields. After the completion of the railway, however, Skagway replaced Saint Michael as the main port of entry to the Yukon. The impact of the railway coupled with the collapse of the gold-rush boom were such that no transportation company on the lower river showed a profit for its operations during the 1901 navigation season.²⁷

To strengthen the competitive position of the Saint Michael route and to offset the depression that hit the transportation industry on the lower river after 1900, the Alaska Commercial Company, theretofore the largest trading and transportation company in the Yukon and Alaska, merged with the International Marine Company and Alaska Goldfields in 1901. The new firm’s merchandizing and transportation operations were then separated into two distinct companies, the Northern Commercial Company and the Northern Navigation Company. Shortly thereafter the Northern Navigation Company bought out the Seattle-Yukon Transportation Company. In 1906 the North American Transportation and Trading Company, the second-oldest company in the Yukon, sold its sternwheelers and Saint Michael terminal to the Merchants-Yukon Transportation Company.²⁸

The elimination of competition through merger prolonged the life of the Saint Michael route. As well, the lower river possessed certain competitive advantages which, if not sufficient to turn the tide of Yukon trade away from the upper route, at least deferred

64-66 The evolution of Whitehorse's waterfront, 1899 to 1901. The shipyard is on the right in Figure 66. (*Yukon Archives.*)

64



65



66



65

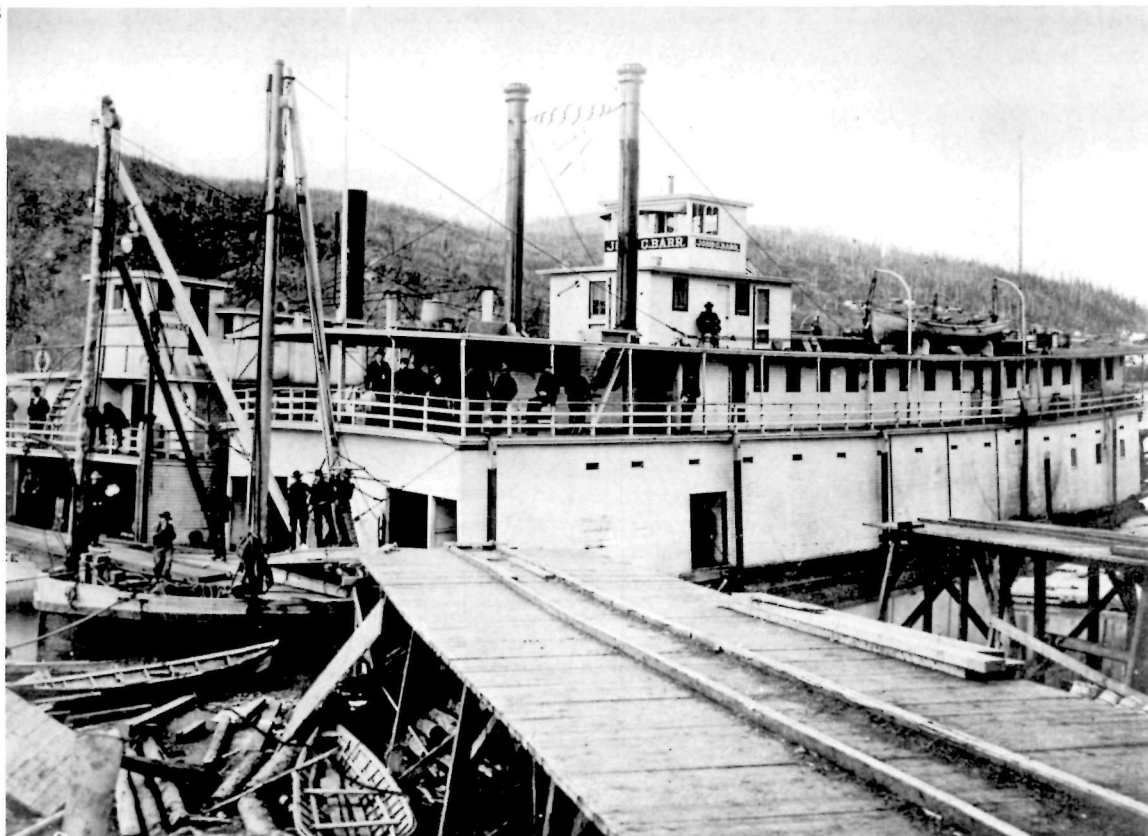


68-70 Typical lower river steamers. Not only size distinguished the gold-rush boats of the lower river from those of the upper Yukon. Twin stacks were fairly common on the former, absent on the latter. The pilot house was usually located further aft on the lower

river boats and on some of the larger ones the gangway, or swinging stage, was carried forward suspended from a boom rather than on the foredeck as on most upper river vessels. Portions of the main deck were often open on the former, almost always completely en-

closed on the latter. Lower river vessels were more ornamental and resembled sternwheelers typical of the American Midwest, whereas the boats on the upper river were similar to river boats of British Columbia, Oregon and Washington state. (*Yukon Archives.*)

68



69



70

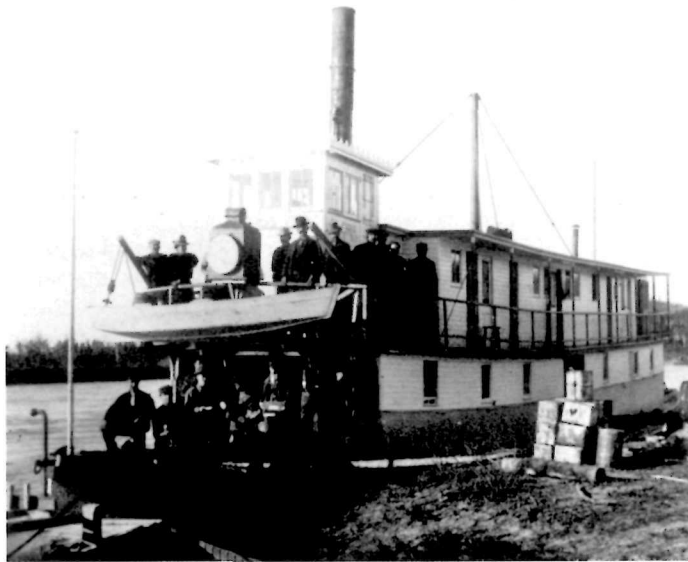


67

71-74 Typical upper river boats. The *Flora* (Fig. 71) was built at Bennett in 1898 for the Bennett Lake and Klondike Navigation Company by Bert Fowler, who later became shipyard foreman for the British Yukon Navigation Company. The *Columbian* (Fig. 72)

was built at Victoria in 1898 by John Todd, who built a number of vessels for the Yukon River. The *Dawson* and *Selkirk* were built by the British Yukon Navigation Company in 1901 at Whitehorse. (*Yukon Archives*.)

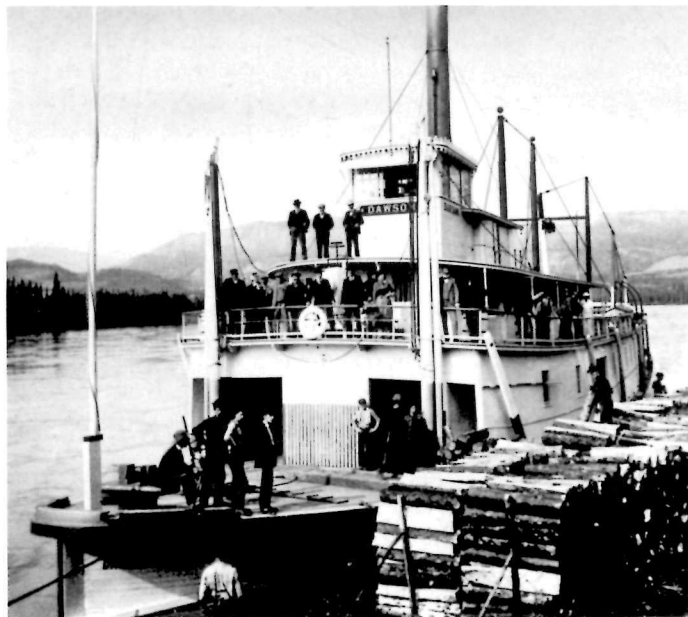
71



72



73



74



the lower river's demise. To begin with, larger boats could be used on the lower river. Second, in supplying Fairbanks, lower-river companies effectively cut the length of their supply lines to Dawson by half. Third, some of the largest stores in Dawson were owned by transportation companies on the lower river whereas the White Pass and Yukon Route had no merchandizing outlets.²⁹ Finally, the "exorbitant" freight rates charged by the White Pass and Yukon Route alienated many Dawson merchants. As one of them declaimed, "look into Lower R[iver] shipping, the less we ship White Pass, the better for us."³⁰ But the repeal in 1904 of the law that had previously permitted the free shipment of Canadian goods from a Canadian port to Dawson via Saint Michael came as a serious blow to the transportation companies on the lower river.³¹

By 1912 business in the Yukon had contracted sufficiently to precipitate an open fight between the upper and lower river for the right to supply Dawson. The contestants were, appropriately enough, the Northern Navigation Company and the British Yukon Navigation Company. Much to the delight of the residents of Dawson, the first round in the contest was a rate war. The British Yukon Navigation Company then carried the fight into Alaska by putting two of their vessels, the *Alaska* and the *Yukon*, on the lower river to connect with Fairbanks. The Northern Navigation Company retaliated "by contracting on a continuous basis with heavy shippers for freight to be shipped via St. Michael." The prospect of mutual bankruptcy finally drove both companies to the bargaining table and on 10 April 1914 it was announced that the White Pass and Yukon Route, acting for its wholly owned subsidiary, the British Yukon Navigation Company, had purchased the entire river operation of the Northern Navigation Company.³² By 1914 the upper route had established hegemony on the Yukon River.

Although water transportation was primarily confined to the Yukon River during this period, there was some activity on the tributary streams. One of the more interesting features of this activity was the role played by government in diverting attention from the main watercourse to the tributaries through a policy of direct involvement in river navigation. Behind this policy was an attempt to diversify and decentralize the economy of the territory by opening up new areas for exploitation. In 1906 the Canadian government assisted prospectors going into the Pelly region by giving them free passage on Royal North-West Mounted Police steamers. This policy was expanded in 1907 when the commissioner of the territory announced that the government was prepared to subsidize transportation companies making trips up the Pelly and Stewart rivers. Although the subsidies were discontinued after 1908, they achieved the desired effect and by 1909 light-draft steamers were

operating on the Stewart, Pelly and Hootalinqua rivers. In 1909 as well, the Side Streams Navigation Company was formed. This company operated a small sternwheeler that supplied the White, Stewart and Pelly rivers and the Fortymile River up to the canyon.³³ While the opening up to navigation of the tributaries of the Yukon River did not result in the discovery of any new large mineral deposits, the side streams trade was an important addition to the meagre transportation facilities that had previously served the small communities on these tributaries.

The sternwheeler underwent certain modifications in design and engineering following the establishment of the British Yukon Navigation Company. In large measure this was because the physical characteristics of the upper river required boats of shallower draft and narrower beam than those that operated below Dawson. This requirement was not unique to the Yukon River; it obtained on virtually every major waterway in Canada and in the United States as steamboat service was extended upriver. Nor was it as dramatic as the change that had occurred on the Mississippi where the sternwheeler replaced the sidewheeler as traffic moved upstream. Outside of one reference which has never been verified, there is no record of sidewheelers having ever operated on the Yukon. Thus the evolution that took place on the Yukon was one of degree, not kind. The development of the Yukon steamboat paralleled the development of boats on rivers west of and tributary to the Mississippi – rivers that were narrower and shallower than the Mississippi. Considered as a prototype, the sternwheeler was more suitable to these smaller waterways since its rear-mounted paddlewheel and relatively flat-bottomed hull were conducive to operating in shallow water and the absence of sidewheels gave it a narrower beam than the lower Mississippi steamer and hence the ability to negotiate narrower channels. The stern-mounted wheel provided other advantages as well: it gave grounded steamers an opportunity to wash away sand from the hull by reversing engines; it was protected by the hull from snags and sweepers, and because it was designed for low water, it permitted the sternwheeler to land virtually anywhere along a riverbank without special docking facilities.

The sternwheelers that were built by the British Yukon Navigation Company were patterned after the "swift water" boats that operated on the Snake, Willamette and Upper Columbia rivers, rivers that more closely approximated travelling conditions on the upper Yukon.³⁴ They were designed to carry heavy cargoes downstream on a very light draft and to make the return trip upstream with light freight and fuel with the paddle wheel still "sufficiently immersed to take up the power of the engines without racing." This was accomplished by providing the boats with

75 Although it was built at Bennett, operated on the upper river and named for Canada's minister of the Interior, the *Clifford Sifton* was not a typical upper river boat. It had much in common with the lower river genre, an anomaly

explained by it having been built and owned by a Kansas syndicate. (*Yukon Archives.*)

76 Known affectionately as the "Old Gray Mare," the steamer *Whitehorse* plied the Yukon River for 53 years – longer than any other boat in the northern fleet. Built in 1901 and rebuilt in 1930, it operated until 1953. It was destroyed by fire in 1974. (*Yukon Archives.*)

77 Loading fuel onto the for'deck and into the freight house of a sternwheeler. Deckhands were on call 24 hours a day to perform this task. The hand trucks held approximately one-third of a cord of wood. (*Photo by B. Lesyk.*)



tremendous backing power so that sharp turns, narrow channels and swift currents could be negotiated without having to depend on the rudder alone. This backing power was not only used to reduce the speed of the boats on downstream trips, but to aid in steering as well.

To compensate for the "slide" of a single rudder, the company devised a system utilizing six rudders, three behind the paddle wheel and three between the wheel and the hull, that were controlled by a steam steering gear. This system permitted the efficient use of the steering apparatus whether the boat was going backward or forward. As a result, the steering of these vessels did not depend "as in other craft, on having steerage way; but on the movements of the stern paddle-wheel."³⁵

While the boats used by the British Yukon Navigation Company differed in size and capacity during this era, they did not, in most cases, exceed 170 feet in length or 35 feet in width. The larger ones carried between 200 and 250 tons of cargo on a draft of 4 feet. When empty they drew approximately 18 inches. On the downstream run they averaged 15 miles per hour, covering the distance between Whitehorse and Dawson in two days. The upstream voyage took four days. The boats had electric generators and were provided with spot beams to permit night travel during the period following break-up and just before freeze-up. The beams were only used on the upstream trip, however, because the swift current on the downstream run made night travel too hazardous. During the summer when darkness was not a problem, the boats were in operation 24 hours a day. Freight was carried on the main deck for ease of handling, with the result that the main deck came to be known as the "freight house." The engine room and boiler were also located on the main deck, in the stern and bow respectively.³⁶

These boats carried up to 150 passengers who were accommodated on the observation and upper decks. Passenger compartments were called staterooms, a term that originated with the Mississippi steamboats where the custom had been to paint the names of various states over the door to each room. Accommodation on the upper deck was generally of a higher quality than that of the observation deck and the term "Texas," which also derived from the Mississippi, was used to designate it. Above the Texas deck was the pilot house. Each boat was provided with a dining room and liquor was served.³⁷

The British Yukon Navigation Company sternwheelers burned wood for fuel. On the downstream trip only a limited quantity of fuel was required for "backing" and steerage. Upstream these vessels consumed between one and one-half and two cords of wood per hour. Each fall, wood contracts were let to various indi-

viduals living along the riverbank who cut and stacked timber at regular intervals on the sternwheeler route for use the following summer. In 1904 the company conducted experiments with local coal, but its quality was not high enough to justify converting the sternwheelers into coal burners.³⁸

Despite the many innovations in sternwheeler technology that occurred as a result of the formation of the British Yukon Navigation Company, certain characteristics of the Yukon River continued to plague navigation. Shifting channels, bars and reefs did not disappear with modifications in the technology of the sternwheeler and efficient operations continued to demand experienced boatmen and pilots who were adept at "reading the water" – recognizing the shifting channels and other impediments to navigation by breaks in the surface and by the colouring of the water.³⁹ Several techniques were developed in order to assist the movement of the sternwheelers through difficult sections and several improvements were made to the river itself.

Of the former the most generally employed was a modification of the "tracking" technique known as "lining." To track a boat, a number of men, proportional to the weight of the boat and the strength of the current, walked along the bank with ropes or track lines, moving the boat by pulling these ropes in the desired direction.⁴⁰ Lining a boat followed the same principle, but applied machinery to the task instead of muscle. When a sternwheeler reached a section of the river where lining was necessary, a row-boat with a flexible cable was despatched to a point where the cable could be made fast. (Later, permanent cables were installed where necessary.) If a well-embedded tree were not available, a "deadman," or heavy log, was set. With one end of the cable attached to the deadman and the other end tied to the steam capstan on the boat, the sternwheeler hauled itself through on the cable. When additional power was required, a "strop" was put on the cable and a "purchase tackle" was attached to the capstan, a procedure that had the effect of increasing the power of the capstan from two- to fourfold.⁴¹

Because of the shallow water and shifting channels, sternwheelers often went aground. When this occurred the backing powers of the paddle wheel were utilized in an attempt to wash away the bar. If this tactic were unsuccessful, resort was made to lining or "sparring." Each boat was equipped with two spars, the ends of which were placed under the hull of the boat, one on each side when sparring was required. Once set, the spars were held in position by swinging derricks. Atop each spar was fastened a three-sheave block held in place by a heavy wire strop, while corresponding blocks were made fast to the port and starboard sides of the ship. Tackle ropes were then run from the

78 Hauling supplies over the ice on Lake Laberge in the spring for transhipment by boat to Dawson. For many years the British Yukon Navigation Company wintered a boat at Lower Laberge to take advantage of the fact that the river

below Laberge opened two or three weeks earlier than the lake. (*Yukon Archives.*)



spars to the steam capstan on the fo'c'sle. As the capstan drew the ropes, most of the boat's weight was transferred to the spars. This done, the engines were started and the boat lurched ahead "like a sick grasshopper," the procedure being repeated until the boat was off the bar.⁴²

With the conversion to capital-intensive mining, the building of the Klondike Mines Railway and the displacement of the lower river by the upper route, new methods of heavy freight transport were developed to handle machinery that could not be loaded onto the deck of a sternwheeler. Beginning in 1903, scow-assisted sternwheeler transport became extensive, only to be replaced the following year by small barges. Large barges were introduced in 1905 and served to increase carrying capacity to some 450 tons during high water. After that the pushing of barges became an integral part of the movement of freight on the Yukon River. Given the river's shallow and crooked nature, this necessitated the use of "jackknifing" in order to negotiate sharp turns. To jackknife a boat through a turn, the barge was angled over the shallows while the sternwheeler was kept in the channel.⁴³

Another practice adopted by the company, in this instance to extend the navigation season, was to winter a sternwheeler at the foot of Lake Laberge. The ice on the river below Laberge broke up before the ice on the lake went out and wintering a vessel at the foot of the lake added about two weeks to the short navigation season. Employing men to look after the sternwheeler during the winter months increased the costs of an otherwise seasonal operation and the charges incurred by the cartage of freight over the ice of the lake to supply the sternwheeler offset many of the advantages that were gained by extending the navigation season.⁴⁴

The feud between transportation and the river was not an entirely one-sided contest. The river, too, was forced to concede some of its natural superiority as men sought ways to make it more amenable to the movement of traffic. Between 1900 and 1914 the government sponsored a series of river improvements – at times independently and at other times in league with the navigation companies operating between Whitehorse and Dawson – to eliminate the most difficult obstacles to navigation on the upper route.

One of the first of these improvements was the construction of a breakwater by the Department of Public Works at the head of Lake Laberge in 1899–1900. The breakwater proved inadequate, however, when in 1902 the ice carried a portion of it away and the channel reverted to its old course.⁴⁵ This section continued to be a problem requiring annual work until the British Yukon Navigation Company built a dam at Marsh Lake in the early 1920s.

In 1900 a portion of the rock outcropping at Five Fingers was blasted in order to widen the east channel. Two years before, the stamperders had installed a windlass there to line their boats through, an improvement that had its limitations since it was restricted to use by small scows. In 1904 a cable was laid through the Five Fingers to assist sternwheelers on the upstream run. For years the Department of Public Works worked on the Five Fingers, dynamiting the rock formation until the channel was widened by some 20 feet.⁴⁶

In 1900 one official reported that "during low water heavily loaded steamboats touch the bottom of the river" at Hellsgate. In 1902 the government built a dam there to deepen the channel. By 1908 the dam had deteriorated to such a degree that it was necessary to refill it and improve the breakwater.⁴⁷ In the same year, the British Yukon Navigation Company expended a government appropriation of one hundred thousand dollars removing the rock and reef obstructions at Rink Rapids.⁴⁸

Taken together, the innovations in sternwheeler technology, the utilization of a variety of navigational techniques and the river improvements greatly reinforced the vital role played by the sternwheeler in the economy of the territory between 1901 and 1914, a role that had had its awkward beginnings as early as 1866 and was to last until 1950.

Like the mining industry to which it was so closely tied, river navigation underwent a painful period of readjustment during the first 14 years of the century. When the gold rush ended, most of the river transport companies on the upper river ceased operation, but the collapse of the gold-rush economy did not herald the end of the sternwheeler. A new company emerged which for the first time had come to the Yukon to stay.⁴⁹ The effects of this commitment were far-reaching. For the first time boats were built in the Yukon and the sternwheeler was adapted to suit the limitations of the river. Carpenters, engineers and crews, if only in small numbers, were given employment where before there had been none. The investment of the White Pass and Yukon Route in its transportation facilities meant that the company had a practical interest in the economic development of the territory that was not simply restricted to the high-grading type of exploitation that had prevailed before. Finally, the company's commitment gave to the Yukon a degree of stability and assurance unknown during the gold rush.

The sternwheeler was more than a carrier of men and supplies into and out of the territory. It was an active participant in the mining conversion. It supported the timber industry by burning wood for fuel and united the small communities that hugged the river-

79 SS Klondike No. 2 lining through Five Finger Rapids. The cable was picked up with a pole and wrapped around the winch drum. Power was then applied and the boat pulled itself through.
(Photo by B. Lesyk.)



bank. By 1914 it was an integral element in the life style of every Yukoner.

IV
From the day it was completed, the Skagway-Whitehorse railway proved to be a remarkably profitable enterprise. One contemporary alleged that the entire cost of construction was liquidated during the company's first year of operation. In 1901 and 1904, two years for which figures are available, the company's net earnings were \$1,500,000 and \$451,000 respectively. Until 1912 the White Pass and Yukon Route returned a dividend at the end of each fiscal year to its investors, a return that reflected the intensive utilization of the railroad's facilities. Through 1911 as many as three trains a day, except Sunday, were run between Skagway and Whitehorse during the summer months, while in the winter, when the river was closed to navigation, there still existed sufficient demand for the company to operate an average of six trains a week.⁵⁰

The Yukon winter provided the railway with its severest test during these years. Each November the annual struggle between the railway and the elements commenced, a struggle which lasted until April of the following year. And every year the winter extracted its toll from roadbed, rolling stock and train crews. No other railway on the continent pushed through such extremes of winter climate in 110 miles. From Skagway to Bennett high winds and heavy snows prevailed. On the section between Glacier and Bennett the snow depth often reached 25 feet and severe winds frequently drifted it 25 more. From Bennett to Whitehorse the snowfall decreased as temperatures plunged, sometimes reaching 60 degrees below zero. In the spring, snow slides and washouts wreaked havoc with the safe movement of passengers and freight and demanded the engineers' constant vigilance. To deal with these conditions, the company maintained two rotary snowplows and erected a series of massive snow fences on the Canadian side of the summit to keep the line clear, but even these precautions did not eliminate the need to use train crews armed with no more than shovels to free the tracks after a particularly heavy snowfall.⁵¹

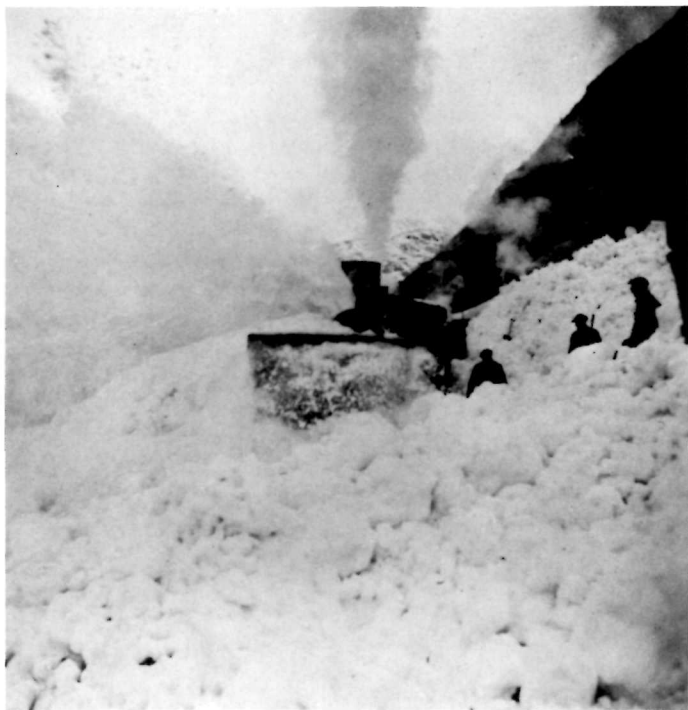
Apart from its "life line" function to the Yukon interior, the White Pass and Yukon Route exploited to advantage one of the two new resources that were discovered during this period. The first comprised the summer tourist trade, a trade that was to increase significantly over the years, becoming a mainstay of the railway during the desperate years of the 1930s. The lure of the Klondike was still powerful during this period, as the popularity of books on the gold rush demonstrated, and, moreover, was more

than matched by the spectacular scenery that ringed both sides of the rail line between Skagway and Whitehorse and highlighted the sternwheeler excursions operated by the company to Atlin, British Columbia. Arrangements were made with the coastal steamship companies operating into Skagway to exploit this colourful history and splendid scenery. On the two-day stopovers at Skagway made by Canadian Pacific Railway steamers, the White Pass and Yukon Route ran tourist excursions into the interior, while on the one-day stopovers scheduled by the Alaska Steamship Company and the Pacific Steamship Company, the White Pass and Yukon Route operated special return-trip excursions to Bennett Lake.⁵²

The second resource to be exploited was the copper deposits contiguous to Whitehorse. As early as 1897 several outcroppings of copper had been reported by prospectors stampeding to the Klondike and in 1898 the first claim was staked. For the next nine years exploratory work and occasional shipments of copper ore were made, but poor transportation facilities based on a wholly inadequate road system pushed costs to prohibitive levels. In 1907 production was increased substantially, reaching a level of 3,530 tons. In the same year the White Pass and Yukon Route decided to build a spur line from MacCrea, seven miles south of Whitehorse, to the Valerie, Arctic Chief, Grafter, Best Chance, Spring Creek, Pueblo, War Eagle, Copper King, Rabbit's Foot and Anaconda copper properties. Construction was begun in 1907 and continued through 1908. A sharp decline in production in 1908 followed by the cessation of production in 1909 resulted in a construction stoppage for 16 months. The failure of these mines during 1908-09 has been attributed by one writer to "the high freight rates charged by the White Pass and Yukon Route railway and the inadequacy of transportation facilities between the mines and Whitehorse."⁵³

Work resumed on the 12-mile spur line in 1910 and the final four miles were completed to the Pueblo property in August. Beginning in 1911, daily ore trains were operated on a year-round basis. A reduction in the White Pass and Yukon Route freight schedules in 1912 was a significant factor in bringing the mines back into production. Production increased at a rapid rate during World War I following a rise in the world price of copper, but the cessation of hostilities depressed the price of copper, and brought into focus once more the delicate balance between transportation and profitable mineral production in the Yukon. Like the gold rush, the First World War camouflaged the basic problems that underlined the Yukon economy. Inflation and increased demand more than compensated for the high costs of production and transportation over the short term. Yet the gold

80



81



rush and the war were events of short duration and once the specific demands they had engendered disappeared and normality returned, the cost-price dilemma reappeared in high relief. After the war, copper production practically ceased and the spur line was abandoned.⁵⁴

The adverse effect of transportation costs on the successful pursuit of enterprise in the Yukon was not restricted to the nascent copper industry. The experience in the Klondike district, while different in one essential respect from that of the Whitehorse copper mines, reflected the same basic transportation problems. What distinguished the former from the latter was not the nature of the transportation burden, but its distribution. In the latter case, transportation costs had been borne directly by the copper industry as a result of a small, producer-oriented population and the bulk characteristics of the mineral produced. In the Klondike the transportation costs were borne by the entire community. The reason for this was simple. In the case of copper, the standard of value was price per ton, while with gold, value was measured in ounces. Whereas in the copper industry the transportation costs were borne by the outgoing traffic, in the Klondike the transportation costs were borne by the incoming traffic and as a consequence, the whole community was affected – producers, by virtue of the need to pay higher wages in order to compensate for the higher cost of living, and consumers, who covered the transportation charges in the price they paid for each product they purchased.⁵⁵

Grievances, real and imagined, against the schedule of freight rates published by the White Pass and Yukon Route were a constant refrain during this period – and indeed have remained so to the present day. The railway did not effect a massive reduction in transportation costs; rather it made transportation faster, easier and more reliable.⁵⁶ Apart from the criticism of tariff schedules that sprang from legitimate complaints, the White Pass and Yukon Route's virtual monopoly on traffic into the interior made the company more vulnerable to attack than would have been the case had competitive conditions prevailed.

After the collapse of the gold-rush economy, the population of the Klondike district declined. This decline was followed, in turn, by a corresponding decline in business. "As a result . . . attempts were made to reduce costs and particularly costs of transportation." There followed a period of agitation for a reduction in the freight rates charged by the White Pass and Yukon Route. As early as 1901, the company was ordered to lower its rates by the dominion government. Continued economic contraction after 1901, however, offset the immediate benefits of the reduction and attacks on the company's rates increased in intensi-

ty. In 1905 the Dawson Board of Trade argued that the future of the territory depended on transportation costs being low enough to work profitably the remaining low-yield gravels and it condemned the White Pass and Yukon Route for its "extremely exorbitant freight and passenger rates [which it is able to charge] by reason of an unjust monopoly . . . [thereby] injuring the entire business interests, [and] hampering and retarding the . . . development of . . . mining." Citing evidence that three-eighths of the territory's production was consumed by transportation costs, the board demanded that the company either be ordered to halve its existing rate schedule or that the government subsidize a competing line. This resolution attracted the support of the Young Men's Liberal Club in Dawson and the commissioner of the territory.⁵⁷ Yet despite this widespread support for the Board of Trade recommendations, the resolution was not acted upon by Ottawa.

An indication of the exorbitant tariff charged by the White Pass and Yukon Route is suggested by a comparison of various commodity costs and the freight rates charged for the transport of these items between Skagway and Whitehorse in 1910. In several instances the freight rates exceeded the wholesale cost of the product. The high tariff schedule can be partially explained as owing to the remoteness of the territory from the major centres of supply. Nevertheless, it is also true that the directors of the White Pass and Yukon Route recognized that the days of the "fast buck" in the Yukon were over and they followed a conscious policy of "getting all that they could, while the getting was good." The shareholders extracted every last possible profit from the operation, oblivious to the needs of the Yukon and to the detriment of the physical facilities of the railway. In two actions against the company, management was charged with corruption. Finally, in 1911 the Board of Railway Commissioners ordered the White Pass and Yukon Route to reduce its freight rates by one-third.⁵⁸ An appeal to the Privy Council instigated by the company, however, resulted in the granting of a new hearing. At the rehearing the board reversed its first decision and instructed the White Pass and Yukon Route to make a voluntary rate reduction.⁵⁹ The company accepted this order and lowered its rates approximately ten per cent.⁶⁰

Reaction to the reversal of the board's first judgement was swift within the territory. George Black, the commissioner, wrote that the reversal "has not had a tendency to encourage prospecting in the territory" and emphasized that the question of transportation costs, with special reference to the White Pass and Yukon Route, was "a matter of the utmost importance to all persons prospecting and mining in the Yukon; in fact, to all inhabitants of the terri-

tory, as all lines of business are absolutely dependent on mining.’⁶¹

V

Transportation in the Klondike district, based as it was on the horse, the dog and a hodge-podge network of poor roads and trails, seemed wholly inadequate to handle the traffic requirements of the region after 1901.⁶² The conversion to capital-intensive extractive techniques and the eruption of a number of communities on the gold-bearing creeks created the need for a form of transportation – more reliable on the one hand and more capable of moving heavy freight and machinery on the other – to satisfy the changing transportation requirements of the district. As had previously been the case on the Panhandle access route to the territory, the solution to the problem of traffic movements was found in the construction of a railway.

As early as 1897–98, serious consideration had been given to a proposal to build a railway connecting Dawson with the communities that were springing up on the placer creeks. In July of 1899, this proposal was acted upon and the Klondike Mines Railway Company, with its head office in Ottawa, was incorporated. Under the terms of the act of incorporation, the railway was to originate in Klondike City, across the Klondike River from Dawson, skirt Bonanza and Dominion creeks to Indian River and return to Dawson via the east bank of the Yukon River. Between 1899 and 1903, when construction actually began, the location of the line underwent several changes. The “loop concept” established by the act of incorporation was superseded by another plan to locate the railway from Klondike City to the headwaters of the Stewart River, a distance of some 85 miles, a plan that was superseded in turn by the promoters’ decision to run the line from Klondike City to Sulphur Springs.⁶³

The elimination of Dawson from the promoters’ plans elicited a variety of protests from that quarter. William Ogilvie, in a letter to the minister of the Interior, expressed incredulity at the selection of Klondike City rather than Dawson as the terminus, citing the former’s poor steamboat landing, absence of wharfage and warehouse facilities and lack of good land suitable for development and expansion purposes as reasons why Klondike City should not be chosen. Why Klondike City was chosen over Dawson can probably best be explained by noting that one of the promoters, Thomas O’Brien, owned a substantial amount of property there. O’Brien, moreover, had already demonstrated a facility for using transportation projects as a means to fast money, as the Pioneer Tramway Company debacle clearly showed. One of the most colourful figures of the Klondike’s first decade, O’Brien was the pro-

prietor of a brewery in addition to his other interests and he played an active role in the political squabbles of the period, oddly enough as a reformer.⁶⁴

As protests over the terminus mounted in 1902, the promoters of the railway – O’Brien, W.W. Parsons and E.C. Hawkins – agreed to appear before the Dawson city council. As a result of this meeting, the promoters were persuaded to designate Dawson as the terminus and a franchise was conferred on the Klondike Mines Railway Company for the laying of track and the building of a station on Front Street in Dawson.

The series of miscalculations, beginning with the locational and terminal difficulties which had taken four years to sort out, continued into 1903 when for the first time a considerable amount of grading was done and four miles of track were laid and subsequently abandoned. By September of 1905, however, the first of two sections of bridge over the Klondike River was completed and work was well advanced on the second. Then a new problem, this time over the right of way, appeared. Injunctions obtained by the claim owners on Bonanza Creek forced the company to abandon construction on that section. The fear, previously expressed as early as 1901, that the right of way of the rail line would interfere with a large number of working claims, had materialized. Mindful of the crisis that now existed, the federal government despatched a representative of the railway commission to make a full investigation into the matter.⁶⁵

Once the controversy over the right of way had been sorted out, the railway was quickly completed. Three locomotives were purchased from the White Pass and Yukon Route and by November 1906, trains were operating on the 31-mile line between Dawson and Sulphur Springs via Grand Forks. The total construction cost of the narrow-gauge railway was estimated at two million dollars. Under the terms of an agreement signed on 25 May 1906 the Klondike Railway qualified for a government subsidy.⁶⁶

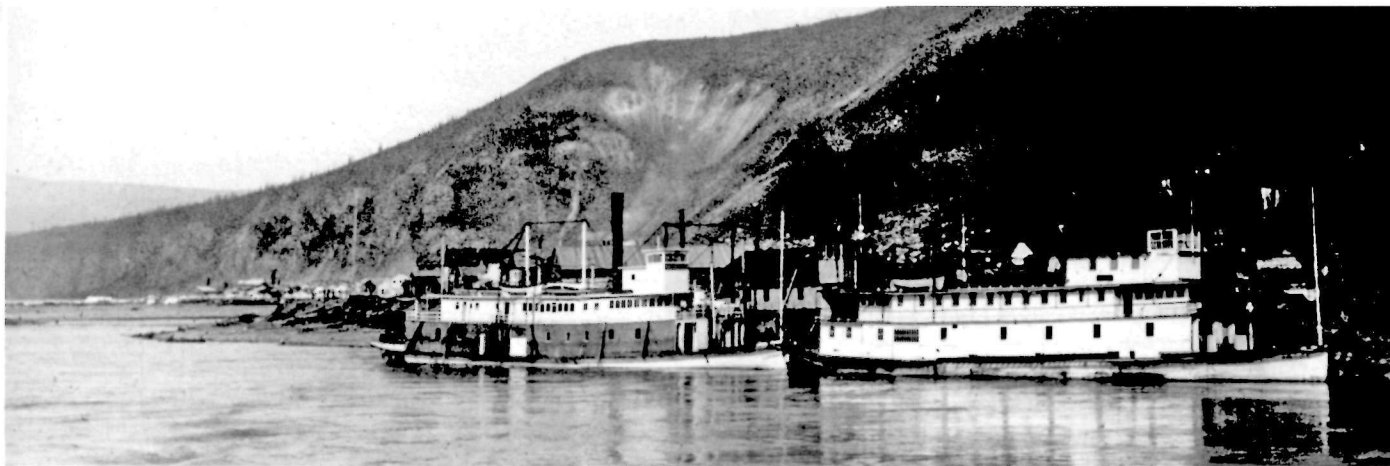
After the railway was completed, the horse-drawn stages that had previously run between Dawson and Grand Forks were discontinued. Service to the creeks tributary to the rail line was provided by daily passenger stages and freight wagons operated by the railway company.

Unlike the White Pass and Yukon Route railway, the Klondike Mines Railway encountered severe financial difficulties from the very beginning. After 1906–07 the company abandoned winter operations for reasons of economy. In 1909 the directors reported that expenditures exceeded revenues by 100 per cent and petitioned the territorial council for financial aid. The council responded by granting assistance for a period of two years. Nevertheless, it was apparent by 1909 that placer mining could not sus-

82 The steamboat landing at Klondike City, steamers *Lightning* and *Tyrrell* in the foreground. (Yukon Archives.)

83 A Klondike Mines Railway train en route to the creeks with a load of timber. Dawson is in the background. (Public Archives of Canada.)

82



83



tain the railway much longer and, as the general manager of the Klondike Mines Railway Company put it, "the future of the railway hinge[s] on [the] development of quartz mining." But quartz mining never progressed beyond the optimistic appraisals that were made for it and by 1913 the railway's operations were curtailed to the 12-mile section between Dawson and Grand Forks. Finally, in July of 1914, the company abandoned operations completely.⁶⁷

An analysis of the failure of the Klondike Mines Railway underlines one of the many problems involved in any study of the Yukon. Superficially, the company's failure could be attributed to the economic decline that characterized the period from 1900 to 1914. However, assuming the promoters felt (as they must have) that the railway could make a profit, even as late as 1904 when construction could have been abandoned, and taking into account the fact that between 1907 and 1914 gold production exhibited a moderate but uninterrupted upswing, it seems clear that the reasons for the failure of the Klondike Mines Railway Company are not to be found in declining gold production but rather in the nature of gold mining itself.⁶⁸ The conversion to capital-intensive mining which the railway facilitated reduced the need for transportation of the type provided by a railway. The railway relied upon continuous, revenue-producing operation in order to show a profit whereas capital-intensive placer mining in the Klondike required rail service on an irregular basis. The conversion to machine-orientated mining, moreover, was concentrated in an area adjacent to the railway's right of way. The acquisition and consolidation of individual claims into concessions, an integral part of this conversion, led to a decline in population in the creek communities served by the railway and was followed by a coincident decline in transportation revenues. In the end, the very dredges that the railway had helped to transport to the creeks proved to be its nemesis. When quartz mining, the development on which many in the Klondike had pinned their hopes for the future, failed to materialize as a satisfactory alternative to placer mining, the railway's fate was sealed.

VI

After 1900 the importance of roads and trails as a transportation factor increased enormously. The period when inflated prices and wages had compensated for inadequate domestic overland transport disappeared with the passing of the gold rush, and the construction of new roads and the improvement of old ones marked a deliberate attempt on the part of the territorial authorities to reduce transportation costs to a level commensurate with new economic conditions.

Road building in the Yukon was complicated by three things: the nature of the territorial economy, the climate and the terrain over which roads were located and from which material was taken to build the roads themselves. Because the economy during the period 1900–14 was based on a single nonrenewable resource that was easily exhausted, many roads became obsolete shortly after they were built. As the frontier of mining activity expanded, especially in the Klondike district, new roads were required to link the new working properties with Dawson, the transportation and supply hub of the region. In general, the territorial authorities were responsive to the demands for new roads of this type and increased expenditures for road construction "in order to keep pace with the new conditions and assist in the rapid development of our mining interests" were made as a matter of course.⁶⁹ But where roads were required for exploration and prospecting purposes with no guarantee that any discoveries would in fact result, government assistance was negligible, in keeping with the peculiar concept of *laissez faire* characteristic of the times. Another problem directly related to the territorial economy concerned the location of roads. Typically, a road was built to follow the path of least resistance, in most cases a creek bed, where maintenance costs were generally higher as a result of poor drainage, but where the cost of construction generally was low. While it might have been more expedient in the long run to build roads along the hillsides, other considerations outweighed the advantages to be gained from doing so. Construction costs would have been increased enormously. In the Yukon, where economic prospects dimmed between 1900 and 1914 and where the life span of a road depended on the richness as well as the concentration of a mineral deposit, the risks were too great to justify this added expenditure. Because the mineral deposits and the techniques of extraction were generally of the placer type, the deposit tended to be "worked out" much more rapidly than a lode deposit of comparable value. Given this built-in obsolescence, quantity rather than quality came to be the determining factor governing policy. The soundness of this approach was vindicated by the fact that road locations were constantly being modified to meet the changing needs of the mining community. Since roads were built to serve the mining industry, not vice versa, the location of a road was altered whenever it came into conflict with the location of a working claim.

The Yukon winter was not as serious an obstacle to road transport as might be initially suspected. In fact, road conditions were poorest during the spring and fall with the result that in July 1902 the territorial council passed an ordinance restricting vehicles to two horses between 15 April and 31 May, and 15 September and

84 A Klondike Mines Railway train and the Yukon Gold Company's Dredge No. 1. Dredging presaged the end of the railway. (Public Archives of Canada.)



85 A 20-horse team hauls a dredge spud weighing 27 tons to Bear Creek from Dawson. (Public Archives of Canada.)



31 October, and stipulated the use of four-inch tires on heavy wagons to prevent road damage.⁷⁰ Hard-packed snow furnished the Yukon road system with its best surface of the year, facilitating the movement of people and supplies as well as the principal agents of motion, horses and dogs. After 1900 a network of "winter trails" was developed to supplement existing wagon roads. These trails were 75 to 90 per cent cheaper to build than conventional roads, requiring only the removal of brush and trees, and snow providing the surface.⁷¹ They furnished remote communities off the water routes with better access to Dawson during the winter than at any other time of the year. The adverse effects of winter on the regular roads occurred during the spring, when the spring runoff turned roads into virtual swamps, sometimes causing slides and washouts. It was not until asphalt became a practical alternative to gravel at a much later date that winter proved to be a serious deterrent to road rehabilitation and construction.

Apart from the economic factors that governed policy, the most serious obstacle to road construction involved the terrain over which roads were built. The existence of permafrost required techniques of road construction that were quite different from those that were used south of the 60th parallel.

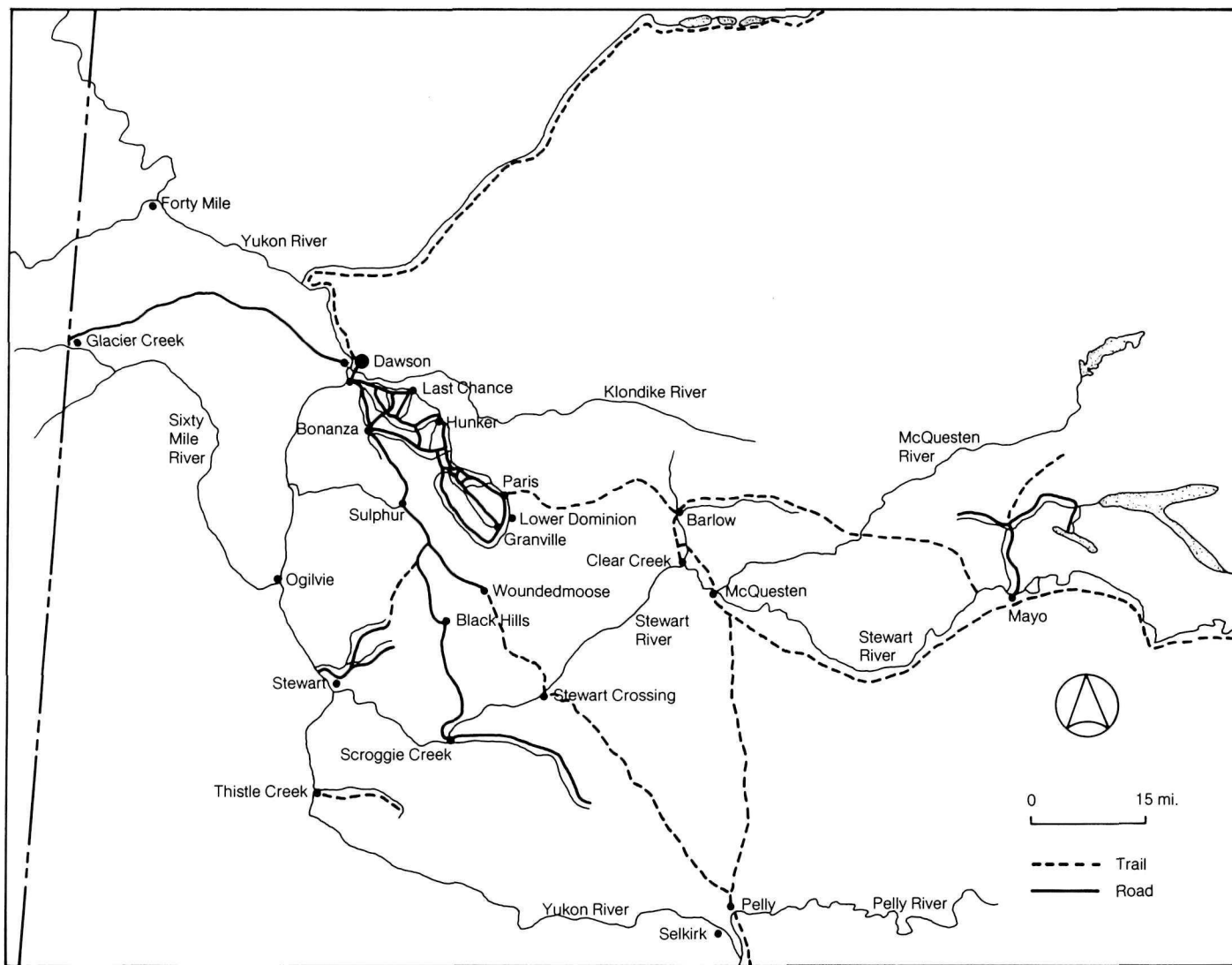
Permanently frozen ground, or permafrost as it is commonly called, lies under a layer of overburden known locally in the Yukon as "muck." This overburden acts as an insulator, protecting the frozen ground from the heat of the sun's rays and effectively inhibiting melting. If removed as a preliminary to the preparation of a roadbed, the permafrost will melt, causing a softening of the subgrade and making for an unstable road surface. Fortunately, the economics of road building between 1900 and 1914 generally precluded any ambitious attempt to remove the overburden and therefore permafrost did not prove to be a serious problem. In cases where the overburden was removed inadvertently or through ignorance, the subgrade could be repaired by re-covering the exposed permafrost with an artificial overburden of brush and vegetation. While road builders in the Yukon learned through trial and error not to tamper with permafrost, those involved in the construction of the Alaska Highway did not have the benefit of this experience. As we shall see in a later chapter, one of the major problems encountered during the construction of the highway derived from a lack of knowledge concerning the nature of permanently frozen ground.

Along with permafrost, certain soil properties geologically characteristic of the Yukon added to the already difficult task of road construction. When available, gravel was used for road surfaces. Gravel was not always possible to obtain, however, forcing road contractors to substitute whatever was available, glacial mud,

clay or decomposed schist. None of these alternatives were particularly satisfactory. Clay and glacial mud were adequate so long as the road was so drained that water could not combine with them. When it did, the surface became a quagmire, practically impassable. Decomposed schist, on the other hand, lacked binding sediment and required constant grading and maintenance to keep it up.⁷²

Ideally, wagon roads were constructed on a stable earth base covered with broken stone or gravel, the former being preferred. Once the surface had been laid, it was graded. Heavy grading required six to eight horses. If the roadbed were well drained, the road could handle heavy traffic with minor maintenance. On swampy ground, depressions and muskeg were corduroyed and covered with earth. This type of road, unlike the gravel type, required continuous maintenance because the earth surface deteriorated rapidly under heavy use. Corduroy was also used on main thoroughfares where gravel was not accessible. Timber for bridges and culverts was cut from native spruce and lasted for eight to ten years under stress. Wagon roads varied in cost from \$1,500 to \$3,300 per mile, substantially more than the \$250 to \$350 per mile expended on winter trails.⁷³

Because of the climate, the terrain and the economics of road construction, maintaining the territorial road system was as important a factor in the overland transportation system as the construction of roads themselves. Roads were poorest in the spring, a result of winter icing and the spring runoff. To counteract winter icing, road crews cut and maintained ice trenches during the winter to concentrate the water and to prevent, so far as was possible, damage to the road. In addition to this, ice formations or "glaciers," as they were also called, were cut and the roads were kept plowed. During the spring, maintenance crews were at their busiest: protecting roads from the spring runoff; removing snowdrifts, snowslides and other debris from the road surface; opening up culverts and waterways, sometimes by steam thawing; diverting water away from roadbeds to prevent washouts, and repairing damage resulting from water sluicing. Yet despite these preventive and cleanup measures, the arrival of spring continued to be attended by a general deterioration of the territorial roads. As one official observed, "the very conditions which put roads in bad shape will hinder any steps being taken towards their permanent improvement until such time as the snow is melted and the ground thawed." During the summer, maintenance crews repaired ditching, replaced gravel, regraded road surfaces and built up shoulders and soft spots. Bridge cribbing was ballasted or renewed and decking was replaced when necessary.⁷⁴



The innovations in mining technology that occurred on a large scale after 1903 added a new dimension to the maintenance problem. Hitherto, maintenance crews had concerned themselves almost exclusively with those problems resulting from the action of natural forces. The effect of hydraulic monitors and dredges on the contour of the land, however, exacerbated the already large task involved in maintaining the road system. Tailings from both operations changed existing drainage systems and buried roads. Problems of this nature were especially acute on the Bonanza Creek road where tailings filled water channels, producing winter icing and spring washouts.⁷⁵

Between 1900 and 1914 some fourteen hundred miles of road were constructed in the Yukon Territory. The majority of these roads were built to give access to groups of working claims and to link small communities with the closest supply centres. As a general rule they were built to complement river transportation routes. In only a few isolated cases were roads constructed for what would now be called development purposes.⁷⁶ Geographically, roads were of two types: intradistrict roads and interdistrict roads. The former were built within each of the mining districts established by the Mines Branch of the Department of the Interior (the Dawson or Klondike, Duncan or Mayo, and Whitehorse districts). These roads had a regional rather than a territorial significance, their function being determined by the special requirements of the individual district in which they were built. The interdistrict roads, on the other hand, were those that connected one mining district to another.

In terms of mineral production and population density, the Klondike district was the most important district during this period and it was there that road and trail construction was concentrated. Before the Klondike district was provided with an adequate network of roads and trails, however, a solution to the problem created by Dawson's location had to be found. Cut off from the centres of mining activity by the Klondike River to the south and by the Yukon River to the west, Dawson required substantially improved connections over both before a satisfactory road programme could be undertaken. The first step toward a solution to this problem was taken in 1900–01 with the construction of the Ogilvie Bridge over the Klondike River. The bridge's 155-foot steel span replaced the cable ferry that had previously carried traffic across the river. Once completed, road construction proceeded vigorously. By 1914 the Klondike district was covered with a network of roads serving the main creeks and their tributaries. Of these, the principal were the Ogilvie Bridge road, the Bonanza-Indian River road, the Hunker-Dominion road, the King Solomon Dome-Sulphur road and the Klondike road. Stages and freighting

outfits operating out of Dawson used these roads to supply the stores on the creeks and to deliver mail and newspapers to the people who lived there.⁷⁷ Between 1906 and 1914 the Klondike Mines Railway competed with roads contiguous to its right of way, but the economic difficulties that plagued it and the curtailment of its winter operations after 1907 resulted in the railway having only a negligible effect on road transportation in the district as a whole.

Another region for which Dawson acted as a transfer point was the Sixty Mile mining district, located on the west side of the Yukon River. Although the gold rush had resulted in a rapid decline in the importance of this area, prospecting and mining had continued there, especially on Glacier and Miller creeks. In order to afford improved communication between Dawson and these creeks, a cable ferry was built across the Yukon River at Dawson in 1902.⁷⁸

The cable ferry was an ingenious expedient applied to the problem of crossing rivers in the Yukon where economic circumstances did not justify the erection of a bridge. Until the end of the Second World War when roads rapidly superseded water as the primary highways of transportation, the cable ferry was the most common form of river crossing in the territory. A relatively simple device, the cable ferry consisted of a steel cable strung between two towers on each side of the river. A scow was attached to the cable with a sliding bridle tied to two cleats, one near each end of the same side of the scow. By adjusting one side of the bridle with a tightening or a loosening action, the scow could be angled into the current so it would travel in the desired direction, the current providing the motive force.⁷⁹

All traffic moving west of Dawson was taken across the river on the cable ferry. The scow had a six-horse–one-wagon capacity. When the cable ferry could not be operated safely – generally at the beginning or at the close of the navigation season – a canoe was used instead.⁸⁰

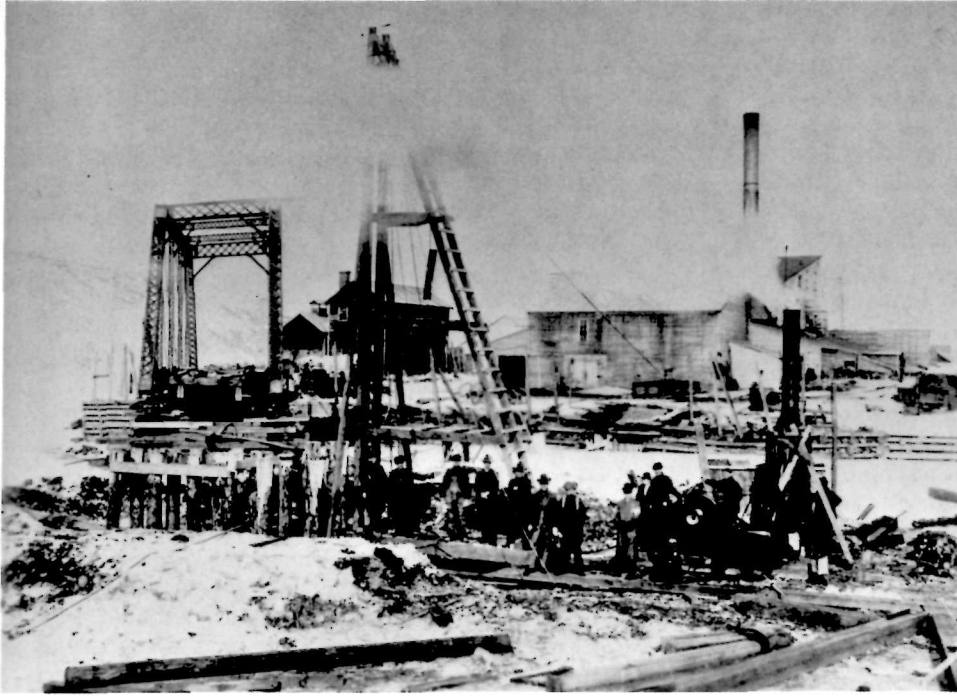
The erection of the cable ferry resulted in an increase in the volume of traffic over the river. In 1902 a pack trail that had been cut the previous year from West Dawson to Glacier was brought up to the standard of a "passable" wagon road. Increased mining activity in the area over the next two years was followed by the construction of a good wagon road in 1904. This new wagon road, in turn, had a salutary effect on mining. During the winter a sled trail was used to connect Glacier and Dawson.⁸¹

Gold was discovered on Duncan Creek in the Mayo district in 1898. The discovery did not immediately attract many miners, but as the frontier of mining activity expanded after 1900, some who had failed to locate profitable claims in the Klondike and some who had already exhausted their claims there began to trickle into

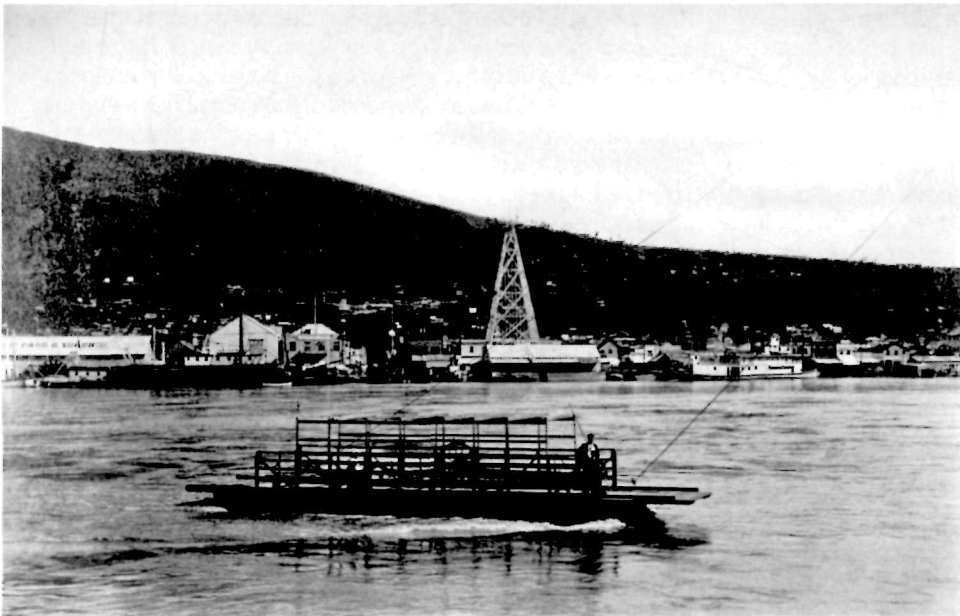
87 The Ogilvie Bridge over the Klondike River during construction. (*Public Archives of Canada.*)

88 The cable ferry linking Dawson with the west bank of the Yukon River. One end of the cable is attached to the tower. (*Yukon Archives.*)

87



88



the Mayo area. In 1906 a rich silver deposit was uncovered on Galena Creek, about five miles west of Duncan.⁸² As these discoveries attracted more and more miners, pressure mounted for the construction of roads to meet the increasing transportation requirements of the district.

Between 1903 and 1906 the government built roads to connect the town of Mayo with Duncan Creek, Mayo Lake with Gordon Landing and another road along Hight Creek. Other roads that were built before 1906 were built by the inhabitants themselves.⁸³

No overall plan existed whereby Dawson and Mayo were to be connected by road. Sections of road were built wherever and whenever a need existed, the need being defined by the requirements of the mining industry. Despite this rather haphazard approach, a winter road joining the two centres was completed by 1904. The first link was forged in 1902 with the construction of a winter trail between McQuesten, located at the confluence of the McQuesten and Stewart rivers, and Gordon Landing. In 1904 Barlow and McQuesten were joined by a short branch road. In the same year a winter trail was built along Flat Creek, east of the Barlow divide, to the Klondike River. The Flat Creek winter trail joined two sled roads; one on Allgold Creek, the other on Jansen, that ran to Hunker and Dominion creeks respectively. An alternate route was completed in 1906–07 when a 58-mile road was built from Mayo to Clear Creek to connect with a 20-mile stretch of road between Clear Creek and Barlow that had been built in 1902. Between 1907 and 1914 three more wagon roads were constructed: the Klondike River-Flat Creek road, the Jansen Creek-Clear Creek road and the Minto-Galena Creek road.

A number of roads were built in the Whitehorse district between 1901 and 1914. As was the case in the Klondike and Mayo mining districts, these roads were built to serve the needs of the mining industry. What distinguished them from those roads that were built in the Klondike and Mayo districts, however, was that Whitehorse district was the only one in which the extraction of base metals rivaled that of precious-metal production.

The first roads to be constructed in the Whitehorse district were to the copper mines adjacent to the Whitehorse townsite. In 1902, roads were built to the Grafter and Copper King properties. Rising production and the discovery of additional deposits after 1902 resulted in the extension of these roads to the War Eagle and Arctic Chief mines in 1907.

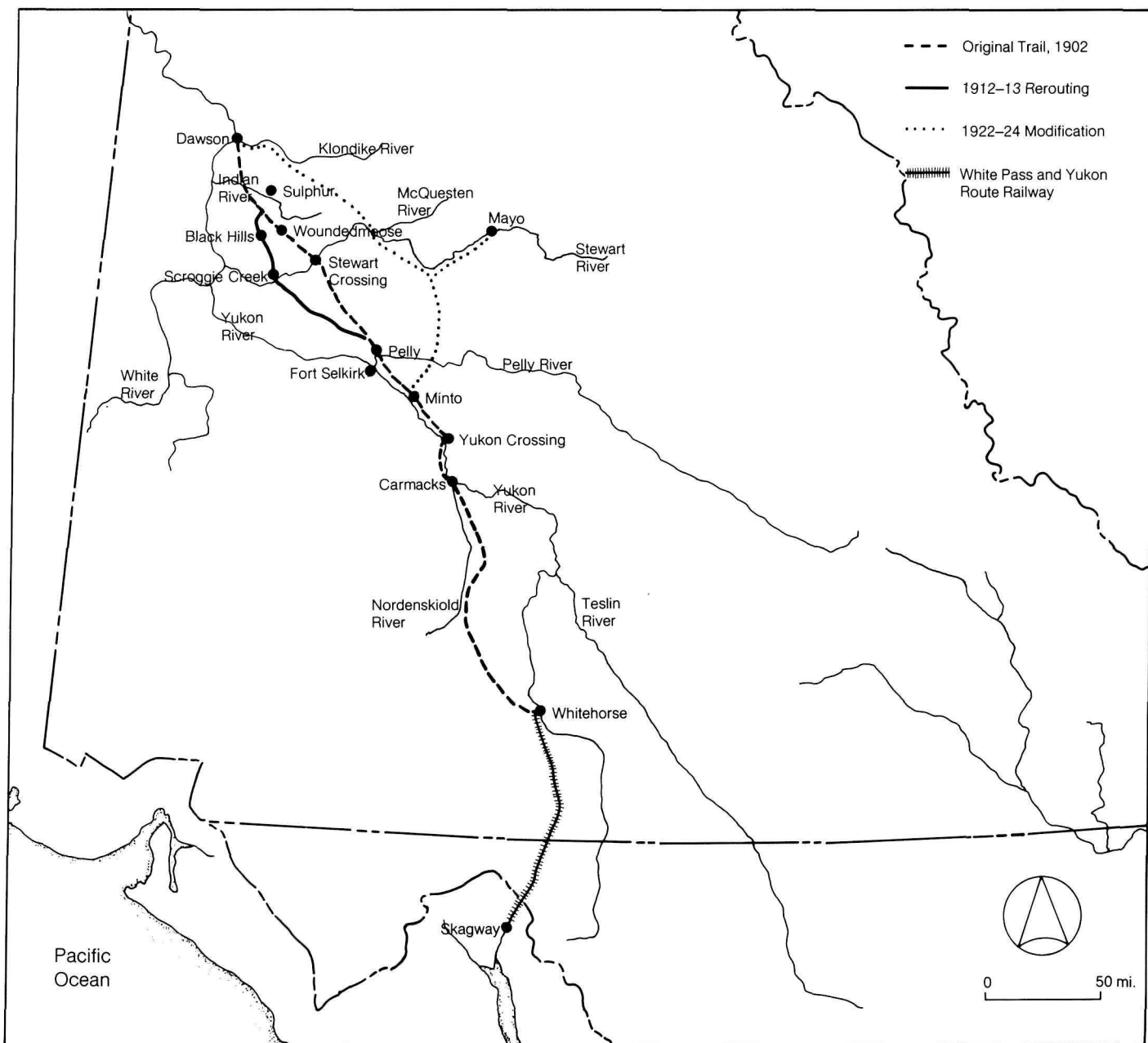
Unlike roads that were built in placer-producing areas where the preponderant traffic was incoming, the movement of traffic over roads serving the base-metal mining industry was more balanced, involving large shipments of outgoing ore. As a result, transportation facilities had a much more direct bearing on the

economics of base-metal mining than was the the case with the placer type of operation. Not only was the relation between freight rates and profits more pronounced, but also roads and vehicles designed to higher standards in order to withstand heavy use were required. In part it was the failure of the available transportation facilities to meet these demands – and this includes the White Pass and Yukon Route spur line to the copper mines as well as the road system – that resulted in the curtailment and eventual cessation of copper production.

While the degree of mining activity in the Whitehorse district was not sufficient to justify road expenditures of the size made in the Klondike district, several roads were built to facilitate prospecting and mining. In 1902 a road was built from Mason Landing on the Hootalinqua River to Livingston Creek. Two years later a wagon road was built to Kluane Lake from Mile Post 31 on the Overland Trail. During the next two years roads were built in the Wheaton and Watson River areas and a short access road was constructed around Windy Arm. Other roads were built off the Overland Trail between Whitehorse and Dawson, notably the Thistle Creek road in 1907 and the Coffee Creek-White River trail in 1913. A road was constructed from Whitehorse to Carcross which complemented the facilities already provided there by the railway. In 1912 a road was built from Carmacks to the Tantalus coal mine.

In the pre-gold-rush period, the annual freeze-up of the Yukon River had been a source of potential discomfort rather than a cause for great concern. The population was small, stable and known. Managers of the various trading posts scattered along the river were able to predict the needs of the communities that they served and order and receive the winter supplies that were required before the close of navigation. The men engaged in prospecting had been genuine pioneers, accepting the fact that life in the North usually meant belt-tightening in the winter and perhaps only one mail delivery a year. Before winter drifting was adopted, many had left for the outside on the last boat, an annual ritual that alleviated the problem of accumulating provisions for the winter months.

With the stampede of 1897–98, the supply organizations that had previously been adequate to the task of winter provisioning proved totally deficient. No longer were resident trading-post managers able to predict winter requirements; the incredible influx into Dawson made all calculation impossible. Furthermore, the stampeders of 1897–98 expected amenities that they had enjoyed in more southern climes and many of the old-timers, their previous life styles foresaken forever by the infectious hysteria nurtured by the rush, discovered that they wanted them as well.



In light of these new conditions, a winter link to a supply centre on the outside was essential. The closest was Skagway and until the construction of the railroad the only route was over the frozen ice of the Yukon River by dog team. Apart from the obvious limitations imposed by the use of dog teams and sleds over a supply line that stretched for some 500 miles, the Yukon River was closed to all forms of transportation for two months of the year, in the fall before the river froze and in the spring when the ice was melting. During these two months there was no communication with the outside world.⁸⁴

In 1899 the Yukon Overland Express and Transportation Company received a charter from the territorial government to build and operate a wagon and sleigh road from Bennett Lake to Dawson, complete with branch roads and relay stations. A primary reason behind the government's interest in seeing such a road constructed was the need to materially improve postal service between the territory and the outside. When the Yukon Overland Express and Transportation Company abandoned the Bennett Lake-Dawson road project without ever having commenced construction, the winter mail contract for 1899 was awarded to a man named Richardson, who assigned it in turn to the Canadian Development Company. During the winter of 1899-1900 the Canadian Development Company used dog teams to move mail and light express between Whitehorse and Dawson, gradually replacing the dogs with horses the following year. In 1901 the White Pass and Yukon Route bought out the Canadian Development Company in order to get the mail contract for its sternwheelers. The movement of mail, an almost totally ignored factor in northern transportation, was a stable and highly profitable source of revenue. An indication of its importance is suggested by the name chosen by the White Pass and Yukon Route to designate its winter sleigh operation, "The Royal Mail Service," a name that owed far more to economic realities than might be at first suspected.⁸⁵ The acquisition of the Canadian Development Company and the operation of a winter transportation route between Whitehorse and Dawson was not the first time the White Pass and Yukon Route had engaged in winter transportation. Valuable experience had already been gained through the operation of the "Red Line Transportation Company" between Lindeman and Bennett lakes during the construction stage of the railway in the winter of 1899-1900.

In the summer of 1902 the territorial government contracted with the White Pass and Yukon Route to build a winter road between Whitehorse and Dawson. Construction began that summer and the road was completed in November. The company cleared a 12-foot right of way along the entire distance, graded the sur-

face and built culverts as well as wood-reinforced earth retaining walls. Considering the topography and the primitive equipment of the time, building the trail was no easy task. As W.D. MacBride noted, "this trail was hewn through the wilderness with axes and crosscut saws, and graded with plows, wheel scrapers and horses by a small crew of men."⁸⁶

The "Overland Trail," as the winter road between Whitehorse and Dawson came to be called, did not follow the Yukon River except during the spring when melting snow made the trail practically impassable. From Whitehorse it struck west, crossed the Takhini River, followed the Little River through Braeburn and went over the divide to the Nordenskiöld through Carmacks. From Mackays, which was later renamed Yukon Crossing, the trail followed the east bank of the Yukon River to Pelly, where it crossed the Pelly River. On the north side of the Pelly it ran northwest to Stewart Crossing and over the Stewart River to Woundedmoose. From Woundedmoose the trail branched off to the Indian River and thence to Dawson via Eldorado and Bonanza creeks.⁸⁷

On 2 November the first through stage left Whitehorse for Dawson over the Overland Trail. The road was built at a cost of \$129,000 and was 330 miles long, shorter than the river route by some 70 miles.⁸⁸ Over the years, the location of the road was modified to meet the changing transportation needs of the territory and to connect new areas of mining activity with Whitehorse.⁸⁹

The completion of the Overland Trail marked the end of one era and the beginning of a new one. Thereafter horses replaced dogs as the transportation agents between Whitehorse and Dawson, with greatly improved service between the two centres resulting. For the first time Dawson was not cut off from the rest of the world for almost eight months of the year. The winter stage line became, in Laura Berton's words, "the winter link with civilization" – an important carrier of people, supplies and mail. For its part, the government, having expended \$129,000 on the undertaking, hoped that the road would "open a large area of land for cultivation . . . equal in quantity and quality to any other good farming land."⁹⁰ Although the Overland Trail did encourage a few modest attempts at farming, the government's aspirations in this regard were never realized. Nevertheless, the hope itself did point up the rather simplistic approach to development which still prevails to this day: that transportation is the universal panacea for all of the territory's problems.

Between 1902 and 1914 the White Pass and Yukon Route ran tri-weekly stages and sleighs between Whitehorse and Dawson after the close of navigation. During the month of March, when traffic density increased substantially, daily service was often pro-

90 A White Pass and Yukon Route Royal Mail sleigh on the Overland Trail.
(Yukon Archives.)



91 A road house on Hunker Creek.
(Yukon Archives.)



vided. As the closed season of navigation did not coincide with the winter season, the company used wheeled stages before the snow was deep enough for sleighs and during the spring when the ice on the river was melting. Originally the company had brought in Concord coaches, but their use was discontinued when they proved ill-suited to trail and climatic conditions. Thereafter the company constructed its own stages in the Whitehorse workshop. Modelled on the lines of the Concord coach, these "thoroughbraces," as the company stages were called, differed from the former in that they were fitted with layers of leather straps rather than metal leaf springs. Metal had a tendency to break under sustained use on the rough trail and was brittle during periods of extreme cold. The leather straps, on the other hand, proved exceptionally durable and were easier to repair or replace although they did make for a rougher ride. The thoroughbraces had a 12-passenger capacity and carried up to a ton of baggage, mail and express in the boot.⁹¹

As soon as the snow was deep enough, stages were replaced by sleighs. The sleighs were drawn by four to six horses and carried up to 14 passengers as well as mail, baggage and express. They were cheaper to operate than the wheeled stages because snow-covered roads furnished a much better road surface than non-snow-covered ones. As a result, fares were cheaper during the winter than during those periods immediately preceding and following the navigation season.⁹²

Those who travelled the "Royal Mail Service" during the winter wore raccoon coats and moccasins or felt shoes to keep out the cold. The company provided "carbon foot warmers" or heated bricks and buffalo robes.⁹³ In spite of these precautions, many still found it necessary to indulge liberally in spirits in order to keep warm. According to Laura Berton,

It was not a comfortable trip. The seats had hardly any backs and we had not been out long before I became unpleasantly conscious of my neck. It just wouldn't hold up my wobbling head. With no support from the seat I tried tying a scarf over my turban, binding it tightly around my head. It was no use.⁹⁴

The trip between Whitehorse and Dawson took anywhere from three to ten days, five days being the average. Three to four posts, spaced at 20-mile intervals, were made in a single day depending on the weather and the trail conditions. At each post the passengers ate and rested while fresh horses were harnessed to the sleigh for the next 20-mile section. Each post generally consisted of a complex of buildings: a roadhouse, stables, storehouses, cabins and wood piles.⁹⁵ A typical roadhouse on the Overland Trail was described by Mrs. Berton:

In one general room stood the familiar giant heater around which was built an iron rack on which we hung our wet gauntlets, scarves and coats. Beside this was a long table absolutely jammed with hot food – roast moose, caribou, mountain sheep, native-blueberry pie and huge dishes of baked beans. As I was travelling alone I was allotted a tiny cubicle with a bed to myself. The single men slept in bunks, which in the smaller posts were all in the main room.⁹⁶

Roadhouses were an important factor in winter transportation, not only on the Overland Trail but on other territorial roads as well.⁹⁷ They were especially vital for the interdistrict road system, where travel over long distances and in climatic extremes required frequent stops. But while roadhouses were havens to each traveller for the food, rest and warmth they offered, they were also firetraps. In 1907 the territorial council acted on the ever-present fire threat by passing an ordinance requiring roadhouses of more than one storey to be equipped with fire escapes. Wherever this regulation was obeyed, it was adhered to in typical frontier fashion: a rope was hung from an open window.⁹⁸

The Overland Trail was not a single uninterrupted stretch of road, but actually five sections of road divided by four rivers: the Takhini, the Yukon, the Pelly and the Stewart. Before these rivers froze, stages were run to the river crossings where passengers, mail and baggage were transferred by canoe to a stage waiting on the other side. During the winter, river crossings were not a problem as the sleighs crossed over the frozen surface of the river on ice bridges.⁹⁹ Ice bridges, like the cable ferries that were used during the season of open navigation, were the solution applied to the problem of connecting roads separated by water in the Yukon.

In all, about two hundred horses were employed by the Royal Mail Service on the Overland Trail during the winter season. The White Pass and Yukon Route maintained facilities at Whitehorse for the treatment of horses and retained the services of a veterinarian. During the summer when the horses were not working, they were put out to pasture where they grazed on native grass. In the winter they were fed on bran mash, oats and timothy hay brought in from the West Coast. The horses grew long hair as a protection against the cold, but before returning to work each fall the upper parts of their bodies were clipped to prevent steaming. To prevent their lungs from being "burned," a fatal condition produced by breathing in cold air, protectors were placed over their chests and a bag-like contraption was placed over their nostrils. Summer care was minimal, limited to "painting" the horses with a concoction of tar and oil in order to repel insects.¹⁰⁰



According to H.J. Woodside, editor of the *Yukon Sun*, there were three automobiles in the Dawson area by September 1901.¹⁰¹ The automobile remained something of a novelty for the next ten years, however, owing to the primitive state of the territorial road system. The existence of a much cheaper form of transportation in the sternwheeler, moreover, acted to delay the conversion to automobile and truck transport on a large scale until the 1940s. Nevertheless, the pressure toward conversion increased gradually after 1912.

In 1912 a car was driven over the Overland Trail for the first time. This was followed by a petition to the federal government for an appropriation to improve the Whitehorse-Dawson road for motor traffic. Two years later the use of cars and trucks had become common enough to require the regulation of vehicle speed over the Overland Trail and in the city of Dawson. During 1914–15 expenditures were made to improve the Overland Trail. At the same time, substantial improvements were made to the river crossings on the Yukon, Pelly and Stewart rivers by the erection of cable ferries. In order to eliminate the canoe transfers used during freeze-up and break-up, the White Pass and Yukon Route developed the technique of booming the river above each ferry to jam the ice. As soon as the ice above the ferry had frozen, the cable ferries were removed and traffic crossed over the ice formed by the boom. As a result of these improvements, traffic movement was greatly facilitated between Whitehorse and Dawson.¹⁰² Nevertheless, traffic movement continued to be dominated almost exclusively by horse-drawn sleighs.

As we have seen, road expenditures were paid for out of public funds. An informal cost-sharing plan between the territorial and federal governments existed whereby the latter contributed approximately 55 to 60 per cent of all moneys needed for construction. After 1900, when political activity replaced drinking and gambling as the main avocation of the territorial citizenry, road construction and maintenance became a political issue and a primary form of patronage.¹⁰³

Roads, especially in the Klondike district, had a significant effect on the territorial economy. As early as 1900 the commissioner was able to report that road construction "paid for itself indirectly by reduced costs transport."¹⁰⁴ This reduction was a powerful stimulus to the territorial economy, coming as it did after the collapse of the gold-rush boom. In the mining industry, roads reduced the costs of extraction to such an extent "that low grade ground which in the early years of this country was not considered of any value is being worked at a profit." The road system played an important role in the conversion to machine-oriented mining, as did other contemporary forms of transportation, by fur-

nishing the necessary conditions for the movement of heavy traffic over land and by so reducing transportation costs that the large-scale importation of dredges was economically feasible. The network of roads that emerged during this period also increased the mobility of the mining population by enabling prospectors to transfer their operations to new locations as old deposits were exhausted and as machinery superseded individual enterprise.¹⁰⁵

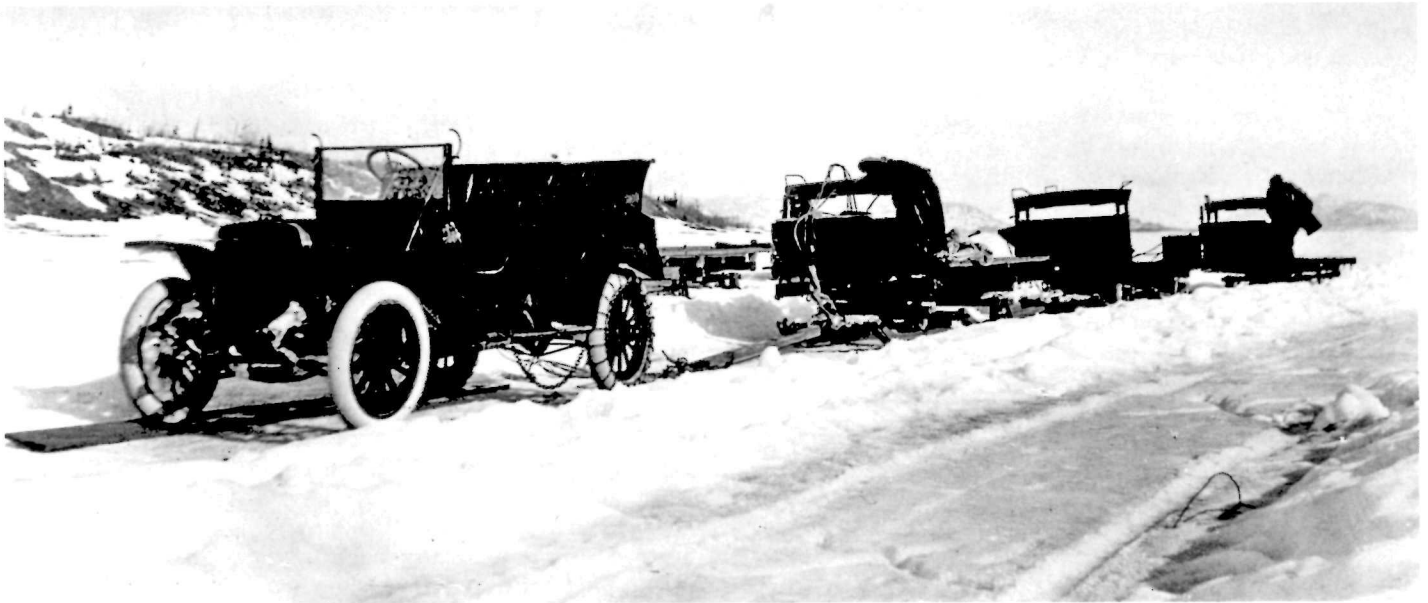
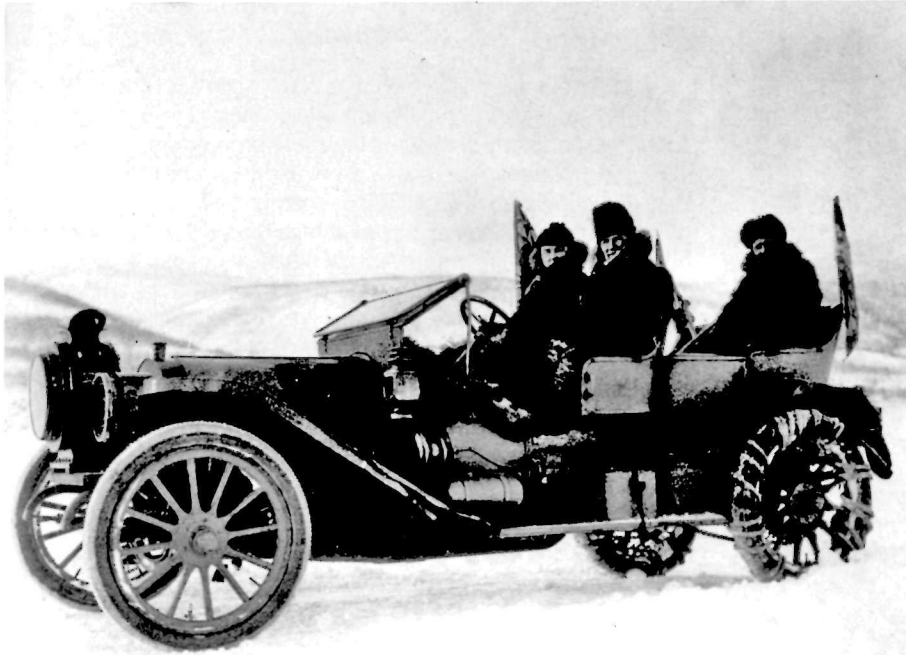
Roads, again in the Klondike district, assisted the growth of a number of communities on the gold-bearing creeks. As a result, transportation movement between Dawson and the creeks decreased as roads made it possible for the miners to purchase their supplies on the creeks rather than having to make the trip into Dawson.¹⁰⁶ The decline in Dawson's status as the retail centre of the district was intensified after 1902 when Dawson received its municipal charter. Incorporation brought increased taxation as municipal status was accompanied by the responsibility for municipal services and many merchants and entrepreneurs, already suffering the effects of economic contraction, took advantage of better road communication between Dawson and the creeks to move their operations outside the city. But even on the creeks the merchants were not immune to the effects of a continually improving road system and after 1906 the creek stores "suffered from the competition of peddlars who took advantage of improved roads to dispose of goods, delivered at the cabins at prices slightly higher than Dawson prices."¹⁰⁷

While the mining industry was the main beneficiary of better roads, other segments of the economy experienced the stimulating effects of improved highway communication. As the commissioner noted in 1902, "when a road is started or there is a prospect of a new road being built, applications immediately begin to pour into this office for agricultural land at the terminals of such roads."¹⁰⁸ The increase in road transport created the need for more horses and with them, more hay, the main agricultural enterprise of the territory. Roads also assisted the timber industry by providing better access to timber stands as the old ones were depleted.

The importance of roads, however, was not limited to their effects, individual and cumulative, on the territorial economy. The building of roads marked a significant departure from the previous transportation preoccupation – communication with the outside. After 1900 great energy was expended on an internal transportation system of which roads formed the most important single element. For the first time a tension arose, setting the need for better communication links with the outside against the need for improved transportation services within the territory itself. Local

93 The first motor trip over the Overland Trail, Dawson to Whitehorse, made in December 1912. (*Public Archives of Canada.*)

94 The automobile did not replace the horse as a means of hauling freight on the Overland Trail; however, by 1912, Yukoners recognized the possibilities of the internal combustion engine. (*Yukon Archives.*)



needs were transposed into local demands for domestic transportation, demands that were often at odds with the Yukon's transportation requirements as seen by the large mining and trading companies and Ottawa bureaucrats. The local population, moreover, generally defined their needs in terms of roads. As the years passed this tension was to become more acute. Like much of the territory's political history, the history of transportation in the Yukon was not without its underlying theme of colonial-imperial conflict.

VII

The introduction of capital-intensive mining dominated by a few large companies during the first decade of the 20th century constituted a revolution in the economic organization of mining that has prevailed to the present day. At the same time the transportation industry, which played an integral part in this economic transformation, displayed a similar propensity toward consolidation. When the plethora of transportation companies that had sprung up during the great stampede abandoned the field after the collapse of the gold-rush economy, one company, the White Pass and Yukon Route, became dominant, so dominant in fact that except for local overland transport and water transport on the economically marginal tributary streams, the White Pass and Yukon Route had become practically synonymous with Yukon transportation by 1914.

Between the Wars

I

"A gold rush is like a war," George Black once explained. "You feel it in your blood. It is exciting – intoxicating. It reveals, as in a flash, the monotony of ordered days and ordered ways."¹ By 1914 the prospect of another Yukon gold rush was little more than an empty dream. Most of the Klondike had come under the umbrella of consolidation and what remained would have been hard put to bestir the enthusiasm of the most optimistic prospector. The "intoxicating" days of 1897–1900 were gone forever, replaced by the daily routine of working for one of the large mining companies.

If another gold rush was merely the product of an imaginative mind nourished by the interminable Yukon winter, war was not. When hostilities broke out in Europe in August of 1914 a certain exhilaration swept the Yukon. Black's description of the stampede spirit worked both ways and war, though certainly less preferable than a gold rush, nevertheless furnished excitement and relief from the "monotony of ordered days and ordered ways" that had become the measure of life in the territory.

But the excitement was purchased at tremendous cost. While the rest of the nation shared, albeit with some disparity, the benefits accruing from wartime mobilization,² these benefits, with the notable exception of the Whitehorse copper industry, completely by-passed the Yukon. The impact of the war on gold mining – the backbone of the territorial economy – was particularly severe. From 1908 through 1914 the industry had exhibited positive signs of recovery after seven years of decreasing annual production.³ Under the influence of wartime conditions, however, the industry found itself caught in a vice of rising production costs and rigid gold prices. Writing in 1918, the territorial gold commissioner observed that "each successive year since 1914 has seen a tremendous increase in the price of all kinds of provisions and particularly in dredge machinery and repair parts, and there has been no increase in the value of gold mined."⁴ The price-cost squeeze was further exacerbated by the withdrawal for war service of a large number of skilled miners and supervisory personnel, a factor that adversely affected the operational efficiency of the industry.⁵ Given the region's remoteness and the inflationary pressures unloosed by the war, it was impossible to replenish such a drain on the labour pool from outside sources.

Within the territory itself, the war produced spectacular increases in the cost of living. Operating on the barest of margins, the gold companies were forced to deny labour a corresponding measure of wage relief. In 1917 the Yukon Gold Company, the

only mining concern in the Klondike extracting enough gold to qualify as a genuine producer, rejected the moderate demands of its employees for a "10 per cent increase [in] wages to meet [the] 60 and 100 per cent rise on foodstuffs." The company's intransigence was followed by an act of last resort in an industry wholly dependent on seasonal operation: a strike.⁶

No less serious than the war and of greater long-term consequence were the managerial decisions taken within the gold mining industry itself. During the period 1908–35 extractive operations were undertaken on less than half the known gold-bearing fields in the Klondike. This failure to exploit to the full the resources of the district cannot be attributed to a deliberate policy of building up reserves and following a programme of systematic extraction, a policy that would have been economically sound. Rather it must be explained in terms of a single individual's attempt to gain hegemony over the entire gold fields, an attempt that was characterized by an almost total disregard for the welfare of the Yukon.

It is ironical that this individual, A.N.C. Treadgold, was the architect of consolidation. For it was Treadgold, with his intimate knowledge of frozen gravels and the most efficient means for working them, who had been largely responsible for the conversion to capital-intensive mining. But Treadgold was obsessed by an even greater dream than overseeing the revolution in mining technique which he had initiated; he dreamed of bringing the entire Klondike under his personal control.

Treadgold pursued his goal through the simple expedient of using the assets of the companies with which he was associated to purchase additional claims. Had he financed these purchases out of the profits realized from his mining operations, he might well have achieved his aim and maintained at the same time a satisfactory level of production, but Treadgold employed investment capital which should have been used to underwrite extraction. Francis Cunynghame, Treadgold's biographer, has written that under Treadgold's stewardship, the Granville Mining Company was "a mining company which could not produce gold and had no means to do so."⁷ The same can be said of all the companies with which Treadgold was later connected. Percy Reid, territorial gold commissioner during the mid-1920s, expressed his exasperation with Treadgold by dismissing him as little more than a speculator: "Mr. Treadgold is not an operator, but is merely a promoter."⁸ As unfair to Treadgold as Reid's assessment was, the gold commissioner accurately captured Treadgold's fatal weakness that was to deprive the mining industry of the liquid capital required to maintain its productive capacity. The outcome of Treadgold's dream to control the Klondike was to leave gold min-

ing proper in a relative state of suspended animation between 1918 and 1932 and bring about his ultimate downfall.⁹

The impact of the war and Treadgold's struggle can be seen in the annual figures for gold production published by the Dominion Bureau of Statistics. Between 1915 and 1930 there was a protracted falling off in production from a high of \$5,125,324 in 1914 to \$734,202 in 1930. Between 1924 and 1932 total annual production did not exceed one million dollars, hitting a low of \$529,220 in 1926. In 1923 silver-lead production in the Mayo district superseded the Klondike as the principal mineral-producing region in the Yukon.¹⁰

On a more tangible plane, the decline in gold production found a mirror image in the community of Dawson. Where once the mud flat at the confluence of the Klondike and Yukon rivers had played host to an estimated thirty thousand people, 975 were all that could be mustered for the 1921 census.¹¹ While falling production and a decreasing population were not novel phenomena, Dawsonites reacted to them in a manner that was far different after 1918 than had been the case prior to the war. Before the war there had been a pronounced tendency to regard post-gold-rush Dawson as a settled, progressive community that had evolved out of the raw mining camp synonymous with the stampede. But the war, the economic havoc created by Treadgold's ambition to control the Klondike, and the sinking of the SS *Princess Sophia* in October of 1918 destroyed this complacent perspective.¹² When Laura Berton returned to Dawson in 1920, Dawson was not the confident little enclave she had left four years before, but a "decaying town" sapped of its energy and spirit. The unmistakable signs of a ghost town in the making were manifest. Physically, the settlement possessed enough buildings to accommodate ten times its population. The population itself, already ravaged by war, a waning economy and the *Sophia* disaster, was getting progressively older. A generation separated the Dawson of 1897–1900 from the Dawson of 1920. In the interim, immigration had been negligible. Dawson's single hospital was full "not of patients," Mrs. Berton wrote, "but of old men." Funerals became social events. Where a quarter of a century before, Dawson had revolved around the gambling tables and the dance halls, "it was the funerals around which the town revolved" during the twenties.¹³

By 1920 the *Dawson Daily News*, the only local newspaper to survive the century's first decade, had ceased daily publication. Four years before, the *News* had carried an obituary to an era of social history with a banner headline that proclaimed "Last Day of the Saloon in Yukon." In 1918 the Side Streams Navigation Company of Dawson terminated its operations, while in the same year

the United States government withdrew its consular representative from the city. At the end of the war the total annual tonnage arriving at Dawson had declined to less than ten thousand tons and in the words of G.B. Edwards, general agent for the British Yukon Navigation Company, "waterfront privileges are fast depreciating." By 1920 the only living reminder of Dawson's golden age as an entertainment centre was a single theatre, but one would have been hard pressed to find any resemblance between the productions and the performers of 1899 and 1920.¹⁴

If one word best described the Dawson of 1920, that word was "shrinkage." One could see it everywhere – in the population figures, in the economy and in the spirit of those who remained. Even the city itself was shrinking. Community services were too expensive to provide over a widely scattered area and as a consequence there was a steady concentration of people toward the core. But Dawson had a history of escaping the ghost town fate so often predicted for it after 1900. In this there was an unflinching and perhaps to some a perplexing consistency. The twenties were difficult years for Dawson, but the town survived them and when the Yukon Consolidated Gold Corporation commenced full-scale production after 1933, Dawson was ready once more to preside as the Yukon's major city.¹⁵

The Klondike's postwar economic slide was in large measure offset by developments that occurred in the Mayo district during the late teens and early twenties. The discovery of a rich silver-lead outcropping by Louis Bouvette on Keno Hill in 1919¹⁶ climaxed a 13-year search for an extensive lode deposit in the area¹⁷ and attracted two large companies, Keno Hill, a subsidiary of the Yukon Gold Company, and the Treadwell Yukon Company of San Francisco, with sufficient capital to organize the industry on an efficient basis. With the withdrawal of Keno Hill in 1924, the way was cleared for Treadwell Yukon to establish virtual control over the entire district. This it did with the result that by 1926 the Mayo district and silver-lead surpassed the Klondike district and gold as the primary producer and product in the Yukon.¹⁸

This radical change in the territory's economic centre of gravity had a profound impact on the transportation system. At the very time that it was becoming increasingly apparent that the territorial economy could no longer sustain the existing transportation system, a new challenge issued from the Mayo district.¹⁹ This challenge was substantially different from the challenge that had been posed in the Klondike. It demanded a response to the transportation problem that was in keeping with the peculiar needs of lode mining as distinct from placer mining. In the past the transportation system had proved singularly incapable of coming to grips with a problem of this nature,²⁰ but the mineral deposits of the

Mayo district enjoyed two palpable advantages over those of other areas where lode mining had previously been attempted: a rich assay and extensive occurrence. As a consequence, transportation was able to fulfill its proper function; to assist a viable mining industry in moving the products of the mine to outside buyers and to deliver the manpower and material needs of the industry to the site of its operations. This constituted a major shift in the burden previously borne by transportation vis-à-vis the lode-mining industry. In the case of Whitehorse copper, for example, transportation had been charged with the impossible task of sustaining an industry that was initially tenuous owing to the low-grade nature of its product.

II

That aspect of transportation most sensitive to the economic changes of the 1920s was the road system. As we have seen, overland transportation of the non-rail variety had assumed an ever-increasing importance in the years immediately preceding the war, both as a necessary adjunct to the seasonal service furnished by water and as a vital tool in the movement of supplies and services between settlements which were not situated on existing river routes. This was particularly true of the Mayo district where mining properties tended to be scattered over an area that was 40 miles from the nearest steamboat landing, the town of Mayo, and the most accessible waterway, the Stewart River. Given the resource base of the Mayo economy, transportation of a cheap and efficient variety was crucial. As J.S. McNeill, the territorial superintendent of roads explained, success in lode mining *depends in great measure on low freight rates, the grade of ore which can be profitably mined depending largely on this item. Supplies and equipment are needed in large quantities, and the product mined for shipment is of a nature that involves considerable tonnage.*²¹

Unfortunately, events were taking place in Ottawa that would undercut the realization of an efficient road system. Prodded on by the opposition which claimed that the federal grant in support of the Yukon was excessive, the government began a hard examination of its annual Yukon appropriation. In one exchange recorded by *Hansard* in 1917, an opposition MP stated that "little short of \$1,000,000 was being paid by Canada for the 9,000 people or thereabouts in the Yukon." "This is a huge figure," he argued.

In going through the various items last year, I did not find the slightest regard was paid to the changed conditions [declining production and population] . . . It simply amounted to this, that it cost about \$100 per head to keep those 9,000 people in the Yu-

kon. When the proposition is put that way it does not look very economical.²²

In psychological and economic terms, the introduction of federal retrenchment measures after the war could not have occurred at a more inopportune time. The territorial economy was at a critical juncture. The silver-lead industry had yet to progress beyond the developmental stage and a sizeable investment was required to encourage further development. Geographic decentralization of the resource base, the bugbear of any remote region dependent on primary industry, made difficult, if not impossible, the implementation of policies designed to operate on the "economies of scale" principle and created conditions whereby a costly duplication of services could not be avoided.

Paradoxically, reductions in government spending coincided with an upswing in the economic outlook of the territory. In the Yukon there was a general feeling that for the first time in 20 years the future was bright. Departmental estimates for the 1921 fiscal year, however, offered clear proof that the government did not share this confident appraisal of the territory's future. Expenditures were cut by 35 per cent over the previous year, an action that was regarded in the Yukon as evidence that the government was "very ignorant of or absolutely indifferent to the real situation here." Compared with the appropriation expended in 1914, the estimates for 1921 represented a reduction in government spending of 64 per cent.²³

Territorial reaction to the course adopted by Ottawa was bitter. In a hastily despatched night letter to the then prime minister, Arthur Meighen, the Yukon Development League "respectfully" reminded him that the

Yukon gave more men and money per capita to the Dominion for war purposes than any other section of Canada without receiving [a] cent [of] war business. Our only industry [gold mining] was severely handicapped during [the] war . . . but we carried on and produced gold for the Dominion . . . and why the government should now try to put Yukon almost entirely off the map of Canada, the loyal and patriotic subjects here cannot understand.

The league asserted that few facets of territorial life would escape the adverse effects of the government's fiscal policies. Schools, hospitals and libraries would be forced to close for want of support while assistance for the indigent would have to be eliminated. That facet most seriously affected from the viewpoint of the territorial authorities, however, was the overland transportation system, for federal retrenchment was effected in large measure at the expense of road construction.²⁴

Despite the territory's indignation and the growing evidence of the importance of the Mayo strike, the dominion government refused to modify its position. Considering the thrust of federal economic policies during the 1920s, this is hardly surprising. While the minister of the Interior conceded that there existed "a persistent demand for road construction to enable people engaged in mining to get out the products of the mine," very little in the way of an increased appropriation was forthcoming.²⁵

An alternative source of money to finance construction was derived from government-run liquor store revenues.²⁶ Another was the Mayo mining companies, especially Treadwell Yukon. This last was particularly significant as it gave Treadwell Yukon an important voice in determining the location and nature of roads in which it had an interest. It also brought to an end an era in which the government had assumed exclusive responsibility for building and maintaining Yukon roads.²⁷

During the 1920s the policy of the territorial administration was "to maintain the main or trunk roads in as good a condition as finances [would] permit; and, where possible, to assist in constructing trails from these main roads to districts which show reasonable promise of development." In determining the location for a road in the Mayo district, the superintendent of Public Works, J.S. McNeill, would appraise the wishes of the transportation company serving the route. While this type of consultation was generally fruitful, it was not always successful. As McNeill candidly admitted, most of the teamsters "had their own ideas on what would be the best route" and in one case a road was built which did not prove satisfactory to the ore-hauling contractor and alterations were necessary. In the Klondike, where a different set of economic conditions prevailed, road requirements remained relatively static throughout the 1920s. There, government policy was primarily confined to maintaining existing roads rather than undertaking new construction. Before the commencement of each new mining season, the territorial public works department would canvass the mining community for a list of creeks on which operations were planned for the coming year in order to avoid maintaining those roads which would not be used.²⁸

Two aspects of road building that had not seriously interfered with road construction in the Klondike, permafrost and the time lapse between starting and completing a road, proved to be serious impediments to traffic movement in the Mayo district. While roads had been built in sections and brought up to standard over a period of years in the area tributary to Dawson, increased road use in the Mayo district, both in terms of frequency and tonnage, required more rapid completion and a higher standard of construction. In 1922 the Mayo Board of Trade telegraphed the min-

95



96



ister of the Interior to “strongly urge” the passage of a sufficient appropriation to complete the trunk road between Mayo and the town of Keno, the centre of the silver-lead mining industry, “this season instead of spreading it over [a] number of years.” The government’s response was that “a reasonable amount of money” should be put aside for roads in the Mayo district. Lack of funds was one of the chief obstacles to road building. As McNeill observed, “It cannot be expected that we can make a good road from one year’s appropriations, but whatever amount of work that is done will represent progress along permanent lines.”²⁹

In the early years road builders had circumvented the problem of permafrost by not disturbing permanently frozen ground and by ensuring that enough insulation covered the ground to prevent melting. This was an adequate solution so long as roads were essentially temporary and not subject to heavy use. Such was not the case in the Mayo district, however, and as a result, an improved technique for dealing with permafrost was developed. The ground was allowed to thaw, the thawed portion being then removed. Approximately three years were required to establish the desired depth and width of the road. The same procedure was followed in roadbed preparation, the object being a stable foundation for the road surface. Temporary changes in soil consistency during the thawing period made drainage a constant problem throughout the construction phase and required much ditching.³⁰

The introduction of motorized vehicles in the early twenties was another factor tending toward improved roads. After 1912 an extensive network of roads had been built by the territorial government to connect the placer camps in the then Duncan district with the head of navigation at Mayo.³¹ These roads were designed “to a standard that would allow of wagons being used during dry weather with moderate loads.”³² While adequate to the demands of placer mining, these roads were not able to satisfy the transportation needs of the silver-lead industry. In 1915 the cost of freighting one ton of ore overland from the mines to the town of Mayo was \$20, compared to a figure of \$22 for transshipment from Mayo to San Francisco. Overland shipments, moreover, were limited to the winter period exclusively in order to take advantage of the superior road surface furnished by snow.³³ That this shipment and others like it returned a profit in spite of the high cost of transportation was due to two factors – the existence of extremely rich ore and the method of hand sorting. Selected ore samples from Galena Creek taken during the 1915 season, for example, were assayed at \$153.00 to \$266.72 a ton and while ore of comparable value occurred only irregularly, many deposits showed commercial promise.³⁴ Hand sorting, or “hand-cobbing” as it was also called, was a simple variation of the high-grading technique used

by gold miners during the rush and entailed manual separation of high-quality ore from that of low value for shipment to the smelter. Nevertheless, establishing the industry on a firm foundation demanded more than simply relying on rich ore occurrences and the costly, time-consuming method of hand sorting. What was needed was a breakthrough in the transportation impasse between the towns of Keno and Mayo Landing.

It is not surprising that the first attempt to resolve this difficulty involved a railroad. In January 1921 a company was organized to build a railway from the junction of the Mayo and Stewart rivers to the McQuesten, by way of Mayo River, Duncan Creek and Crystal Valley. This scheme wrought a counter proposal from interests representing the defunct Klondike Mines Railway to extend their line from Dawson to the silver camp or, alternatively, to construct a railway from Mayo Landing to the mines. Although a federal charter was secured by the former in March of 1921, construction was never begun and, despite its intimations to the contrary, the Klondike Mines Railway Company showed no further inclination to take on the project.³⁵

In light of the failure to construct a railroad and in the absence of sufficient government assistance for road building, the Mayo district operators were forced to confront the transportation problem on their own. In 1922 Treadwell Yukon pressed a ten-ton Holt tractor into service. The experiment was a marvellous success, the tractor moving forty-five hundred tons of ore that season from the mine to Mayo Landing. The introduction of tracked vehicles reduced transportation costs by 75 per cent and in the words of one contemporary, “revolutionized winter transportation in this country.” Thereafter the company shipped by tractor exclusively.³⁶

The revolution in overland transportation presaged by the use of tracked vehicles constituted an advance of giant proportions when it is considered that in the same year another miner, Robert Fisher, hauled three tons of ore from his claim to Keno City by dog team, a distance of 17 miles. Treadwell Yukon added another caterpillar to its fleet in 1923; trucks were coming into common use and the superintendent of roads was predicting that once “objectionable grades” on the Mayo-Keno road had been removed, shipments of 70 to 75 tons could be handled on a regular basis.³⁷

During the 1923 season the territorial government concentrated its road-building efforts on the 37-mile trunk road between Mayo Landing and Keno City. Modern construction equipment was purchased and put to use with “encouraging results.” Treadwell Yukon and Keno Hill, the two companies which stood to gain most from its completion, contributed to the construction of the

97 Tractors on Main Street in Mayo, bound for Wernecke Camp. (*Yukon Archives*.)

98 Coping with the Yukon winter required ingenuity. This vehicle probably bears little resemblance to what came off the assembly line. The front wheels have been replaced by skis, the tires equipped with tracks and the rear tire ap-

pears to have been grooved to help anchor the tracks. (*Yukon Archives*.)

97



98



road. While not conforming to a uniform standard in its entirety, the road was a major factor in reducing transportation costs. Rates on freight delivered to Keno City from Mayo were cut from 15 cents a pound in 1920 to 5 cents a pound in 1923 exclusive of freight hauled by track-vehicles which was cheaper still. Completion of the road also led to a substantial increase in traffic movement during the summer months. In 1927 Atyey tractor trailers superseded wheeled carriers for summer use with a consequent increase in carrying capacity and less road damage. By 1928 Mayo-Keno freight rates had levelled off at one to one and one-half cents a pound depending on quantity.³⁸

If the introduction of caterpillars "revolutionized" winter transport, the installation of a concentrating mill by Treadwell Yukon in 1924 was tantamount to ushering in the millenium.³⁹ Essentially, concentration accomplished the same object as hand sorting but far more efficiently. It involved crushing the ore, then subjecting it to processes of clarification and flotation whereby the unit weight of the end product, or concentrate, was greatly increased in value. Some idea of the significant savings resulting from concentration is given by data which show that the Treadwell mill reduced ore to concentrate in the ratio of 10:1 to 15:1.⁴⁰ Simply stated, this meant that ore slated for shipment had increased in value tenfold while transportation costs had remained constant; or conversely, that transportation costs had been reduced 90 per cent. Concentration solved another transportation problem, at least for the smaller operators. It enabled them to sell their ore to Treadwell Yukon for treatment and receive immediate payment, instead of waiting for the smelter returns. In an industry where it was impossible to extract, treat, transport, smelt and get paid in a single season and where the market price of silver-lead could widely fluctuate from year to year, this was a positive boon.⁴¹

Installation of the concentrator marked a radical departure from previous attempts to deal with the transportation problem. It demonstrated that possible solutions to the problem were not confined to the conventional answers of the past: refining existing modes of transportation, developing new ones and improving access routes. It portended an increasingly sophisticated approach which saw transportation in terms of the economic viability of the territory and fostered a realization that whatever facilitated the movement of people, supplies and services, whether it be the designation of a new port of entry, a telegraph or wireless or even the selection of a new capital, entailed a legitimate response to the transportation problem.⁴²

In 1930 Treadwell Yukon expressed dissatisfaction with the arrangement whereby it had shared a portion of Mayo road construction and maintenance costs with the government. The

change was precipitated by the government's refusal to assist in clearing snow from one of the company's roads after a particularly heavy storm, and a rumour to the effect that roads used by tractors would no longer be maintained. The government's decision in this regard was particularly surprising in view of the fact that Treadwell tractors had carried mail between Mayo and Keno that same winter without charge when snow had prevented the regular contractor from operating his trucks. Additionally, the company had improved certain sections of the Mayo-Keno trunk road on its own initiative and at its own expense. Company roads, moreover, assisted neighbouring operators and increased the value of adjacent properties. Livingston Wernecke, the company's general manager, argued that the "building of all roads," including Treadwell Yukon's, was "a true and proper function of the Government, either Federal or Territorial" and added that by not doing so, the government was "side-stepping one of its functions; a function that is extremely important to a new country."⁴³

In response to Wernecke's charge, the government conceded that it was "very difficult to take exception to the contention that the matter of building roads is one for the Government"; nevertheless, it held that deferment of the royalty tax on mineral production, which had not been imposed until 1929, demonstrated that "the Government has in every other possible way given assistance to the mining industry in the Mayo district."⁴⁴ There the matter died, though not to the satisfaction of Treadwell Yukon. The controversy itself is nonetheless important. It shows that the debate over the role of the government in northern development is not a product of the 1950s as has generally been assumed and it offers clear proof that roads are not a newly discovered palliative for the problems of resource exploitation in the North.

By 1920 the condition of the Overland Trail had, in Mrs. Berton's words, "greatly depleted." "There were fewer travelers to the mining camps now," she wrote, "for the palmy days were over."

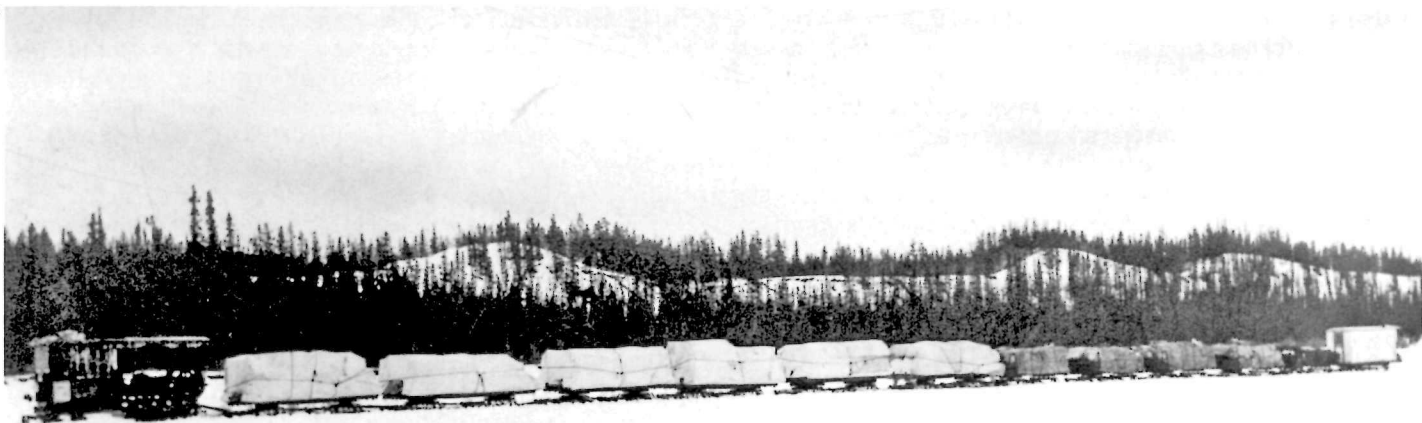
*Many of the roadhouses which in the old days had been spotted every twenty-two miles along the winter road were closed. Passengers now had to provide their own lunches and these were eaten in the open after being thawed out by a bon-fire on the side of the trail. In the old days we had made the journey in less than a week. Now the stage only made a post a day and, if the trail was bad, the trip often took longer than a fortnight.*⁴⁵

In 1921 the White Pass and Yukon Route surrendered the winter mail contract it had held for 20 years and terminated its Overland Trail operations. The company had initiated winter hauling in the first place to secure the mail contract for its sternwheelers. With

99



100



the failure of the Side Streams Navigation Company in 1918, the last obstacle to complete monopoly on the Yukon waterways was removed and with it any competition for the postal contract. The winter contract was taken over by Coates and Kastner in 1921–22 and later surrendered to Greenfield and Pickering, who were superseded in turn by Richards and Phelps during the late twenties.⁴⁶

In the years preceding the successful establishment of the silver-lead industry, Dawson had been the main supply centre and distributing point for the Mayo camp. In 1913–14 a 40-mile wagon road was built from the mouth of Hunker Creek to Flat Creek, from which a good winter road was built to Mayo Landing.⁴⁷ In the meantime, the Overland Trail was rerouted through Black Hills and Scroggie to serve the placer communities that had sprung up there.⁴⁸ The advent of large-scale silver-lead production, however, underlined certain deficiencies in the existing overland transportation system. Consequently, the Overland Trail was again rerouted to provide direct communication between Whitehorse and Mayo. The Whitehorse-Minto section was left intact, but at Minto the route was diverted northeast to Willow Creek where it crossed the Pelly River some 30 miles above the site of the old river crossing. From Willow Creek the trail was extended to Crooked Creek which became the terminus of the main road. From there the trail branched off to Mayo on the east and Dawson on the west.⁴⁹

Dawson's diminishing status as a metropolitan centre with an attendant hinterland can clearly be seen in the diversion of the Overland Trail, but Dawson's decline was not limited to the loss of its metropolitan function. Throughout the 1920s the Dawson area steadily lost ground as the territory's main economic region and in 1926 it was superseded by the Mayo district. This decline was reflected in the flow of traffic over the Overland Trail which by 1928 was moving in much greater quantity over the Mayo division of the Overland Trail than its Klondike counterpart.⁵⁰

Route modifications were accompanied by technological changes in the modes of transportation. In 1923–24 trucks replaced wheeled stages for spring and fall travel while horse-drawn sleighs gave way to caterpillars for winter use. These improvements were initially confined to the Whitehorse-Yukon Crossing section of the Overland Trail, beyond which the old modes of transportation were retained. According to Mrs. Black, caterpillar operators were limited to two-hour shifts as "the fearful lurching of the 'cat' over the rough trail rendered it unbearable for a driver to work" for an extended period of time. Occasionally Treadwell Yukon assisted the regular transportation company by

freighting supplies with its own tractors between Whitehorse and Mayo.⁵¹

Despite these cumulative improvements, one obstacle continued to hinder traffic movement over the trail. That obstacle was the river transfer at Yukon Crossing, which J.S. McNeill described as "the greatest drawback on the Overland Route." While the river generally froze over in late November, the Yukon Crossing section remained open for another month, after which it had to be tested regularly for rotten ice. The cable carrier that had been erected in 1916 to facilitate the transfer of freight, passengers and mail between Whitehorse and Dawson during freeze-up and break-up had a limited capacity and canoe transfers had to be reinstated to handle the traffic increase resulting from Mayo.

Interdistrict overland transportation did not progress beyond the seasonal role it had historically played during this period. The Overland Trail was a complement to water transportation and was not maintained during the season of open navigation. The trail fell into disuse in the late 1930s following the inauguration of regular air mail service. Without the mail contract "no continuous freighting service by trail would pay" and, as a consequence, the Overland Trail was virtually abandoned as a commercial highway.⁵²

The depression had a twofold impact on the territorial economy which was by no means entirely negative. The silver-lead industry was severely hit by the crash in base-metal and silver prices although this was chiefly felt, at least in the beginning, in a drastic reduction in ore reserves rather than a precipitous decline in production. In its annual report summarizing 1930, the Department of Mines noted that "an ore that was profitable a year ago can no longer be considered as ore; the minimum content of silver necessary for profitable operations has nearly doubled." Before the crash Treadwell Yukon had estimated its ore reserves to be "as great as at any time during the development of the camp." A year later the company announced that "the ore in sight in its properties was sufficient to last only two and a half years."⁵³

The smaller operators in particular were vulnerable to the vicissitudes of the depression. Lacking the capital to increase the value of their ore through concentration, many were forced to abandon production. For them, development and assessment work were all that the foreseeable future held in store. A few were fortunate enough to have located on rich properties which could be worked by hand sorting, but the Department of Mines predicted that "production from these sources will be very small."⁵⁴

After exhausting its properties on Keno Hill in 1932, Treadwell Yukon closed its concentrating mill and abandoned Wernecke camp. Operations were then resumed on Galena Hill where mining continued on a much reduced scale. In the absence of an op-

erational concentrator, the company was forced to resort to hand sorting which in large measure accounts for the diminishing returns recorded from 1933 to 1936. A great deal of effort was expended on development work during this period, however, which resulted in the surprising discovery of an extensive ore deposit on Galena Hill in 1936. When it is considered that this same property was reported "exhausted" after the 1934 season, the vagaries of mining become apparent. The company transferred its concentrating plant from Keno Hill to Elsa in 1935 and full-scale production was resumed in 1936.⁵⁵

Gold mining, on the other hand, was given a substantial impetus by the depression. Falling prices in other sectors of the economy had the effect of increasing the purchasing power of gold, the price of which remained constant until 1934 when it was revalued upward by the United States government to \$35 an ounce.⁵⁶ The Yukon Consolidated Gold Corporation was completely reorganized and finally established on a firm footing through a series of litigative actions that culminated in the removal of A.N.C. Treadgold.⁵⁷ As a consequence, full-scale systematic production was resumed after an hiatus of some 20 years with the result that in 1933 the Klondike regained its primary position in the Yukon economy.⁵⁸

Despite the re-emergence of the Klondike and the transfer to Galena Hill by Treadwell Yukon, few roads of any consequence were built during the 1930s. A road was constructed between Keno Hill and the Silver King claim group on Galena Hill, while in the late thirties work was done on a road connecting Dawson with the Alaska boundary near Eagle, Alaska. Most of the activity of the territorial roads department was directed toward maintaining or improving existing roads, a sizeable task in itself.⁵⁹

This did not silence the persistent Yukoners for whom roads were a universal panacea. "What my constituents are more interested in," George Black declared, "are roads, for in so vast a country transport is a vital problem." During the late thirties some federal funds were made available for road building as part of a national public works programme, but this failed to satisfy the insatiable appetites of those in the Yukon who saw at the end of every roadway the proverbial pot of gold.⁶⁰

III

Before the rise of lode mining, the region tributary to the upper Stewart River had been little more than an outpost of Dawson. Transportation routes, water as well as overland, had originated at Dawson and the entire Mayo area had been supplied by trading and transportation companies operating out of the then territorial capital. During the first decade of the century, two sternwheelers,

the *La France* and the *Prospector*, owned by the Stewart River Company, had made the run between Dawson and Mayo Landing carrying passengers, freight and mail. Although the company continually reported a loss at the end of each season, it persisted until 1909 when the Stewart River trade was taken over by the Side Streams Navigation Company. The Side Streams Navigation Company furnished weekly service between Dawson and Mayo, a distance of 238 miles, during the open season of navigation which generally ran from 20 May to 1 October. Freight was delivered to Mayo Landing at a rate of two cents a pound. The Side Streams Navigation Company survived until 1917 when it too succumbed to the pressures of extended supply lines, a small market and insufficient revenues.⁶¹

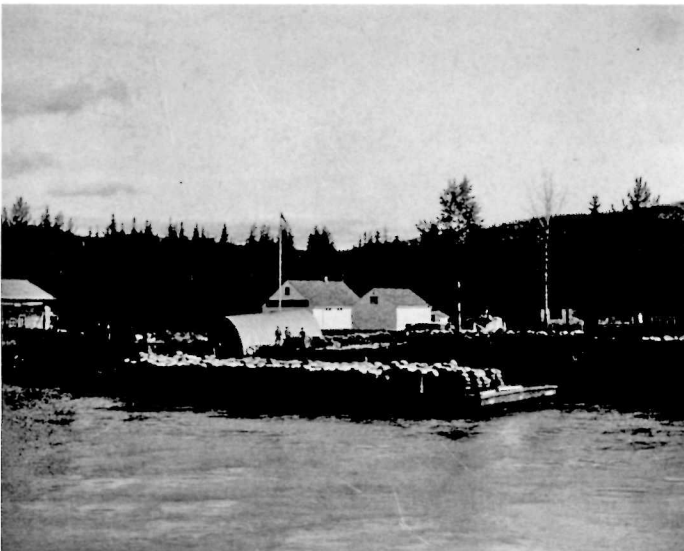
The British Yukon Navigation Company extended its operations to Mayo in 1918. Although Taylor and Drury of Whitehorse ran the *Thistle*, and later the MV *Yukon Rose*, to supply its widely scattered trading posts, the British Yukon Navigation Company now enjoyed complete control over the Yukon waterways since Taylor and Drury was not a common carrier. Moreover, with the exception of Carmacks and Mayo, where Taylor and Drury had trading posts, the *Thistle*, and its successor, the *Yukon Rose*, worked rivers such as the Hootalinqua, the Pelly and the White in which the British Yukon Navigation Company had no interest. In this respect Taylor and Drury played an important role which was a throwback to pre-gold-rush days when trading and transportation functions were frequently merged in one company, thereby enabling transportation to be provided in remote areas.⁶²

The expansion of the White Pass and Yukon Route into the Stewart River region did not immediately diminish that region's dependence on Dawson. Even after the establishment of the silver-lead industry in 1921, Dawson remained a major funnelling point for river traffic into the Mayo district.⁶³ Until 1923 when the bulk of this traffic was transferred to the upper river, bagged ore from the Mayo mines was shipped downriver to Alaska for transshipment to a smelter in the United States.

Most of this freight was handled by the American Yukon Navigation Company, an American-registered subsidiary of the White Pass and Yukon Route.⁶⁴ Although the company made occasional trips to Mayo, its operations were primarily confined to the lower river. As a general rule, the ore was picked up at Stewart Landing or Dawson after having been dropped by the company's sister subsidiary, the British Yukon Navigation Company. "Improvisation was the important thing," a company official explained. "What could be done with the boats available, water conditions etc. were factors that had to be taken into consideration."⁶⁵

101 Thousands of bags of ore concentrate await shipment by boat from Mayo.
(Photo by J. Dunn.)

102 The barge *Ibex*, loaded with concentrate, waits at Stewart Landing to be transported to Whitehorse. (Source unknown.)



In its annual report on mineral production for 1921, the Dominion Bureau of Statistics reported that "complete development [of the Mayo deposits] would of course be obtained by linking up the mining area with the White Horse Pass [*sic*] and Yukon Route at Whitehorse."⁶⁶ The bureau was not alone in recognizing the need for a shift away from Dawson. The transportation company was cognizant of the deficiencies of the existing water route. Landing facilities at Dawson were so poor that it was often impossible to dock loaded vessels at low water. The waterfront area was congested with silt from dredging operations on the Klondike River. This was exacerbated by an eddy on the right limit of the Yukon River that encouraged silt accumulation and prevented the normal wash of the current from dispersing the sediment. Extending the wharves was not feasible because of the danger of ice damage during the spring break-up. Since no long-term solution was foreseen and as dredging the waterfront was never seriously considered, the British Yukon Navigation Company was forced to take action of a temporary and continuing nature. On or about 15 August of each year during a period of low water, the company would withdraw certain of its sternwheelers from service and use them to sluice out the reservoir of sediment with their paddlewheels, a procedure that was then repeated every few weeks until the end of the navigation season. This was not entirely successful, however, as the sluicing paddlewheels tended to leave deep holes in the riverbed, thereby creating new pockets for the silt to accumulate.⁶⁷

In spite of these drawbacks, most of the ore was shipped via Dawson until 1923. Although the Mayo-Whitehorse waterway was substantially shorter, the White Pass and Yukon Route assumed that "it would be impossible to send this ore up to Whitehorse from the mouth of the Stewart River as the Yukon [River] above Dawson to Whitehorse was a much swifter stream than below Dawson." The development of a barge specifically designed for swift-water use, however, enabled the company to establish regular river service between Mayo and Whitehorse with connecting rail service to Skagway in 1923.⁶⁸ In the meantime, the American Yukon Navigation Company had curtailed its operations on the lower river. The completion of the Alaska Railroad from Seward to Fairbanks in 1922 by the United States government caused the American Yukon Navigation Company to suspend its Dawson-Saint Michael operation in exchange for a quid pro quo whereby the United States government refrained from running boats into the Yukon Territory from Nenana.⁶⁹

The change in transportation routes occasioned by the transfer of Mayo traffic to the upper river had a serious impact on Dawson. Coupled with the competition arising from the Alaska Railroad,

tonnage through Dawson decreased to such an extent that after 1923 the American Yukon Navigation Company maintained only one sternwheeler on the Dawson-Nenana run. This vessel was primarily engaged in moving ore not handled on the upper route and did not maintain a regular schedule. In 1923 the company reported a net operating loss of fifty thousand dollars. The following year the general manager of the White Pass and Yukon Route minced no words in describing the business outlook in Dawson as "bad," appending this observation with a request for a drastic reduction in waterfront leases under a veiled threat of pulling out of the city if the request were not granted.⁷⁰ Unfortunately for the company, no immediate relief was obtained, but, despite its threat, it carried on.

While continuing to function as the territory's main highway of trade during the twenties and thirties, the Yukon River became increasingly dependent on one of its tributaries, the Stewart River, for the vital infusion of products – silver-lead ore from the Mayo mines – required to sustain that trade. The Stewart, a 320-mile stream rising in the headwaters of the Mackenzie Mountains, conformed to the pattern established by other northern and eastern tributaries of the main watercourse in that it was fed by precipitation rather than glacial melt.⁷¹ This peculiar condition made through-navigation between Mayo Landing and Whitehorse impossible for all practical purposes as high- and low-water levels were not uniformly distributed throughout the Stewart-Yukon system. Because of this phenomenon, the British Yukon Navigation Company handled traffic between Mayo and Whitehorse in two stages. Bagged ore from the mines was loaded onto sternwheelers and barges at Mayo and conveyed to Stewart Landing where it was transhipped by vessels on the regular Yukon River run. During late May and early June when the Stewart reached its highest level, the company assigned its larger boats to the task of moving as much ore as possible between Mayo and Stewart Landing. That ore which was not immediately transhipped was stockpiled until the Yukon River achieved sufficient depth, generally after 1 July, to permit backlog shipments to the railhead at Whitehorse.⁷²

A shifting navigation channel and prolonged periods of low water, each characteristic of the Stewart River, underlined the need for a specially designed vessel capable of operating within the limitations imposed by the river and able to meet the transportation demands of the lode-mining industry. These requirements were in large measure satisfied by the construction and launching of the SS *Keno* in 1922. Designed especially for low-water use, the *Keno* was a single-stacked sternwheeler 130.5 feet long and 30 feet wide. It had a very light draft, an essential criterion for

103 The SS *Keno* winning off a bar with a "walking stick" or spar. Designed for the Stewart River trade, the *Keno* was built in 1922. Its hull was rebuilt in 1937. The recess in the boat deck gave the wheelman an unobstructed view of the for'deck and the river and

was originally required because the *Keno's* hull was short in relation to its housework. (*Public Archives of Canada.*)



Stewart River operations. Although it had facilities for 32 passengers, the *Keno* was primarily a cargo hauler. When water ran high on the Stewart, the vessel was transferred to the Hootalinqua River or Teslin Lake. During the 1924 season, the British Yukon Navigation Company operated the *Keno* and two sister ships, the *Canadian* and the *Nasutlin*, on the Stewart River, as well as two gas-driven motor launches, the *Hazel B* and the *Neecheah*. By 1928, however, the river was served almost exclusively by the *Keno*.⁷³

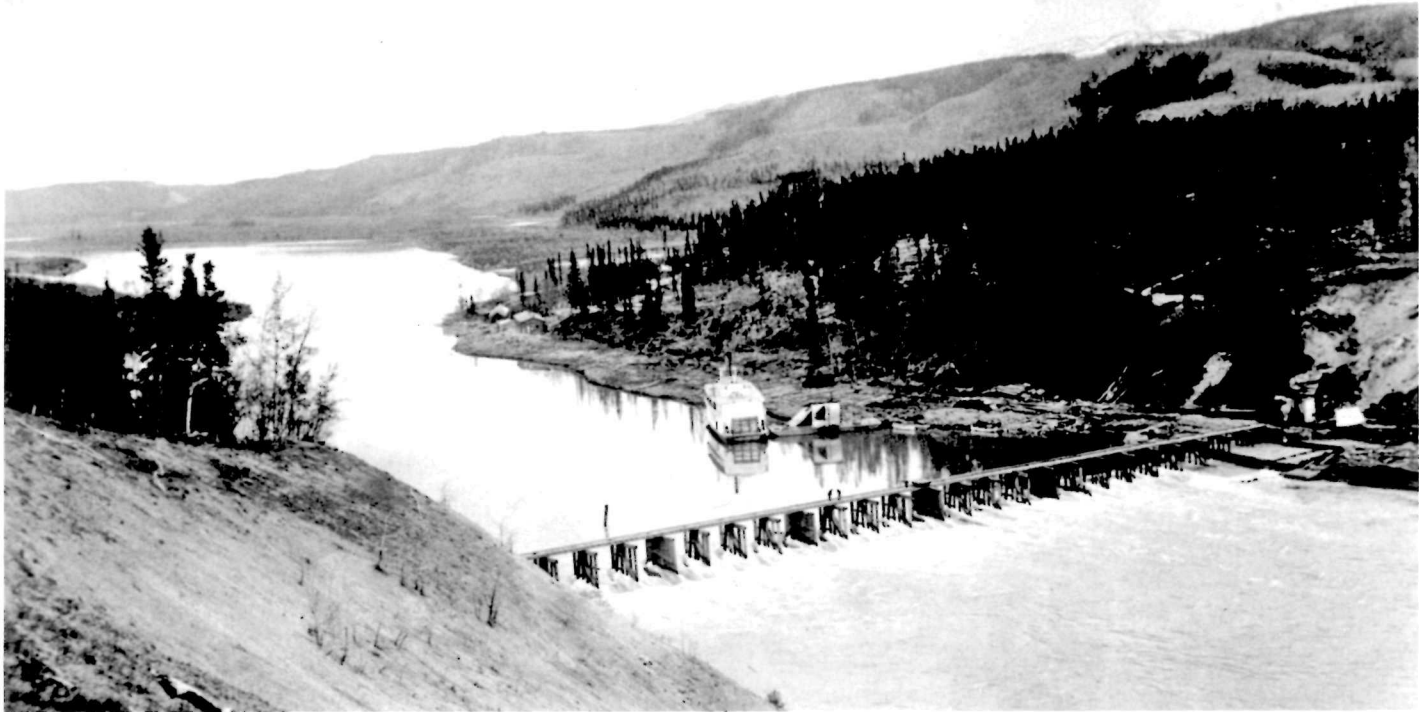
The use of smaller sternwheelers on the Stewart River was only one phase in a continuing battle between the British Yukon Navigation Company and the river. Riddled with rocks and bars, the Stewart remained a difficult river to navigate despite the utilization of the *Keno*. Until the end of the steamboat era in the territory, the Stewart was considered much harder to navigate than the Yukon. Some skippers actually preferred the Stewart to the Yukon because of the constant challenge it presented; however, deckhands were almost unanimous in their condemnation of it and many eyed their Yukon River counterparts enviously. According to G.B. Edwards, the general manager of the White Pass and Yukon Route, 14 sections of the river between Mayo and Stewart Landing required lining, making "it necessary to reduce the cargo down to a mere trifle." In 1922 the territorial government received a request to construct lining cables at various locations and to remove the most menacing boulders on the watercourse. Later that year, improvement work was undertaken on the 20-mile stretch of river west of Mayo entailing rock removal, buoying sandbars and taking soundings. In 1923, cables were installed to facilitate navigation at Twentysix Mile Bar, Jackman's Chute, Long Line Bar, the lower end of Long Line Bar and five miles above Porcupine.⁷⁴

By 1929 the territorial economy had expanded into the upper Stewart region. This region, situated north of the Stewart River above Mayo, was an important centre for exploration, prospecting and trapping. The Mayo district derived much of the timber required for its mining operations there and the region was an important mineral area in its own right because of the Beaver River silver deposits. While the possibilities of the upper Stewart were variously described as "many" and "promising," access was difficult. Two sections of the Stewart River, the only water route into the region, were particularly formidable. Fraser Falls, 43 miles above Mayo, effectively blocked all further sternwheeler navigation. A half-mile portage was required to get above the falls where supplies were transferred to small motor launches for the balance of the journey. Although a tramway was proposed to facilitate the handling of goods around the falls, it was never constructed. At

Three Mile Rapids, so named because they were located three miles above Fraser Falls, the launches had to be tracked through. In the spring of 1935 the rock formation on the left limit of the rapids was blasted and removed, thereby enabling the boats to negotiate the rapids under their own power.⁷⁵ Despite these improvements, river navigation remained an arduous undertaking; in fact, the upper Stewart country holds the unique distinction of being the only place in the territory where overland transportation was not markedly inferior to river transport before 1950.

Many of the improvements to the Yukon River in this period were made in response to the demands of Mayo industry. Low water during May and June impeded the movement of silver-lead ore, disrupting through transport between Mayo Landing and Whitehorse. To a large extent the product of the Yukon's glacier-fed tributaries, this low-water condition was exacerbated by the slow break-up of shore ice on Lake Laberge. Shallow flats at the upper end of the lake were also a factor in delaying the opening of navigation. As early as 1916, Herbert Wheeler, an employee of the White Pass and Yukon Route, had recommended that a channel be dredged through the flats in order to advance the opening of the navigation season. But his proposal, coming as it did before the silver-lead industry had been established, lacked sufficient urgency to be taken up.⁷⁶

With the beginning of large-scale extractive operations during the early twenties, a solution to the problem of low water became urgent. Believing "that unless something could be done . . . the development at Mayo would be retarded," the British Yukon Navigation Company constructed a dam seven miles below Marsh Lake in 1925. Consisting of a submerged weir with flashboard, the dam was built at a cost of \$160,000, the entire sum being borne by the White Pass and Yukon Route. At the end of each navigation season when the rivers and lakes above the dam were close to their high-water levels, the dam was closed. A minimum flow was maintained throughout the winter for domestic use and fire control in Whitehorse. Designed to retain a 13-foot head at the site, the dam created a winter reservoir extending back to the southern end of Bennett Lake that was five feet above dead low water. After 1 May the dam was progressively opened to flush out the ice on Lake Laberge and to raise the level of the Yukon River. An outstanding success, the dam effected a 20 to 25 per cent increase in the carrying capacity of the Yukon River. It advanced the navigation season by some three weeks at a most propitious time, when long hours of summer sunlight permitted 24-hour operation of the river boats, enabling at the same time the first boats of the season to carry full loads.⁷⁷



105 The lampblack trail on Lake Laberge.
(Photo by W. Bamford.)

106 The steamer *Casca* plows through the
lampblack trail. (Photo by W.
Bamford.)

105



106



Another technique developed by the transportation company to hasten the melting of ice on Lake Laberge consisted of spreading a mixture of carbon black, old crankcase oil and diesel oil in a series of strips across the length of the lake. The mixture was sprayed from the back of a truck, the operation being so timed that the application was done in clear weather and while the ice was still solid enough to support the truck. The expediency of the technique depended, Wheeler later recalled, "on whether we get a heavy fall of snow after it has been spread or whether we get continuous clear weather with consequent sunshine," as surface snow inhibited the melting action of the sun upon the mixture. Despite this measure of unpredictability, the treatment was capable of opening a channel through three feet of ice under optimum climatic conditions.⁷⁸

Navigation channels on the Yukon River were modified annually by the movement of gravel, silt and rocks during the spring break-up. At the beginning of each operating season the company would employ two small gas boats, the *Sibilla* and the *Loon*, to chart the most navigable channels on the waterway. Where necessary, the riverbed was raked or scraped to open clogged or closed channels. In 1928, for example, the channel through Hellsgate was scraped with a dragline powered by a donkey engine. While this method achieved satisfactory results, it was costly, provided temporary relief only and caused serious delays to passing sternwheelers. Pile and rock dams designed to divert water into the main channel proved inadequate as well, as the water tended to cut around the ends of them.⁷⁹

In addition to regular improvement work, the company employed artificial means to control the flow of traffic over the river. This was done with a commodity- and class-rate system designed to stimulate or retard the movement of freight as conditions demanded. During periods of low water when heavy freight could not be shipped and thus entailed storage in the company's Whitehorse warehouses, high class rates were applied to discourage shipments. The opposite was true of course during high-water periods when commodity rates were in effect.⁸⁰

As far as the British Yukon Navigation Company was concerned, the best available solution to the channel problem was to dredge out as permanent a channel as possible on the Yukon and Stewart rivers. In 1929 the territorial authorities, cognizant of potential competition for Mayo traffic from Alaskan ports, requested a grant from the Department of the Interior to finance a dredging project, warning the department that "unless navigation on the upper river is improved . . . a large portion of this traffic will eventually go down the River to Alaska." After consulting the Department of Public Works, which declined to fund the project, the De-

partment of the Interior notified the gold commissioner that no assistance could be expected from Ottawa.⁸¹

In return for constructing the Marsh Lake dam, the British Yukon Navigation Company received an annual grant from the territory to defray the cost of general improvement work on the Yukon's navigable rivers.⁸² The company considered the grant to be "niggardly," noting that more money was spent on the less-travelled Stikine. As the territory's sole transportation company, the White Pass and Yukon Route felt that it understood the transportation needs of the Yukon better than anyone else. Such government-sponsored schemes as the Carcross-Whitehorse road, which ran almost parallel to the railway, were viewed with a considerable degree of skepticism when the waterways demanded so much attention.⁸³ The company had a vested interest in seeing government money expended on navigation improvements as overland transport, owing to the increase in motor vehicle use, was becoming progressively more competitive with river transport, especially on certain types of goods.

Barges, the primary mode of conveyance for Mayo ore, contributed to the high cost of shipping. Company officials estimated that pushing a barge added 50 per cent to a sternwheeler's operating time with a consequent increase in fuel consumption.⁸⁴ In an attempt to reduce barging on the Stewart Landing-Whitehorse section of the Yukon River, Herbert Wheeler, the president of the White Pass and Yukon Route, and Bert Fowler, the shipyard foreman, designed a sternwheeler that could carry three hundred tons, a greater freight-carrying capacity than any other boat on the upper river. Constructed in the company's Whitehorse shipyard and christened the *SS Klondike*, the new sternwheeler was launched in 1929. The *Klondike*, 210.25 feet long with a 42.1-foot beam, was, like its sister ships, a light-draft craft.⁸⁵ Although many of its mechanical fittings had once seen service on other Yukon river boats, two features which made the *Klondike* unique on the upper Yukon were a specially designed hull which fed a maximum flow of water into rather than around the paddlewheel and compound condensing engines. The former modification permitted efficient wheel-blade operation in shallow water even when the *Klondike* was operating at full capacity.⁸⁶

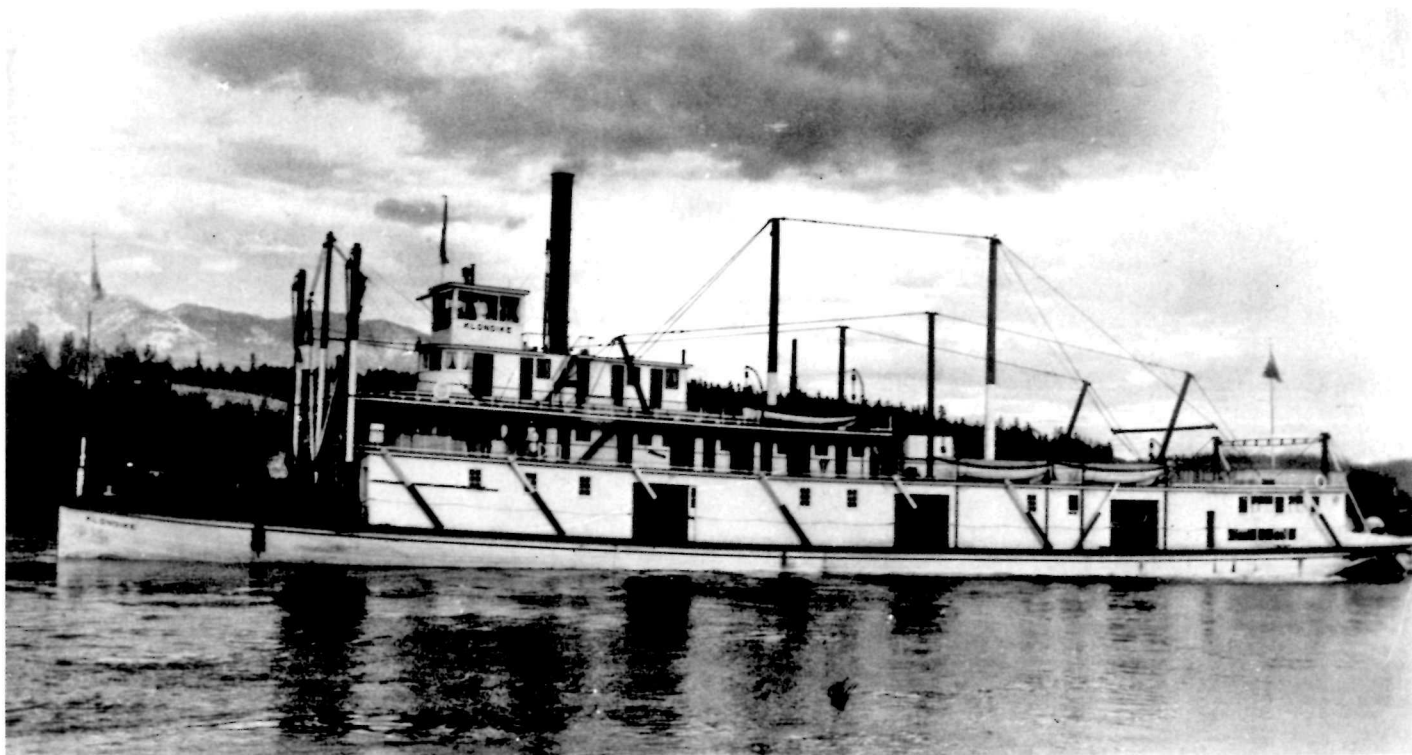
The *Klondike* performed ably. From Stewart Landing, where silver-lead ore was hand-trucked onto the *Klondike's* cargo deck, the upstream run was completed in the same time as a sternwheeler operating without a barge.⁸⁷

The 1930s were difficult years for the British Yukon Navigation Company. The collapse of silver-lead production, reaching a low of 110 tons in 1935, led to drastic decline in transportation revenues. Although gold production was increased substantially

107 Steamer *Aksala* and barge approaching Five Fingers Rapids on the upstream run. (Photo by S. White.)



108 SS *Klondike* No. 1, 1929. The *Klondike*'s housework was kept to a minimum, all emphasis being placed on cargo capacity without sacrificing shallow draft. (*Public Archives of Canada.*)



after 1932, the transportation requirements of the Klondike district remained relatively static. In an effort to reduce operating expenses, the company conducted experiments with coal-fueled boilers; however, boilers did not function well with this type of fuel and, as a consequence, wood-burning systems were retained.⁸⁸

In 1936 the company suffered a severe blow when two of its sternwheelers, the *Klondike* and the SS *Casca*, were wrecked. Fortunately, the disaster occurred at a time when silver-lead production was at an extremely low level, thereby diminishing the impact of the loss on Mayo shipments. Both were rebuilt in 1937, *Klondike* No. 2 being slightly smaller than its predecessor. White Pass officials have since maintained that reconstruction costs placed a serious strain on the company's resources and that this, combined with manpower and material shortages during the late thirties and the Second World War, prevented the company from properly maintaining its sternwheeler fleet. Interviews conducted with shipyard personnel lend little credence to this claim, however, and the annual reports filed by the steamship inspector leave no doubt as to the worthiness of operating British Yukon Navigation Company boats.⁸⁹

Between 1914 and 1939 the Yukon transportation system retained its intimate association with the navigable waterways. Although the time had long since passed when the movement of freight was confined to the summer months, a seasonal pattern to transportation persisted that was directly attributable to a dependency on water routes. The location of supply centres and distributing points, moreover, continued to be determined in large measure by their proximity to main water routes as is evident from the following exchange. In 1923 a proposal was put forth to relocate the office of mining recorder from Mayo Landing to Keno Hill, the centre of extractive operations for the entire district. In refusing to counsel the move, the Northern Affairs Branch of the Department of the Interior cited as its main objection the fact that "[as the Stewart] river is the general means of communication in this district it might be a mistake to remove the office from the river and from the point at which transshipment of ore is taking place."⁹⁰

The most important single factor governing water transport between the wars was mineral production from the Mayo district. The demand for transportation created by the lode-mining industry sustained the British Yukon Navigation Company through what was otherwise a very difficult period. As a revenue-producing source, moreover, silver-lead ore was far superior to gold. Whereas one ton of silver-lead ore or concentrate was equal in value to an estimated four to five ounces of gold, the return to the transportation company on the latter was negligible in comparison to the revenues realized from shipping the products of the

Mayo mines. Tonnage statistics recorded by the White Pass and Yukon Route show that on the average twice as much freight was handled between Mayo and Whitehorse than between Whitehorse and Dawson during those years when the Mayo mines operated at or near capacity.⁹¹ As one writer has noted, "without the Treadwell mine contract the regular sternwheeler schedule would have been reduced to occasional supply runs to Dawson."⁹² Mayo industry and the British Yukon Navigation Company were mutually supportive. Neither could have functioned without the other. Just as the transportation company was dependent on silver-lead for vital revenue, so was the mining industry dependent on the river facilities of the British Yukon Navigation Company for getting its ore to the smelter.

But this dependence on water transport had many limitations. The seasonal nature of river navigation forced Treadwell Yukon to maintain on-site inventories that were far larger than those stocked by comparable silver-lead producers operating in Quebec and British Columbia.⁹³ Because the transportation season was confined to 5 months of the year, the company often had to wait a full 12 months before returns from the previous year's work were received. As a consequence, investments in working capital were necessarily large with attendant high interest charges. The instability of silver-lead prices, which were subject to wild fluctuations on the market, meant that local producers operated under the added burden of never knowing what they would receive for their ore. Water transportation was deficient in another very important respect. It precluded speculative production increases on the basis of market trends. In August 1929, for example, the territorial gold commissioner, G.I. MacLean, wrote that "if we had adequate transportation the output [from the Mayo mines] would be very materially increased, but when the White Pass can only handle a certain tonnage each year, there is no advantage in increasing the output beyond that figure."⁹⁴ Ironically, the collapse in silver-lead prices that was just around the corner would have deterred production increases anyway. Nevertheless, MacLean's statement clearly underlined one of the basic drawbacks of water transport – its inability to adjust to rapid and substantial changes in demand.

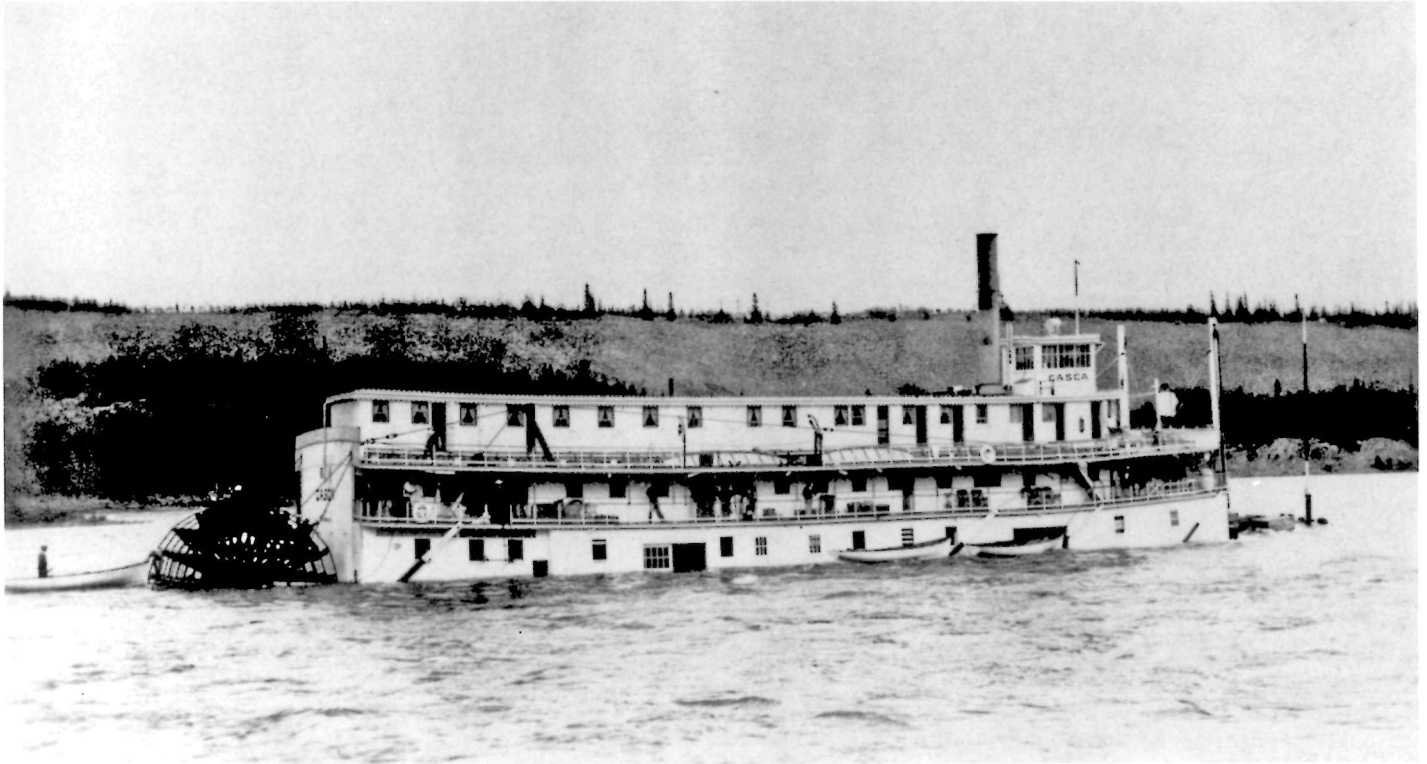
IV

While the era of the dog sled and canoe had long since passed into history, no new advance in Yukon transportation had ever overcome the twin handicap that was as old as Yukon transportation itself: extended supply lines and slow modes of travel. During the 1920s this twin handicap was effectively challenged by an entirely new form of transportation – the airplane. Unlike other forms

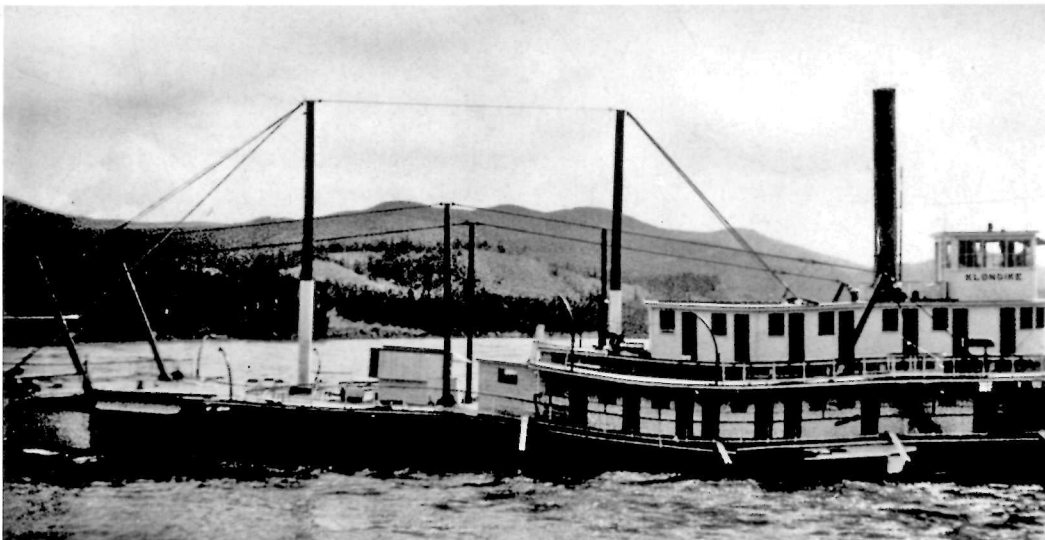
109-110 In 1936 the British Yukon Navigation Company lost *Casca* No. 2, which foundered in Rink Rapids (Fig. 109), and *Klondike* No. 1, which hit a rock five miles below the confluence of the Yukon and Hootalinqua (Teslin)

rivers (Fig. 110). (Photos by J.J. Forde and from the Maritime Museum, Vancouver.)

109



110

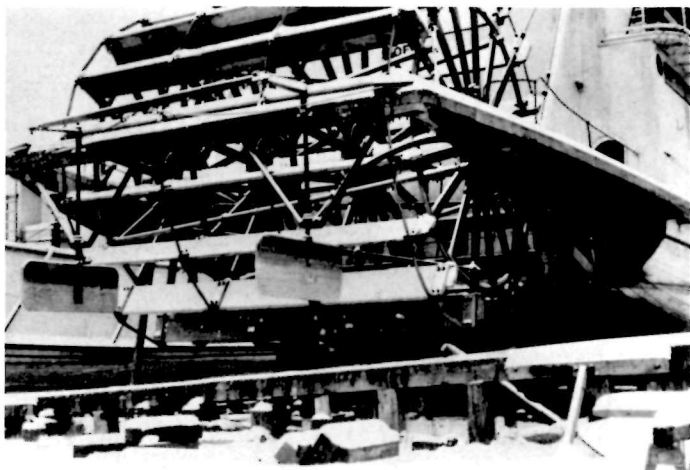


111-116 The shipyard at Whitehorse.
111, The wheel of the *Aksala*. (Photo by R. Kingston.) 112, To enlarge the *Nasutlin*, boatwrights cut it in half and added a middle section. The shipyard crew called it the "Nasutlin stretch." (Photo by S. Smith.) 113, The building

of *Klondike* No. 2. The boiler from the steamer *Yukon* (background) was used in *Klondike* Nos. 1 and 2. (Photo by S. Smith.) 114, A crew removing ice from the slipways. (Photo by W. Crawford.) 115, To launch the boats in spring, "butter boards" were fitted

to the ways and the boats were lowered onto these from cribs. Tallow was then liberally applied to the ways. (Photo by H. Perchie.) 116, When the signal was given, the boats were launched. (W. Bromley Collection.)

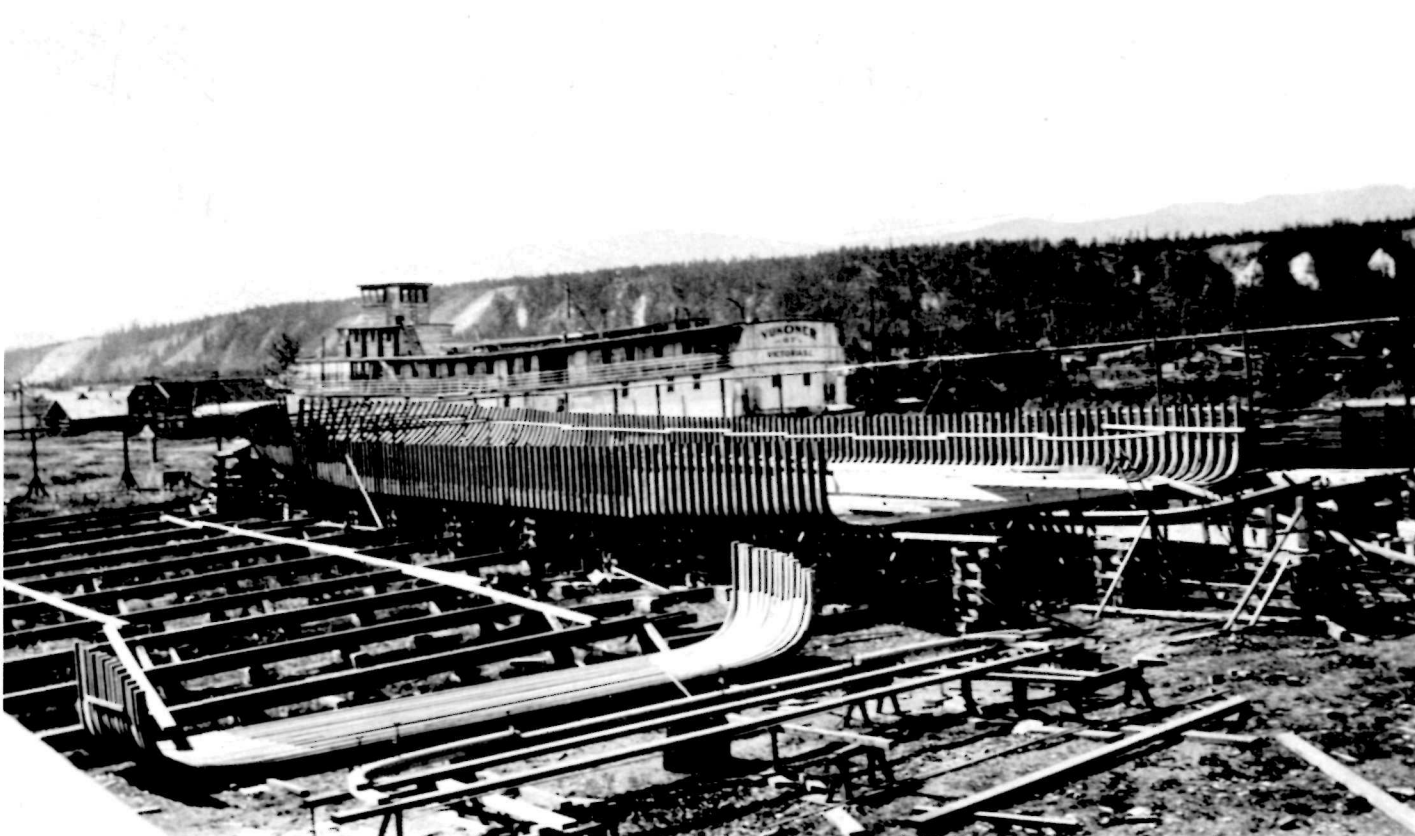
111



112



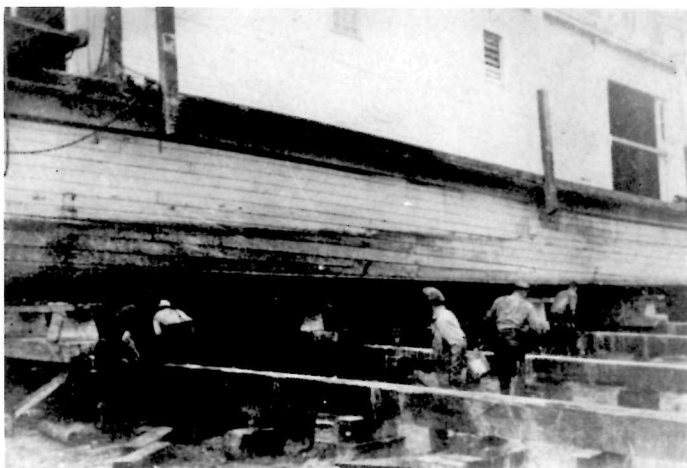
113



114



115



116



117



of transportation such as the sternwheeler, the railroad and the automobile, the airplane found its first Canadian civil application in the North.

The North's unique role in the early history of Canadian aviation was in large measure the product of a fortunate set of circumstances. Postwar demobilization had left the country with a large surplus of aircraft totally "unsuited to inter-city traffic either for passengers or goods," but easily "adapted both to the conditions and needs of aviation in the north." The North abounded in lakes and rivers that provided ready landing sites for ski- and pontoon-rigged aircraft except for those periods when the ice was forming or breaking up. These natural landing facilities were crucially important during the pioneer phase of development as man-made landing strips were economically unfeasible.⁹⁵

Much of the early interest in northern aviation originated with the Canadian government. Following the war, the government conducted an extensive inquiry into the potential of air transport in the North. The response of several mining companies and a number of government departments was favourable enough to justify further study with the result that the Canadian Air Board was established in 1919. During its brief existence the board did much to foster the development of northern aviation through such undertakings as its aerial survey programme. Unfortunately, the Department of National Defence, which assumed responsibility for aviation when the board was abolished in 1923, was less attuned to the northern possibilities of the airplane and government interest in promoting northern aviation soon diminished.⁹⁶

Despite the government's early encouragement of northern aviation, the first airplanes to reach the Yukon were not Canadian but those of the First Alaska Air Expedition, an American-sponsored venture to determine the feasibility of establishing an air route between Alaska and the United States. Consisting of four, two-seater De Havilland 4Bs piloted by eight U.S. Army Air Corps pilots, the expedition left New York on 15 July 1920 for Nome, Alaska. On 16 August the planes made a scheduled stop at Whitehorse, thereby becoming the first aircraft to land in the Yukon territory. A day later they flew on to Dawson where they were greeted by an exuberant crowd and the commissioner of the territory, G.P. Mackenzie.⁹⁷

The local inhabitants were quick to grasp the significance of the expedition. They recognized that the airplane represented a practical solution to their isolation. The air, unlike the rivers, the roads and the railroads, provided an unlimited medium of travel free of shallows, narrow channels, ice, grades, permafrost and drainage. At Dawson the air corpsmen presented the commissioner with a petition from the citizens of Whitehorse. The petition expressed

the "fervent hope that our Government will keep pace with other countries in the establishment of a regular aeroplane service throughout our Dominion and especially in the Yukon where it is so much needed."⁹⁸

Despite these very significant early advances, six years were to elapse before air transport was established in the territory. The abolition of the Canadian Air Board brought to an end the government's early interest in aviation's northern orientation. In the interim, however, a variety of small airlines continued to operate in the northern regions of the central and prairie provinces with the result that the design and technology of the airplane were rapidly improved. By the mid-twenties aircraft with closed cockpits or cabins, high wings, air-cooled radial engines and adaptable landing gear had been developed that were well-suited to the conditions of northern flying.⁹⁹

The first company to offer commercial air service in the territory was the Whitehorse-based Yukon Airways and Exploration Company. Organized in 1926 by a group of Mayo district and Whitehorse businessmen, Yukon Airways commenced operations in the spring of 1927. The company's first aircraft was a Ryan monoplane, appropriately named *Queen of the Yukon*. The *Queen* had a payload capacity of twelve hundred pounds or five persons and flew the Whitehorse-Dawson-Mayo circuit with occasional side trips to Keno.¹⁰⁰

Plagued by personnel problems, a lack of capital, crashes and poor management, Yukon Airways succumbed in 1929. Its assets were taken over by a group of Mayo district miners and businessmen and a new company was incorporated in May of 1929 which retained the name of its predecessor.

Prospects for the new company dimmed perceptibly when within the brief span of five and one-half months it lost two of its three planes. In an attempt to recoup, the owners appealed to the minister of the Interior to rebate the \$9,000 duty paid on the aircraft and requested the short-term loan of a pilot and plane. During the negotiations with the department the company lost its third plane and when the department failed to proffer assistance, Yukon Airways was compelled to terminate its operations.¹⁰¹

Despite the formidable problems associated with these early attempts to establish Yukon aviation, the airplane had performed well enough to justify a confident appraisal of its future role in the territory's economic development. The mineral industry in particular was cited as a potentially major beneficiary. As G.I. MacLean, the territorial commissioner, wrote, *the airplane will . . . [enable] prospectors to reach locations in a few hours and get down to a good season's work, whereas, under present conditions practically all their time is consumed in getting*

*in and out of these places during the season of open navigation, and therefore, they are to all intents and purposes inaccessible. It will also be a great factor in providing rapid transportation for mining experts and others who may wish to make a trip into the country, and who could not spare the time occupied in travelling under present conditions.*¹⁰²

The first local company to use the airplane for prospecting was Treadwell Yukon. The company acquired a five-seater Fairchild monoplane in 1928. This aircraft was an all-season vehicle equipped with pontoons, wheels and skis. The following year another aircraft, a De Havilland Moth biplane, was purchased. During the 1929 season Treadwell Yukon prospected the Snake and Peel river regions. According to O.S. Finnie, director of the Northern Affairs Branch of the Department of the Interior, Wernecke would fly his men into designated prospecting zones, leave them there for upwards of a month and then return with additional supplies and transfer them to another area. In 1929 the "Fairchild and Moth planes made 263 flights, flying 358 hours and covered 31,240 miles of territory. They carried a total of 131 passengers, 11,351 pounds of express and 10,877 pounds of mail." For his pioneering efforts on behalf of Yukon aviation, Martha Black later wrote that Wernecke should be credited "in no unstinted measure" with the "foresight, the planning and use of the plane."¹⁰³

There has been some confusion concerning the operation of two companies, each of which bore the name Klondike Airways. The name Klondike Airways was originally adopted by Greenfield and Pickering, the winter mail contractors on the Overland Trail, and subsequently used by Richards and Phelps who succeeded Greenfield and Pickering in 1929. In both cases the name Klondike Airways was used to describe one aspect of a transportation service provided by these companies; it did not, as the name implied, connote ownership of aircraft.

Greenfield and Pickering's decision to use the name Klondike Airways can be traced back to late February of 1928 when Pickering announced that if the company's winter mail contract were extended for four years, the company would purchase two airplanes and operate them "when business and weather conditions permitted." This last stipulation applied to freeze-up and break-up when the Overland Trail was unsuitable for tractor use. The airplanes were never purchased, however, and subsequent arrangements were made with Treadwell Yukon to lease one of that company's planes. In October 1928 a notice appeared in the *Dawson Weekly News* informing the public that Greenfield and Pickering had contracted the Treadwell Yukon Fairchild and that

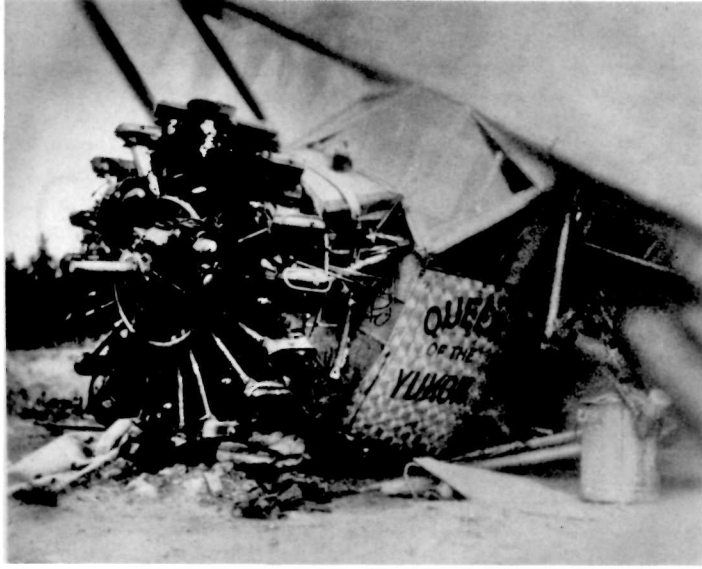
"scheduled mail and passenger flights between Dawson, Mayo and Whitehorse" would commence immediately.¹⁰⁴

Greenfield and Pickering surrendered the winter mail contract and terminated their Overland Trail operations in 1929. On 12 February 1930 a second company, also named Klondike Airways, was incorporated under the directorship of T.C. Richards and W.L. Phelps of Whitehorse. Richards and Phelps continued the arrangement initiated by Greenfield and Pickering whereby a plane was leased from Treadwell Yukon to transport mail, passengers and express during those periods when the Overland Trail could not be used. Although the Register of Canadian Civil Aircraft (September 1928) lists a Fairchild and a De Havilland Moth under W.L. Phelps's name, these aircraft were owned by Treadwell Yukon. Phelps's name was used because he was Treadwell Yukon's attorney and resident Yukon agent.¹⁰⁵

In retrospect, the late twenties and early thirties can be seen as a period of difficult gestation in the history of Yukon aviation. As G.A. Jeckell, the territorial comptroller, later recalled, "at this time there were practically no landing fields in the Yukon, and none of any size, landings being made mostly on river bars, outside of a field at Whitehorse." Summer and winter flying were not adversely affected as most of the early aircraft were equipped with pontoons or skis, but wheel-rigged planes required on-land facilities, for which river bars were little more than a temporary and inadequate substitute. The provision of landing fields posed two distinct problems. The existence of permafrost made the construction of stable as well as level landing fields difficult, while the demand for on-land facilities was too small to underwrite the capital cost of airstrip construction. Consequently, the risk factor was increased at the same time as the operational efficiency of the airplane was diminished because short, rough fields and bars retarded the necessary ground speed required for maximum load take-off.¹⁰⁶

Between 1927 and 1930, fields that can best be described as makeshift were laid out at Whitehorse, Dawson, Mayo and Keno. Another field was built near Minto at the junction of the Overland Trail to serve as an emergency landing facility for planes operating between the territory's main population centres. Like so many other aspects of Yukon transportation, no clearly defined procedures governed the financing and selection of territorial airfields before 1940. More often than not the various companies engaged in aviation assumed much of the burden, relying on the territorial government to later reimburse them. This was a sensible, if not entirely satisfactory, approach given the nascent state of aviation. Exclusive private control was consciously avoided, however, as any attempt to charge tolls would, in Wernecke's words, have

118 Yukon Airways and Exploration
Company's *Queen of the Yukon* after
crash. (Public Archives of Canada.)



119 British Yukon Aviation Company's
Curtis Condor taking on fuel at Mayo
airfield. (Yukon Archives.)



made the company concerned "about as popular as a skunk at an afternoon tea."¹⁰⁷

While pontoon-rigged aircraft were left untouched by the question of airfields, their dependence on water for take-off and landing posed certain specific problems. Water take-offs required wind assistance, and Jeanne Harbottle, whose husband was one of the Yukon's pioneer airmen, has recalled the "hours spent on a calm lake waiting for enough wind to get airbourne." In mountainous country especially, where waterways tended to be sheltered, the absence of wind could ground an aircraft as effectively as an empty fuel tank. Obversely, too much wind was not desirable either as few machines were powerful enough to offset the consequent instability.¹⁰⁸

The absence of an effective system of radio communication for the transmission of weather reports was another limiting factor during the gestation phase of Yukon aviation. Pilots were understandably hesitant to fly when climatic conditions were unknown. While Dawson and Mayo were served by an efficient system of wireless communication over which weather reports could be exchanged with despatch, the only connection with Whitehorse, already the air hub of the territory, was an "entirely inadequate" telegraph line between Whitehorse and Dawson, and all contact between Whitehorse and Mayo had to be routed through Dawson, a diversion that was totally unsatisfactory as the telegraph line was "down much of the time" and closed during the mornings, evenings and on holidays.¹⁰⁹

The problems that ensued from this weak link in the communication chain were numerous and Wernecke, a strong advocate of installing a wireless station at Whitehorse, was one of its severest critics.¹¹⁰ On one occasion he sarcastically informed the gold commissioner of an incident that had just involved a Treadwell plane.

*Today the plane left Whitehorse at 11:15 for Dawson but ran into a snow storm at the McQuestion [sic] River. The pilot turned about and arrived at Mayo about 2:15, 15 minutes before we received the wire from Whitehorse notifying us that the plane had left there. In other words Stephens is flying faster than the telegrams sent from Whitehorse to Mayo.*¹¹¹

Because meteorological information was not readily available, pilots were compelled to fly by "visual flight rules." This entailed maintaining contact with the ground at all times, a requirement that could only be satisfied by daylight flying.¹¹²

Although the Yukon Airways and Exploration Company had had both a pilot and a mechanic, division of labour along these lines was not a conspicuous feature of aircraft operations during this period. Treadwell Yukon, the largest of the early outfits pro-

viding some measure of air service, expected its pilots to be expert flyers as well as trained mechanics and Wernecke asserted that those who could not perform both functions were "not suitable to have charge of a ship in this country."¹¹³ Even those companies whose sole business, unlike Treadwell Yukon's, was flying required that a pilot have some mechanical knowledge in case his aircraft were downed during a trip. These requirements, coupled with a paucity of airfields and a deficient communications system, gave birth to a peculiar breed of airman known throughout the North as the "bush pilot."

In the popular imagination, the term "bush pilot" has come to mean a variety of things, not the least of which is a pilot who introduced a high risk factor into northern operations, literally flying by "the seat of his pants." As Frank Ellis has written, "nothing could be so false. The companies which pioneered flying in the north employed only skilled airmen and highly trained engineers, all of whom could be fully relied upon, both in the air and on the ground." The term "flying by the seat of his pants," moreover, had nothing to do with "skimming the tree-tops," but was used to describe a pilot's reaction to the angle of pressure against his seat, a phenomenon that informed the pilot of his plane's exact flight angle, thereby facilitating immediate correction when necessary.¹¹⁴

Despite these many difficulties, the frontiers of aviation were progressively extended. In 1932 Canadian Airways (incorporated in 1929) entered the Yukon field. The following year Northern Airways of Carcross was established. Starting as a small operation dependent on a leased Treadwell plane, Northern Airways expanded rapidly into a four-plane operation running principally between Carcross and northern British Columbia. United Air Transport of Edmonton commenced chartered flying into the Yukon during 1934, the same year that the White Pass and Yukon Route started its own airline operation from Skagway with American-registered craft. In 1935 the White Pass and Yukon Route opened an office at Whitehorse under the name British Yukon Aviation and quickly established itself as the territory's largest airline. According to Jeanne Harbottle, the company once enjoyed the distinction of having the largest passenger plane in Canada, an 18-seat twin-motor Curtis Condor.¹¹⁵

Great strides were made during the late thirties. Increasingly the airplane became a significant factor in territorial transportation, a fact reflected in the number of take-offs and landings recorded at Whitehorse: 638 in 1935, 959 in 1936 and 900 in 1937. By 1938 four airlines were operating through Whitehorse on a regular and continuing basis: Pacific Alaska Airways, British Yukon Aviation, Northern Airways and United Air Transport, later re-

organized as Yukon Southern Air Transport.¹¹⁶ This substantial increase in air traffic was paralleled by a number of significant developments in northern aircraft technology. Engines, for example, were modified to facilitate greater hot-air reception and equipped with additional cowlings for low-temperature operation. These developments in turn were incorporated into new aircraft constructed by Canadian manufacturers. At the same time, the Air Research Committee of the National Research Council stepped up its northern research programme, concentrating on cold-weather starting, lubricating and cooling problems. The impact of low temperatures on lubricating oils was investigated and experiments were conducted with tapered wings and the strength of such common aircraft components as spruce, plywood, streamline wire and rubber shock cord.¹¹⁷

These advances were accompanied by a resurgent interest in the northern potential of the airplane. By the late thirties the Yukon was being touted as the future crossroads of the world. A 1937 article in the *Canadian Geographical Journal* confidently asserted that "communication with the Orient will most probably be established through this particular territory." In spite of the predictions, the Yukon-Orient air route failed to materialize as a viable alternative to existing air routes. The economic potential of the route was severely limited by the sparse population it served and while the air distance between Chicago and Hong Kong was 2,760 miles shorter via the Yukon than by the conventional San Francisco-Honolulu-Manila route, technical practicality was no match for economic reality.¹¹⁸

By the end of the decade the territory was served by a number of good airports. Major fields were located at Whitehorse, Dawson, Mayo and Carcross; smaller ones at Selkirk, McQuesten and Carmacks. Each of these airports was built by the territorial government. Another field at Burwash was constructed by Pacific Alaska Airways. During 1939–40 an extensive air strip construction programme was undertaken by British Yukon Aviation as part of the Northwest Staging Route project. Emergency landing fields were built at Mica, Crooked and Flat creeks, on upper Laberge, at Braeburn, Montague, Fox Lake, Little Salmon, Yukon Crossing and Grand Valley. In addition, the old Treadwell emergency field at Minto was substantially improved by the government.¹¹⁹

Like the Overland Trail, the evolution of which air transport closely resembled, the development of aviation in the Yukon owed much to postal considerations. The Whitehorse citizens' petition of 1920, flown to Dawson by the First Alaska Air Expedition, had declared that "we hope soon to see mail-bags substituted for bomb[s]."¹²⁰ Commissioner Mackenzie's reply, delivered to

Whitehorse by air on the expedition's return trip, found the commissioner in complete agreement.

I was in receipt of your kind letter [petition] . . . three hours and ten minutes after it was delivered, a convincing argument in itself in support of your proposal that the time is now ripe for the inauguration of aerial mail communications in the Yukon.

*I beg to assure you that I am in hearty accord with the view so well expressed in your communication and will do all in my power to advance the matter.*¹²¹

The first attempt to establish an air-mail service ended in failure when the White Pass and Yukon Route successfully opposed a 1924 application by Laurentide Air Service for the Yukon postal contract.¹²² In 1927 Treadwell Yukon secured a special authorization to fly mail between Whitehorse and Dawson on a non-contract basis; the service being limited to ad hoc carriage as a public service when the company plane had enough space and was already engaged in flying from one point to another.¹²³

The first commercial air-mail flight in the territory was made by the Yukon Airways and Exploration Company on 11 November 1927. On that date the *Queen of the Yukon* left Whitehorse for Dawson and Mayo, completing the trip in just under four and one-half hours. The *Queen* did not touch down at Dawson, that city's first air mail being dropped from the plane as it circled the airfield. Each letter bore a special Yukon Airways 25-cent sticker in addition to a regular postage stamp. The mail was not carried under contract but with the permission of the postal authorities, the 25-cent sticker being the company's sole source of remuneration.¹²⁴

In the autumn of 1928 Greenfield and Pickering, the winter mail contractors, completed an arrangement with Treadwell Yukon to lease the latter's plane for mail carriage during those periods when the Overland Trail was closed to traffic. This arrangement was continued by Richards and Phelps, who succeeded Greenfield and Pickering in 1929.¹²⁵

The introduction of air-mail service on a limited basis came as a great boon to the residents of the territory. Winter mail service had always been deficient, an unfortunate by-product of slow modes of travel and restrictions on second- and third-class mail. In the Dawson region, for example, where employment in the mines was seasonal, men often passed the winter without an opportunity to read outside newspapers and magazines because they were held in Whitehorse to await spring transit. When these were finally brought downriver on the first river boat of the season, the men had returned to work and "old papers and magazines, dating back to September and October of the previous year" were used to "make one grand bon-fire."¹²⁶

Mail recipients were not alone in benefiting from this limited air-mail service. The mail contractors themselves found the airplane a far more efficient means of transportation during the spring and fall months than conventional overland vehicles. Additionally, air transport was substantially cheaper than ground service. Whereas the mail contractor had traditionally considered himself fortunate to break even during this period of the contract, Greenfield and Pickering showed a gross profit of three to four thousand dollars after their first fall operation.¹²⁷

Despite the airplane's success, no immediate attempt was made to introduce winter, let alone all-season, service. The British Yukon Navigation Company still relied upon the summer contract for necessary revenue, while ground service was required for the movement of heavy freight during the winter. The winter contractor could not afford to furnish scheduled air-mail service in addition to the regular tractor operation. By 1937, however, local corporate pressure against all-season air-mail service had subsided. In July of that year regular air-mail delivery under government contract was inaugurated between Edmonton and Whitehorse by United Air Transport and British Yukon Aviation obtained a winter contract to carry mail to all points north of Whitehorse. In 1938, direct air-mail flights between Vancouver and Whitehorse were initiated by Yukon Southern Air Transport, an amalgamation of United Air Transport and Ginger Coote Airways, while in the same year Pacific Alaska Airways joined British Yukon Aviation in giving American air-mail service to Whitehorse.¹²⁸

The conversion to air-mail service spelled the end of the Overland Trail. First conceived (in 1901) as a means to obtain the territorial postal contract, the trail could not survive the loss of its postal function. The airplane, which had been introduced only a decade before, had become in that brief time a major force to be reckoned with in Yukon transportation.

The airplane holds a unique place in the history of Yukon transportation as the first transportation form to mount an effective challenge to remoteness, a problem that had plagued the territory since the days of the fur trade. Admittedly, the airplane did not entirely eliminate this problem. The movement of heavy freight, for example, continued to be an unwieldy proposition. Nevertheless, the airplane did materially reduce the gulf that had existed between the territory and the rest of the country. As one observer, conscious of historical parallel, wrote, "much in the same manner as British Columbia was more firmly united with other Canadian provinces through the establishment in 1886 of a transcontinental railway service, the Yukon need no longer be considered an outpost of empire."¹²⁹

In the Yukon the airplane found a functional application that was quite distinct. Whereas the airplane was forced to vie with other forms of transportation as a "competitive means of luxury travel" in those areas that were densely populated, it served as a "common vehicle of all-season transport" in the Yukon.¹³⁰ This function was facilitated by the economics of aviation, making the airplane particularly well-suited for northern use. The airplane was "floatable" – it could be moved easily, something that was not true for a river, road or railroad track. The capital cost involved in aviation was limited, a characteristic not shared by more conventional forms of transportation. Given the fact that the margin for economic miscalculation in the Yukon has often been extremely limited, investment in transportation facilities, especially for development purposes, has always been a high-risk proposition. At the same time, the demand for transportation, especially for developmental purposes, has been high as a result of the non-renewable resource base of the territorial economy. Because the airplane was floatable and represented a limited fixed capital cost, it proved remarkably well-adapted to the needs of Yukon transportation.

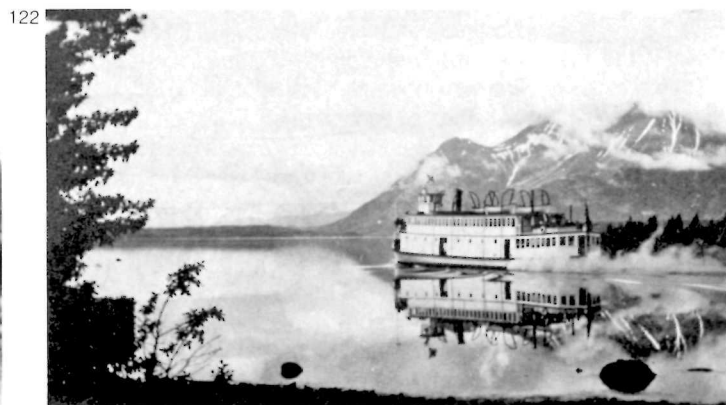
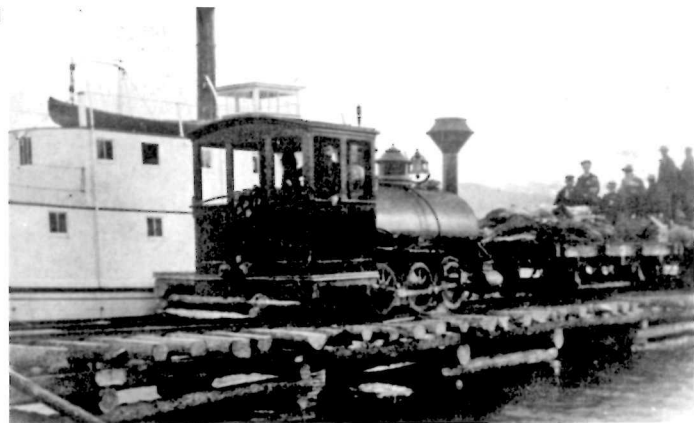
V

The interwar period was a difficult time for the White Pass and Yukon Route. Despite the demand for transportation created by the successful establishment of the Mayo mines, tonnage statistics compiled by the British Yukon Navigation Company show that shipments declined from 28,000 tons before 1914 to 14,245 tons in 1928 and 18,121 tons in 1939.¹³¹

It is hardly surprising, in view of the interlocking nature of the transportation system, that the railway experienced many of the same difficulties. According to Walter Hamilton, mining activity, supplemented to a large extent by tourism, just kept the wheels rolling throughout this difficult period. Although the railroad historians Thompson and Edgar could write that the "roadbed now [1933] compares very favourably with that of any mountain railway in North America," their assessment belied the fact that the company was in serious trouble. In 1928 Herbert Wheeler reported that the company was operating on a very small margin and this margin progressively deteriorated during the 1930s. It is said that Wheeler, who by this time had become president, once mortgaged his house to pay his employees and that senior corporate officials drew no salaries during the winter months.¹³² It was not unusual for the company to request payment in advance of delivery in order to maintain its attenuated winter schedule and one official has recalled the desperate company meetings called to decide which was more costly – to default on the U.S. mail

120-122 The highlight of a northern trip was an excursion to Atlin Lake. Tourists detrained at Carcross and boarded the SS *Tutshi* for either Ben-My-Cree, or Taku on the west arm of Tagish Lake (Fig. 120). At Taku, visitors climbed aboard a train for the two

and one-half mile trip (Fig. 121) to the MV *Tarahne* on Atlin Lake (Fig. 122). (Public Archives of Canada, Yukon Archives, R. Kingston.)



contract and pay the requisite penalty or to deliver the mail on time. Dividends were all but forgotten, 1912 being the last year that the shareholders were to realize a return on their investment until the late 1950s.¹³³

VI

Ironically, the economic vagaries of the 1914–39 era did not stifle transportation development. If anything, retrenchment seems to have forced a rationalization of the transportation system that might not have occurred had prosperity been the distinguishing feature of the period. The emergence of Whitehorse as the transportation hub of the territory was part and parcel of this rationalization and anticipated the transfer of the territorial capital from Dawson. Until 1923–24 the pattern of territorial transportation had confirmed Dawson's quasi-metropolitan function, but that function could not survive the economic decentralization that followed the rise of Mayo and so it was that Dawson's one-time auxiliary, Whitehorse, came to be cast in the former's role.

The most important single factor underlining transportation during this period was the exploitation of silver-lead ore. The emergence of Mayo not only wrought a change in transportation routes, thereby diminishing Dawson's importance as a transportation centre, but also provided a foundation for the existing transportation superstructure and a focus for improvement and innovation in the types of transportation. Of these innovations, the two most significant, the airplane and the tractor, were added to the transportation system because of the efforts of Mayo district miners and businessmen.

The evolution toward monopoly control of the mining industry in both the Klondike and Mayo districts was in large measure a response to the transportation problem. By reducing its commitment to the Yukon after the First World War, especially in the area of finance, the government indirectly fostered the growth of these monopolies as the only form of economic organization with the capital resources necessary for investment in power utilities and transportation, each of which was vital to large-scale mining.

For all the improvements and innovations that marked the interwar period, two basic problems remained. While remoteness was alleviated in a limited way by the airplane, it remained an intractable problem in terms of heavy freight transport. The continuing dependence on river transport, moreover, subject as it was to seasonal climatic changes, delayed the conversion to all-season, overland transport – a crucial requirement for economic development as the territory hung on the verge of the mid-20th century.

The Military Legacy

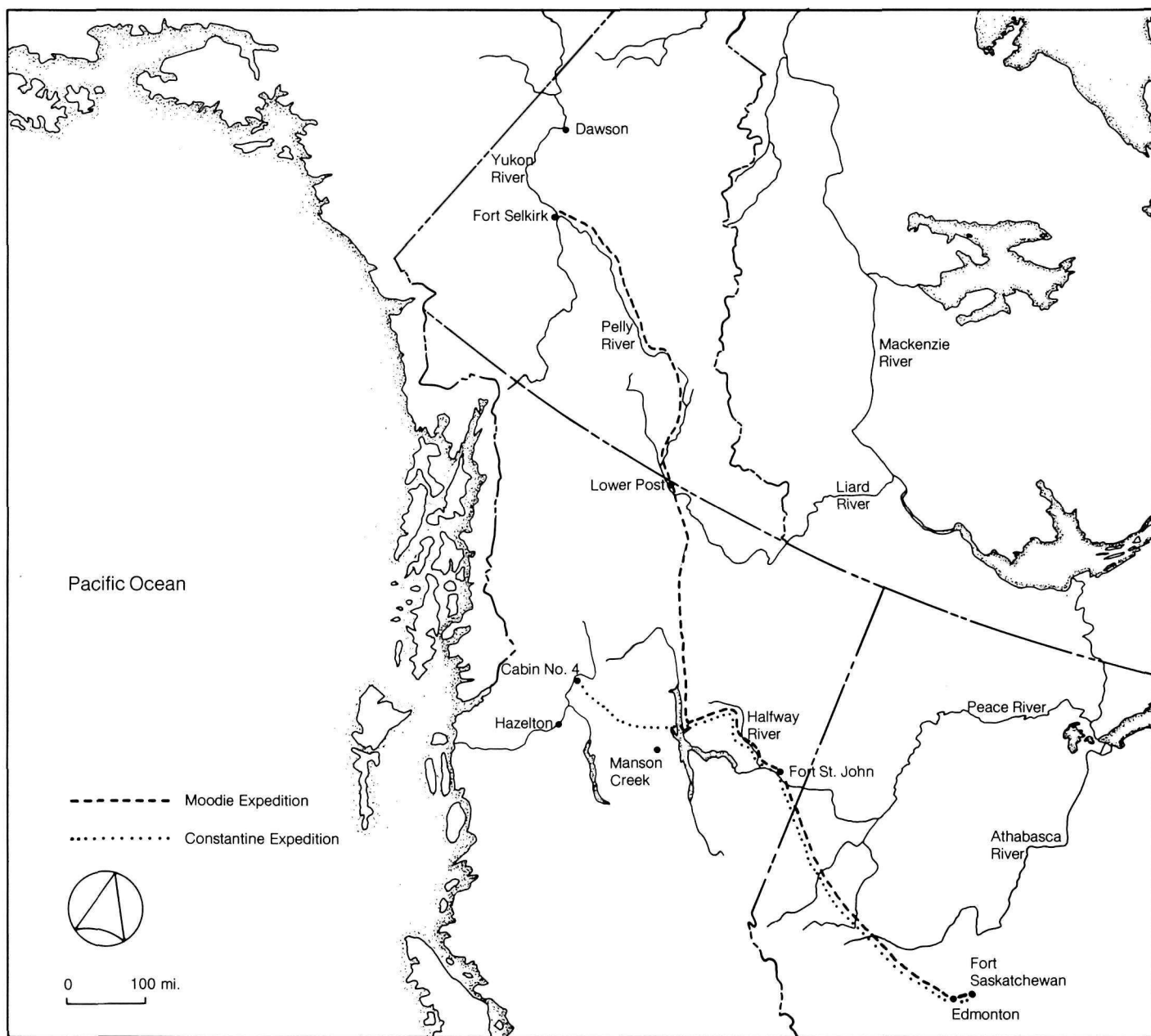
I

Unlike the First World War, the impact of which was virtually negative, the post-Pearl Harbor phase of World War II engendered a massive investment in northern transport facilities that was directly related to the war effort. Of these most important, insofar as it related to the territorial transportation system, was the construction of the Alcan Military Highway.

II

Stripped of its strategic character, the Alcan Military Highway can be seen as the last and only successful essay in a series of attempts that spanned half a century to provide the Yukon with an overland link with the outside. As early as 1897 Commissioner Herchmer of the North-West Mounted Police, in anticipation of a deluge of Canadian gold seekers over the so-called "Back Door Route" to the Klondike, had commissioned Inspector J.D. Moodie "to collect exhaustive information on the best road to take parties going into the Yukon via [the Edmonton-Pelly] route." Moodie was instructed to identify those sections "where a wagon trail can be made without expense," to report on water crossings that would require bridges or ferries, to take note of the availability of fuel, feed and hay, and to select sites that were suitable for the construction of supply depots. With four fellow officers, an Indian guide and a Métis, Moodie left Edmonton on 4 September 1897. His supply kit was meagre, consisting solely of 100 pounds of pemmican. The expedition was ordered to live off the land and to keep the pemmican "until the last resource." Moodie was scheduled to reach the Yukon that winter, at which time, Herchmer told him, the pemmican might be the only "means of taking your party into the Klondyke."¹

Both rations and schedule were soon to prove terribly unrealistic. The expedition did not reach Fort St. John until 1 November and another month elapsed before preparations for the next leg of the trip were in order. Beyond Fort St. John, Moodie encountered a series of unexpected obstacles. Winter travel made living off the land extremely difficult. A succession of unreliable guides and terrain that was arduous and largely unexplored slowed the party considerably. The trading posts upon which Moodie was dependent for provisions were habitually undersupplied with the result that the expedition was unable to replenish its stores. Caches, which advance parties had established at designated points along the route, were gone when the main party reached them, stolen by local natives or stampeders en route to the Klondike.²



Eleven months after setting out from Fort St. John, Moodie's spent and haggard party reached Fort Selkirk. The great stampede was almost over, leaving in its wake little need for an Edmonton-Pelly road to the Yukon. In his final report to Herchmer, Moodie wrote that "with regard to the usefulness of this route to the Yukon, I should say it would never be used in the face of the quick one via Skagway and the White Pass."³ It would take 50 years and the Alaska Highway itself to vindicate Moodie's opinion.

Undeterred by Moodie's conclusions and a declining Yukon economy, a second, more ambitious scheme was broached: to blaze a road between Edmonton and the territory. Once more the task of construction fell to the Mounted Police, and on 17 March 1905 Superintendent Charles Constantine, whose association with the Yukon dated back to 1894 and the halcyon days of Forty Mile, set out from Fort Saskatchewan with a party of 31 for the southeastern terminus of the proposed road, Fort St. John. Constantine's instructions were to build a 750-mile-long, 8-foot-wide wagon road, to corduroy those sections located in bog and marsh, to install necessary bridging and to construct roadhouses at 30-mile intervals. With only the most primitive of tools at its disposal, the party completed 94 miles of road during its first season and added 134 more, bringing the road to a point 20 miles west of Fort Graham, by the fall of 1906. In September 1907 the detachment reached cabin number 4 on the British Columbia-Yukon telegraph line, 377 miles from the base camp at Fort St. John. Work was not resumed in 1908 because negotiations with the government of British Columbia over financing that province's portion of the road broke down and as a consequence, the road, fittingly described by later writers as the "Road to Nowhere," was abandoned.⁴

Twenty years were to elapse before another scheme to link the northwest corner of the continent by road was to capture popular attention. This time the initiative shifted from Canada to Alaska where a territorial engineer from Fairbanks, Donald MacDonald, mounted a vigorous campaign to unite Alaska with the mainland. Unlike previous Canadian efforts to link the Yukon with the outside, which had generated little if any public interest, MacDonald was able to enlist the support of the International Highway Association and with the slogan "Seven million dollars purchased Alaska for the United States, seven million more will make Alaska one of the United States," win wide public acceptance for the project in Alaska and Washington state and the endorsement of a number of national associations in the United States. Although the Yukon did not figure directly in the scheme, certain residents in Dawson organized a chapter of the International Highway Association as a demonstration of their own particular interest in

the road. As well, the province of British Columbia, through which the major portion of the proposed road was to be located, showed a keen interest in the scheme.⁵

The project gained momentum when in April 1929 the Alaska legislature proposed that representatives from the United States and Canada be convened to study the question. The American initiative continued into 1930 when Congress authorized the president to appoint three "special commissioners to co-operate with representatives of the Dominion of Canada in a study regarding the construction of a highway to connect the northwestern part of the United States with British Columbia, Yukon Territory and Alaska." A Canadian commission was appointed the following year which included George Black, MP for the Yukon. In October the American commission met with its Canadian counterpart in Victoria where exploratory discussions on the technical and economic aspects of the proposed highway took place. Two years later the United States commission submitted its report to Congress. It concluded that the "highway is a feasible project and can be built at reasonable cost" and recommended that negotiations be undertaken to ascertain Canada's interest in proceeding with the scheme.⁶

A lack of interest on the part of the Canadian government is suggested by its failure to publish a separate report of the Canadian commission's findings. For George Black the entire experience must have been exasperating. His constituents spoke with practically one voice in support of the highway, advocating its construction as a make-work project. Except for the indomitable T. Dufferin Pattullo, who as premier of British Columbia had a vested interest in seeing the discussions bear fruit, Canadian support for the scheme was very limited.⁷

The general election of 1935 did not result in any immediate modification of the Canadian position. Mackenzie King's economic programme was, if anything, less ambitious than his predecessor's and the relief aspects emphasized by the highway's proponents failed to impress him. American pressure was not so easily thwarted, however, and in March 1936 the United States raised the issue again. King did not reply directly to the United States government, but submitted the highway proposal to the Department of National Defence. The department argued that the highway "would provide a strong military inducement to the United States to ignore our neutral rights in the event of war between that country and Japan" and strongly advised against Canada participating in a joint highway venture.⁸

Armed with the opinion of his military advisers, King travelled to Washington in March 1937 to discuss, among other things, the proposed highway. Ironically, both in prospect and retrospect,

Roosevelt emphasized the highway's potential military value "in the event of trouble with Japan." King conceded, somewhat misleadingly in view of advice tendered by the Department of National Defence, that "that was a matter which could be looked into," but refused to commit himself "as to the possibility of any construction."

For the moment Canadian neutrality had been successfully defended, but Roosevelt's persistence found an ally in Premier Pattullo who proved far more responsive to the needs of West-Coast defence and the Alaska highway than Ottawa. Pattullo's public pronouncements urging the American government to exert strong pressure on Ottawa greatly chagrined the prime minister who was extremely sensitive on the issue of Canadian autonomy. According to James Eayrs, Pattullo's actions had the effect of confirming the cabinet's determination "that nothing should be done." As for suggestions that the United States take full responsibility for funding the project, King replied that "grounds of public policy would not permit using the funds of a foreign Government to construct public works in Canada. It would be, as Lapointe phrased it, a matter of financial invasion, or as I termed it, financial penetration."⁹

In 1938 the United States chief of staff reported that "the military value of the proposed highway is so slight as to be negligible."¹⁰ Coincidentally, a Canadian interdepartmental committee submitted a report to the government which outlined a number of advantages to be gained from building the highway. These included opening up new territory for settlement; resource, tourist and recreational development; facilitation of air traffic, and unemployment relief. In the meantime, President Roosevelt, at the behest of Congress, had appointed a five-member commission *to cooperate and communicate directly with any any any similar agency which may be appointed in the Dominion of Canada in a study for the survey, location, and construction of a highway to connect the Pacific Northwest part of continental United States with British Columbia and the Yukon Territories [sic] in the Dominion of Canada and the Territory of Alaska.*

In a seeming reversal of its previous position, the Canadian government passed an order in council on 22 December 1938 appointing a five-member commission *to enquire into the engineering, economic, financial, and other aspects of the proposal to construct the said highway to Alaska and to meet for the purpose of discussion and exchange of information with the United States Commission.*

That the reversal was more apparent than real is suggested by the preamble to the order in council which mentioned the repeated representations from British Columbia and the United

States and was worded to suggest that the decision to appoint a Canadian commission was a concession to these pressures. Nevertheless, it can be inferred that the most obnoxious features of the highway proposal, that is, those aspects which might compromise Canadian neutrality and autonomy, had been removed. In the time-worn tradition of Canadian politics, a tradition that was raised to the level of a high art by Mackenzie King, the government appointed a commission, the sole purpose of which was to study the problem.

The Canadian commission held a preliminary meeting at Victoria in April 1939. This was followed by a series of public meetings, one of which was held in Whitehorse. A number of local representatives were heard, all but one registering support for the proposed highway. The sole dissenting voice was that of W.D. MacBride who read a prepared statement on behalf of Herbert Wheeler, the president of the White Pass and Yukon Route. MacBride argued that the cost of the proposed highway far exceeded any benefit that would accrue from its construction. He declared that the road would be superfluous, that the "Yukon is amply supplied with transportation facilities now." He suggested that the airplane was and would continue to be a far more effective tool in developing the territory than any highway.

While MacBride expressly disavowed any conflict of interest, it is obvious that the White Pass and Yukon Route considered the proposed road to be a serious threat to its own operation. Although the company was undoubtedly sincere in questioning the validity of the scheme – there was barely enough traffic to keep its own operation going – the company's opposition must be viewed in the light of the potential impact of another access route on its balance sheets. The real issue, as identified by the inhabitants of the territory, was cheap transportation and a suspicion prevailed, the apparent economic difficulties of the White Pass and Yukon Route notwithstanding, that the company was taking advantage of its monopoly and that an alternative form of transportation would be cheaper than the service provided by the White Pass and Yukon Route.

The commission's almost cursory forays into Whitehorse and Carcross marked the first and last time that an opportunity was provided for the territory to participate in the discussions. Thereafter, the commission concerned itself with the accumulation of specific data relating to possible routes, construction costs and financing. Paradoxically, in view of the highway's ultimate location, the request for a hearing from interests representing Edmonton was rejected on the grounds that the order in council creating the commission had specifically confined its consideration to routes through British Columbia. Throughout the 1930s, routes through

British Columbia were the only ones to receive serious consideration in Canada and United States. The Edmonton route, which the Canadian government had actively promoted at the turn of the century, fell into disfavour, largely because the initiative for the highway during this period came from the United States.

An aerial reconnaissance programme was undertaken in 1939 to investigate the three British Columbia routes then under discussion.¹¹ Each of them originated at Prince George although in the case of the "coastal" and "A" routes, Hazelton, 300 miles northwest of Prince George, was selected as the projected point for new construction to take advantage of the existing highway between them. The western or "coastal" route, as it was designated, ran through Hazelton and followed the Skeena River west to Kitwanga. From Kitwanga the route struck north, skirting the Nass, Bell-Irving and upper Iskut rivers to Telegraph Creek. From Telegraph Creek the route followed the telegraph line through Atlin, Tagish, Carcross and Whitehorse. At Whitehorse the route followed a westerly course to Kluane Lake via Champagne and Kluane, thence northwest to the headwaters of the Tanana River, linking up with the Richardson Highway at Big Delta in Alaska.

The "A" route, located east of the coastal route, followed the telegraph line out of Hazelton to the Klappan River. From the Klappan it ran north to the Stikine, followed the east bank of the Taya River to Gun Lake, crossed the Nakina and linked up with the telegraph line to Atlin. An alternate "A" route, running out of Fort St. James at Takla Lake, converged on the main route west of the upper Skeena River.

The "B" or Rocky Mountain trench route originated at Prince George, followed the Parsnip River to its confluence with the Finlay at Finlay Forks, and continued along the Finlay to Sifton Pass. From Sifton Pass it ran along the west bank of the Kachika, over the divide to the Liard and Frances rivers, and down the Pelly to Pelly Crossing. From Pelly Crossing it followed the Overland Trail to Dawson, linking up with the Richardson Highway from Glacier Creek.

The coastal route was found to be impractical on the basis of aerial reconnaissance. Although it furnished land access to towns along the coast and surpassed the other routes in terms of scenery – an important factor in assessing tourist potential – it failed to satisfy the conditions established for engineering feasibility and cost. River valleys were deep and passes through the mountains were correspondingly high while heavy precipitation made year-round operation questionable and portended excessive expenditures for maintenance.¹²

The commission recommended that field work be continued on route "A" during 1940 in order to complement the information already obtained on route "B."¹³ The commission submitted its final report in 1941. While the commission found that cost, engineering feasibility and tourist potential were not decisive factors, mineral potential, proximity to the Peace River agricultural belt and air routes favoured the "B" or Rocky Mountain Trench route.¹⁴

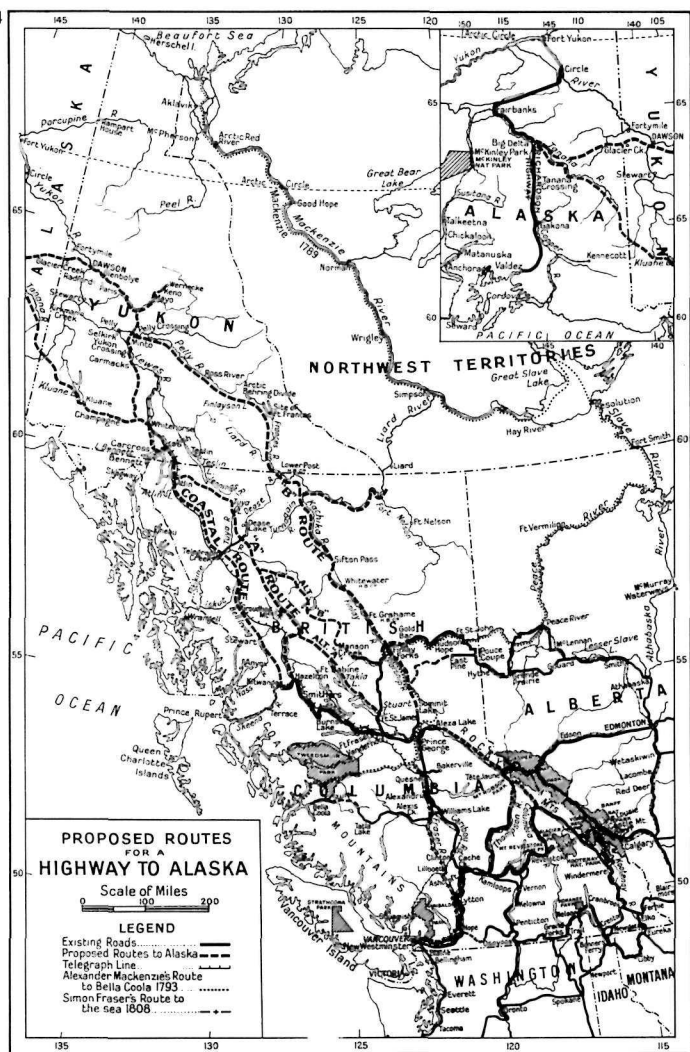
The coastal route, which had long been favoured by the United States, especially that portion following the air route into Alaska from Whitehorse, was completely bypassed by the Canadian commission's recommendations. Whitehorse, the transportation hub of the Yukon, lay some 200 miles due west of the proposed road: 13 years of American initiative had been crowned by a Canadian report which almost totally ignored the wishes of the United States. Whether the American government would have maintained its interest in the highway, given the Canadian preference for a road through the Rocky Mountain Trench, must remain a matter of conjecture for ultimately the fate of the highway proposal was not to be settled by the United States or Canada, but by Japan.

III

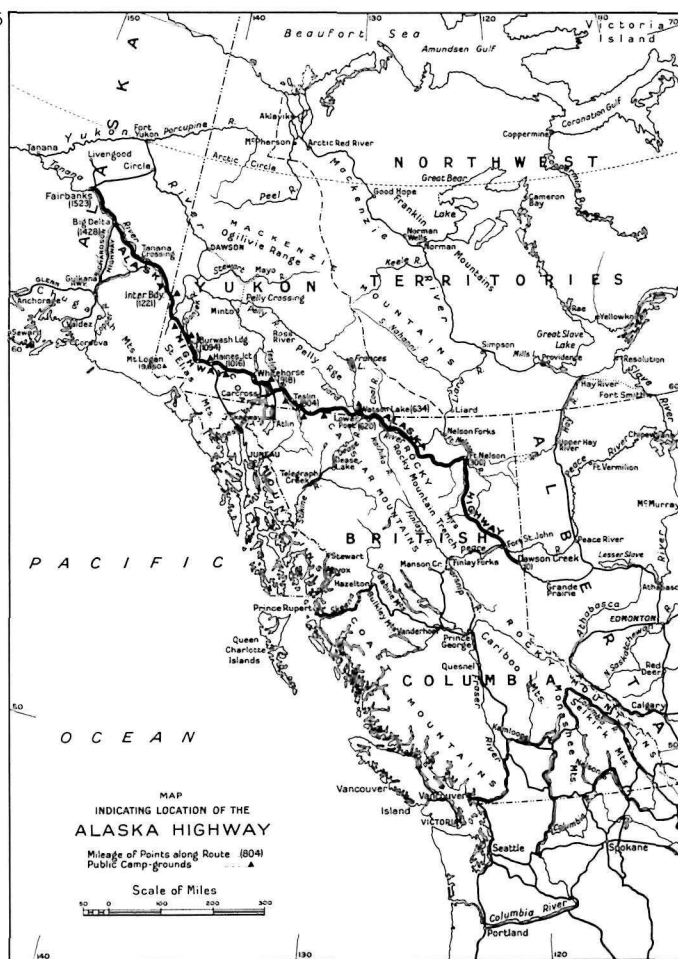
On 7 December 1941 Europe's second war of the century exploded into a global conflict. In what one American historian has described as an almost perfect application of the laws of war, Japan's attack on Pearl Harbor exposed the entire west coast of North America to enemy attack.¹⁵ The proposed highway to Alaska, which had languished through interminable bilateral discussions throughout the 1930s, assumed great urgency as Alaska's strategic importance, both for North American defence and materiel support for Russia, became manifest. The Alaska highway, which had failed of accomplishment in time of peace, became a reality in time of war. "Fear," Edward McCourt has written, "is a mighty stimulus to achievement."¹⁶

On 2 February 1942 the United States War Department ordered the immediate preparation of a survey and construction plan for a military road to Alaska. The Canadian government was informed of the plan on 13 February and approved it the same day, and on 14 February the United States government issued a directive to proceed with the project.¹⁷ A formal agreement was signed on 17 March 1942 outlining the respective obligations of the United States and Canada for implementing the plan. Under its terms the United States undertook to construct a military highway from Dawson Creek, British Columbia, to Fairbanks, Alaska, via Big Delta on the Richardson Highway. The American government

124



125



agreed to maintain the highway for the duration of the war and for a period of six months following the cessation of hostilities, after which that portion of the highway situated in Canada was to become the property of Canada. For its part, the Canadian government agreed to furnish necessary rights of way and local construction materials, and to waive import duties, licence fees and income tax on American companies and citizens.¹⁸

The existence of a series of airfields between Edmonton and Whitehorse proved to be a decisive factor in determining the location of the proposed highway. Known as the Northwest Staging Route, this series of airfields satisfied the strategic requirement for an inland route to secure the highway from enemy attack and had the added advantage of being tributary to Edmonton so that supplies for the highway could be moved over existing land and air routes should the West Coast ever be closed to shipping. It should not be assumed that the staging route was assigned an entirely auxiliary role, however, for the highway was intended not only to meet the "need for a year round truck route for the movement of freight to Alaska," but also to provide ground access to the staging route airports in order to facilitate the transport of supplies to Russia.¹⁹

Conceived in 1939 as a means of facilitating civilian air travel between Edmonton and Whitehorse, the Northwest Staging Route was the name given to a series of airports built at Grande Prairie, Alberta, Forts St. John and Nelson in British Columbia, and Watson Lake and Whitehorse in the Yukon. A complementary feature of the Northwest Staging Route was the construction of a number of emergency landing fields "in accordance with standard airway practice" at intermediate points along the way. Construction began in 1940 and by September 1941 the route was opened to aircraft flying by visual flight rules. All-weather flying was begun in December following the installation of radio ranges.²⁰

While construction of the Northwest Staging Route occurred coincidentally with the first two years of the war, it was not until the United States became a belligerent that the air route's original commercial character was altered. The American declaration of war and the decision to proceed with the highway forced a reconsideration of the non-military use for which the route had been designed. Beginning in 1942 the principal airfields were enlarged, navigation facilities were augmented and hangars, workshops, refueling systems and airport lighting were added. Living accommodation was expanded and power and water services were increased. All this was done over a period of 18 months and completed in July 1943.²¹

Locating the highway was no easy matter since virtually no one had any firsthand knowledge of the terrain to be traversed.²² For this reason much of the actual locating of the right of way was left to the discretion of surveyors in the field.²³ Where the topography of a specific region suggested that a certain airfield could best be reached by a branch road instead of the main highway, such a deviation was permitted. As one observer has aptly noted, the highway "follows the line of least resistance." This was the result of a construction plan that demanded "an alignment that would ensure completion of the road as a practical military highway in the minimum possible time employing the maximum forces and equipment."²⁴

Under a phased construction plan conceived by the War Department, the Alcan Military Highway was to be built in two stages. The first stage called for the construction of a pioneer or tote road to be built by the United States Army Corps of Engineers, the second for a finished gravel highway to be built by civilian contractors working under the authority of the United States Public Roads Administration. Original specifications called for a permanent highway with a 36-foot grade, the middle 20 feet to be surfaced with crushed rock or gravel. This was subsequently modified to a grade of 26 feet west of Fort St. John.²⁵

Construction began in March 1942. In all about eleven thousand military personnel divided into seven regiments were assigned to the project. To expedite construction, the proposed road was divided into six sectors: Dawson Creek to Fort Nelson, Fort Nelson to Lower Post, Lower Post to Teslin, Teslin to Whitehorse, Whitehorse to the international boundary and the international boundary to Fairbanks. This enabled work to proceed simultaneously on each sector. Within each sector six construction crews were deployed, each crew building approximately 20 miles of road, then leapfrogging to the head of construction.²⁶

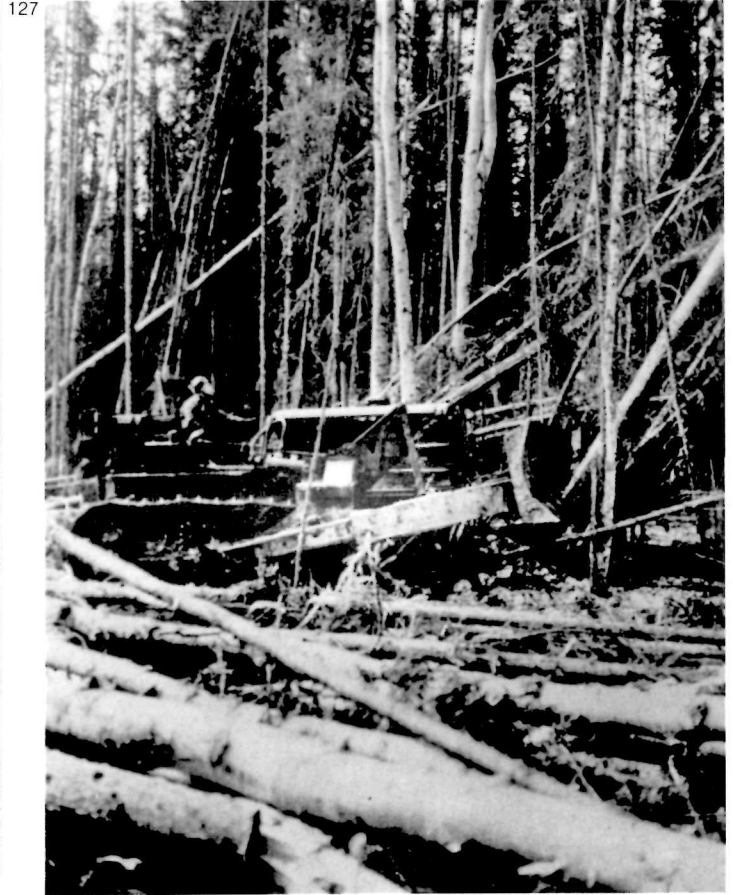
Despite the variety of topographical features traversed by the highway, a basic construction technique was developed that combined the virtues of flexibility and common application. Each stage in the construction process was designed so that it proceeded in descending priority in order "to keep the lead tractors moving ahead as fast as possible." The right of way was first marked by locating parties. Advance tractors then moved in and cleared a swatch 50 to 100 feet wide. They were followed by bulldozers that levelled the right of way and did rough grading. The bulldozers were followed in turn by ditching and culvert crews and finally by finished grading crews.²⁷

In its effort to maintain a rate of construction consistent with the urgency attached to the project, the army was constantly thwarted by river and creek crossings located on the right of way.

126 A U.S. Army engineer reconnaissance party surveys the ground for a suitable right of way for the Alaska Highway.
(Public Archives of Canada.)



127 A bulldozer clears the right of way.
(Public Archives of Canada.)



While many such breaks in the highway system could be forded, at least for construction purposes, all required some form of bridging sooner or later since the road functioned as its own supply line.

The slow pace of bridge building – bridge crews generally trailed far behind the other construction teams – was partially offset by the use of pontoons. Lashed together, floored with planking and equipped with outboard motors, the pontoons could be converted into serviceable ferries that permitted the transfer of men and equipment from one side of a river or creek to the other. With the construction of a landing slip, a portable bridge could be fashioned by connecting a series of pontoons, covering the surface with timber and anchoring each end to a deadman. The ferries could then be dismantled and sent ahead to the next crossing.²⁸

All traffic was moved over these pontoon bridges until bridge-building teams replaced them with more permanent structures. Instead of adopting the conventional but time-consuming practice of sinking piles for supports, cribs were used. While not as permanent as the pile-type support, cribs, which were open-topped log boxes filled with rocks, could be quickly constructed. With a steel sheet cut from empty fuel drums to protect them from ice damage, the cribs were permanent enough to satisfy the highway's immediate military objective.²⁹

Muskeg and permafrost also caused a number of delays, first because they required special treatment and second because the army dealt with permafrost during the initial stages of construction as though it were the same phenomenon as muskeg.³⁰ Whereas muskeg removal was a necessary preliminary to the creation of a stable road surface, stripping the surface material or muck that covered permafrost had the opposite effect since it exposed a once stable subsurface to the melting action of adjacent surface temperatures and the sun. It was only after a period of trial and error and by discussing the problem with experienced local road contractors that the army adopted a method that was similar to that employed by territorial road builders during the first decade of the century. This procedure involved a minimum disturbance of permanently frozen ground, the recovering of stripped sections to inhibit melting and the adding of brush to increase insulation.³¹

The two-phase construction schedule established in Washington quickly broke down under the massive and constant flow of men and construction equipment over the completed portions of the pioneer road with the result that the road rapidly deteriorated.³² In retrospect it seems apparent that the planners failed to appreciate the intensive use to which the road would be

put during the early stages of construction. As a consequence, the two-phase construction programme was abandoned in early August 1942 and the Public Roads Administration, which had been in Whitehorse since mid-May letting contracts to civilian road builders for the final phase of the work, was called in.³³

Of the many problems associated with the building of the Alcan Military Highway, none was greater nor more persistent than supply.³⁴ Like the gold rush of 1897–98, the Alcan project placed an enormous strain on the northern transportation system. Had conditions existed for a substantial degree of local participation in the project, much of the pressure that was brought to bear on the region's four supply routes – the Northern Alberta Railway, the White Pass and Yukon Route railway, a road from the port of Valdez, Alaska, and the Alaska Railroad – would have been relieved.³⁵ But local participation was necessarily slight and the army and private contractors were almost entirely dependent on outside sources for manpower, material and equipment. When it is remembered that the prewar impetus for the highway had sprung from a widely held notion that those transportation facilities supplying the region were inadequate, it is hardly surprising that these same facilities, none of which had been designed for sustained, intensive use, proved to be deficient under conditions of massive demand created by Alcan.

Geography and the logistics of transportation threw the principal burden of supply onto the White Pass and Yukon Route railway. The railway, with its terminus at Whitehorse, midway between Dawson Creek and Fairbanks, gave access to the highway at four points instead of two and greatly facilitated construction.³⁶ As a consequence, the White Pass and Yukon Route railway became the project's main supply line and Whitehorse its principal distributing point.

Whitehorse's de facto emergence as the operational centre of the Alcan project – an emergence that was directly attributable to the White Pass and Yukon Route railway – was given formal recognition by the establishment of the Northwest Service Command at Whitehorse on 4 September 1942. Created by general order of the United States War Department, the Northwest Service Command became the co-ordinating authority for all activities of the United States Army in Alberta, British Columbia, the Northwest Territories, the Yukon and Alaska.³⁷

One of the first tasks undertaken by the Northwest Service Command was to increase the supply capacity of the railway. Although the White Pass and Yukon Route had made every effort to satisfy military requirements, first by running one train a day, then by hauling five hundred tons daily, the task had proved too large. When in August 1942 the army asked the company to handle two

128 A construction crew lays corduroy over muskeg. (Public Archives of Canada.)

129 A river crossing effected by laying planks over the ice on the Peace River. (Public Archives of Canada.)



129



130 Sternwheelers transported supplies needed to build the Alaska Highway and the Fairbanks pipeline. This barge at Dawson is loaded with U.S. Army trucks. (*Yukon Archives.*)



thousand tons a day, C.J. Rodgers, the president of the White Pass and Yukon Route, realized that wartime restrictions on labour and rolling stock made compliance impossible and suggested that the army assume the operation of the railway.³⁸ This timely suggestion was accepted by the Northwest Service Command and on 1 October 1942 the railway was leased for \$27,708.33 a month. The railway was subsequently assigned to the 770th Railway Operating Battalion and a large railhead was built at MacCrea, eight miles outside of Whitehorse.³⁹

The highway was not the only defence project in the Canadian North to benefit from the increased supply capacity of the railroad. Cement for airport runways and steel girders for hangers were shipped over the railway for the Northwest Staging Route as were pipeline sections and cracking retorts for the Canol project: a massive scheme designed to tap the oil at Norman Wells in the Northwest Territories, pipe it to Whitehorse and refine it there.⁴⁰ The most ambitious, if not the most expensive, of the three major defence projects undertaken in the Canadian Northwest during World War II, the Canol project was designed to supply the oil requirements of the armed forces in the Canadian North and Alaska. Begun in June 1942 under the terms of an agreement similar to the one dealing with the Alcan Military Highway and completed two years later, the project involved the laying of a four-inch crude oil pipeline between Norman Wells and Whitehorse, the construction of two ancillary pipelines from Whitehorse to Skagway and Fairbanks, the erection of an oil refinery at Whitehorse and the construction of a road running parallel to the pipeline from Norman Wells to mile 836 on the Alcan Military Highway.⁴¹

On 20 November 1942 the eastern and western sections of the Alcan Military Highway were joined at Soldiers' Summit, 151 miles northwest of Whitehorse. On 21 November the road was officially opened. Excepting a 150-mile section between Kluane Lake and the Alaska boundary which was only passable when the ground was frozen, the 1,523-mile pioneer road was completed in just over eight months and opened to through military traffic.⁴²

Except for two troop companies that were not relieved until July 1943, all military personnel directly involved in the construction of the highway were withdrawn before the beginning of the 1943 construction season. Completing the road to final specifications subsequently proceeded under the direction of the Public Roads Administration which employed some 81 private contractors and 14,000 civilians over the following two years. At the request of the United States government, the highway was renamed the Alaska Highway on 19 July 1943.⁴³

The Public Roads Administration was left with a task that was almost as large as the construction of the pioneer road itself. Built in haste, much of the pioneer road was substandard. Drainage was generally inadequate, many sections of the road having been poorly located or built only slightly above ground-water level. Natural insulation protecting permafrost had been disturbed. Excessive curvatures and gradients were not uncommon. The southern end of the highway was located through a noncohesive, unstable soil region known as the Bear Paw silts. As a consequence, a substantial amount of relocation and reconstruction was necessary. All the corduroy put down during 1942 was torn out and replaced, and the highway was resurfaced in its entirety. The log bridges constructed by the army were supplanted by steel structures. The Kluane Lake-Alaska boundary section was rebuilt; freight for Fairbanks being shipped downriver from Whitehorse to Circle, Alaska, for transshipment over the Steese highway to Fairbanks in 1943.⁴⁴ In addition, a road was built from the all-weather port of Haines, Alaska, to Johnsons Crossing, mile 1,016 on the main highway.

Maintaining the remote fifteen-hundred-mile highway was a major task. Supplies and accommodation had to be provided for maintenance crews on the more isolated sections of the road and spare parts for machinery and equipment had to be stocked for any contingency. Summer maintenance was relatively simple, consisting for the most part of grading and sprinkling the gravel surface.⁴⁵ Winter maintenance, on the other hand, was more complex, especially on sections of the highway that were poorly located and susceptible to winter icing. Permafrost springs and glacial streams adjacent to the highway were particularly troublesome in this regard; the former because they "bled" during the coldest weather, forming massive ice deposits on the highway surface, the latter because they froze in such a way as to sometimes alter course and damage the highway, bridges and bridge approaches.⁴⁶ Light precipitation cut snow removal to a minimum and the snow furnished an excellent road surface, superior in fact to gravel itself, but combined with extreme cold, the light precipitation permitted a high degree of frost penetration and contributed to the high cost of spring maintenance.⁴⁷

IV

The building of the Alaska Highway was an anomaly in the history of transportation development in the Yukon. Although more than one-third of the highway was located within its boundaries, the Yukon played no part in the decision to build the highway and only a negligible role in its construction. To be sure, a highway to the outside had long been hoped for, but the Alaska Highway can

not in any way be described as the fulfillment of that aspiration. The Alaska Highway was built to satisfy a limited military objective: it was not a product of local economic conditions nor was it built to provide the Yukon with an alternative outside access route. The Yukon was incidental to its construction and as a consequence little consideration was given to what immediate, short-term impact the highway was to have on the territory. Nowhere was this more clearly demonstrated than in the wartime operation of the White Pass and Yukon Route railway.

For almost two generations the railway had been the Yukon's umbilical cord: a life-sustaining artery that was as vital to the territory as mineral production itself. For this reason the decision to build the highway, while greeted with patriotic fervour by most of the local residents, was accompanied by an apprehension that the movement of territorial supplies over the railway might be adversely affected by military requirements. Unfortunately, this early apprehension was not misplaced. On 3 June 1942 George Black, MP for the Yukon, rose in the House of Commons to protest American objections "to anything being brought up by steamers on the west coast or by rail, mining machinery and even food for the inhabitants of that part of the country." In an attempt to resolve the problem, G.A. Jeckell, the territorial controller, was appointed local agent to the wartime superintendent of transportation, "with power to deal with that matter on the spot."⁴⁸

While Jeckell's appointment afforded some measure of satisfaction, the situation deteriorated after the army leased the railway in October 1942. According to Jeckell, the takeover resulted in an immediate decay of local service. "Very little freight was handled" during the winter of 1942-43, Jeckell wrote, "and large quantities of perishable freight [were] not moved and allowed to freeze at Skagway." In response to local criticism, C.K. LeCapelain, a Canadian liaison officer, denied that "the civilian population of the Yukon was [being] discriminated against." While admitting that there was inexperience, incompetence and irresponsibility in the military's operation of the railway, LeCapelain wrote that

*the trouble really starts back in Edmonton, Prince Rupert, Vancouver and Seattle where various U.S. agencies, mostly under the control of the Divisional Engineers . . . start to pour thousands of tons more freight into Skagway than the port or railway can handle.*⁴⁹

The question of which should take precedence, military supply or local supply, was never resolved to the complete satisfaction of the inhabitants of the territory and perhaps it is not too trite to suggest that it could not be. The supply question did not become a crisis, however, because it was relatively short-lived. By late

1943 demand had levelled off and the army had become a great deal more efficient in operating the railway.

If the building of the Alaska Highway were to be told from a Yukon perspective instead of the conventional military perspective, a much different picture would emerge. An influx of thousands of troops which more than doubled the territory's population did not occur without disruption. This theme and the corollary theme of friction between the military and local residents have been all but obscured in the literature on the highway. In its haste to complete the highway, the United States Army took little heed of Yukon sensitivities and tended to regard the feelings of many inhabitants as an obstacle to its main task. Herbert Wheeler expressed the attitude of many Yukoners when he wrote that the army "treated our people as if we were inferior beings and generally made themselves obnoxious."⁵⁰

V

Approximately 342 million dollars were spent on transportation and related projects in the Canadian Northwest during World War II. Of this total, a disproportionate share was spent in the Yukon, but this expenditure, massive as it was, left little more than a dubious legacy. The Canol complex, built at a cost of \$133,111,000, was abandoned in 1945 although a portion of the road was later reopened. The Northwest Staging Route, designed for prewar flying conditions, was rendered in large part obsolete by the wartime advance in airplane and communications technology.⁵¹ Even the Alaska Highway, the most important of these three major projects, failed to generate the benefits so long anticipated from an alternate access route to the northwest part of the continent.

The highway's impact on traditional Yukon trading patterns could not be tested during the war. Until June 1943 no commercial or civilian traffic was allowed on the facility, after which all non-military carriers were required to make application to the newly created Joint Traffic Control Board for permission to use the road. The board screened each application and issued permits only to those whom it deemed to have "legitimate" business on the highway. All other types of traffic were excluded so that military transport would not be disrupted and because of the absence of travel facilities such as service stations, restaurants and overnight accommodation. In November 1943 a scheduled bus service was established between Dawson Creek and Whitehorse under the supervision of the Joint Traffic Control Board. Until the White Pass and Yukon Route organized a highway division in October 1945, no commercial carriers operated on the Alaska Highway.⁵²

On 1 April 1946 that portion of the Alaska Highway located on Canadian soil was ceded to Canada by the United States government in accordance with the joint agreement of 17 March 1942.⁵³ Because of the highway's remoteness and the demand for manpower and equipment in other economic sectors during the immediate postwar period, the highway was not placed under civilian control. Instead, responsibility for its administration, improvement and maintenance was assigned to the Whitehorse-based Northwest Highway System of the Canadian army.⁵⁴ With the exception of pleasure travel which remained restricted until February 1948, the highway was then opened to all classes of traffic.⁵⁵

The opening of the Alaska Highway was viewed in Seattle and Vancouver as a challenge to the traditional monopoly theretofore enjoyed by West-Coast ports over Yukon trade and transportation.⁵⁶ In Edmonton, on the other hand, which for half a century had promoted itself as a gateway to the Yukon, the opening of the highway was greeted with great anticipation. This anticipation was short-lived. Although the highway was instrumental in bringing to an end the exclusive monopoly of Seattle, Vancouver and the White Pass and Yukon Route railway, it never attracted enough traffic to threaten their continued commercial supremacy.

Several factors operated against the Alaska Highway ever becoming a major competitive force in Yukon transportation. Even as the highway was being built, the United States Army prepared contingency plans for a railroad through the Rocky Mountain Trench in recognition of the highway's inappropriateness as a transportation facility. Because the highway was conceived as a military supply route, no consideration was given to its postwar commercial potential. The highway's peacetime usefulness was also diminished because the Yukon's principal producing regions, the Dawson and Mayo districts, were bypassed. This precluded any significant degree of local traffic generation and underlined the dilemma of transforming a military supply road into a useful commercial highway. As a consultant firm concluded in 1968, "the Yukon obtained [in the Alaska Highway] a road link earlier than would otherwise have been the case but was left with . . . a tortuous road in the wrong place."⁵⁷

More particularly, the failure of the Alaska Highway to attract a significant share of Yukon traffic and to mount an effective challenge against the White Pass and Yukon Route railway was attributable to the high cost of highway transport. At a minimum user-cost of ten cents per ton-mile (1948), just barely enough to ensure an adequate return to highway carriers, the Bureau of Transportation Economics reported that the highway could not compete with the railway. This shifted the burden of competition

to commodity wholesale prices. Here again the highway was at a distinct disadvantage. Although Edmonton wholesale prices were slightly lower than Vancouver prices on class-rate freight shipped over the Canadian Pacific Railway from points east of Sudbury, the small amount of traffic moving on class rates – "probably not more than 15%" – was not enough to offset the high cost of highway transport or Vancouver's wholesale price advantage on other commodities.⁵⁸

Like other frontier regions, the Yukon has traditionally been "next year country." Excepting the Klondike gold rush, which literally transposed "next year" into the present, the territory has always looked to the future for better times as though there were some inexorable edict of history that progress was related to the passage of time. So it was with the Alaska Highway. Its competitive limitations and burdensome maintenance and improvement costs were borne, partly because political expediency precluded following the Canol precedent and abandoning the highway, and partly because it was hoped that the highway would develop into a successful commercial artery.⁵⁹ But time has not solved the problems of the Alaska Highway. Despite postwar economic expansion and the construction of the Hart Highway by the province of British Columbia, a feeder road which gives access to the Alaska Highway from Prince George via Dawson Creek, the Alaska Highway's importance as an alternative route to the Yukon has in fact diminished. A comparison of 1947 and 1964 commodity flows into and out of the Yukon shows that while total highway freight tonnage increased from 26,656 tons in 1947 to 38,932 tons in 1964, the highway's share of Yukon traffic declined sharply over the same period, from 38.1 per cent in 1947 to 22 per cent in 1964. At the same time, the White Pass and Yukon Route railway, the highway's principal competitor, increased its share from 58.5 per cent in 1947 to 76 per cent in 1964. According to the Stanford Research Institute, which prepared a report on the Alaska Highway in 1964, these figures reflect a long-term trend.⁶⁰

Although the Alaska Highway has failed to meet the expectations that were anticipated of an alternate access route to the Yukon, it has played and continues to play an important role in the territorial transportation system. This is especially true in the southeastern section of the territory around Watson Lake where the highway provides a vital link to the outside supply sources and markets. However, one area of transportation where the highway has never made much of an impact and shows little indication of doing so is in the export of minerals. It is this failure which explains in large measure the significant imbalance that exists between the highway and the railroad. The highway has done much

better in the movement of high-revenue commodities such as meat and produce, electrical appliances, machine parts and furniture. Petroleum constitutes another source of traffic, accounting for almost one-third of the highway's Yukon freight although here again, little petroleum moves west of Watson Lake.⁶¹

Except for local traffic use in the immediate vicinities of Whitehorse and Watson Lake, the Alaska Highway has probably made its greatest impact on tourism. Despite its gravel surface, an oppressive dust problem and frequent stretches of monotonous terrain on the heavily travelled eastern section, the highway provides a less costly form of tourist travel than air transport or the West-Coast ferry system. As a consequence, the highway is the main gateway for the thousands of tourists who visit the territory annually. Since the tourist industry is the second largest and one of the fastest growing revenue-producing industries in the Yukon, it seems clear that both tourism and the highway will play significant roles in the future.⁶²

Full exploitation of the territory's tourist potential depends in large part, however, on eliminating the highway dust problem which makes travel not only unpleasant but potentially hazardous. A growing segment of opinion in the Yukon, alarmed at the unfavourable impression created by the highway, is agitating for an asphalt surface.⁶³ Although a 20-mile section of the highway in the Whitehorse area has been paved, there appears to be little likelihood that the road will be paved in the foreseeable future. The experience of the Alaska Road Commission indicates that maintenance costs tend to rise for paved roads instead of decreasing.⁶⁴ At an estimated improvement cost of \$167,651,000, paving would far exceed any possible benefit and, as the Stanford Research Institute suggested, it might well have an adverse effect on the highway's freight-carrying function through the imposition of load limits.⁶⁵

For all of its shortcomings as a transportation facility, the Alaska Highway has had a major influence in shaping the course of territorial development since 1945. The rise of Whitehorse to intermediate metropolitan status, the transfer of the territorial capital and an extended economic frontier have stemmed largely from the existence of the highway. In a more direct sense, the administration and maintenance of the highway have constituted an important local industry, employing a stable labour force and bringing a welcome payroll independent of mining.⁶⁶

VI

The stampede of 1897–98 and the construction of the Alaska Highway, the two most significant events in the history of the territory, have invited comparison as to which was the more impor-

tant. In 1965 the Department of Northern Affairs and National Resources expressed the opinion that the Alaska Highway "has probably done more to advance the development of the Yukon than any other single endeavour, including the Gold Rush." To be sure, the Alaska Highway has been an important factor in the postwar development of the territory. The publicity given the highway in popular periodicals as well as business and professional journals was instrumental in interesting many in the Yukon's resource potential and the highway itself fostered prospecting and mineral development in areas that were tributary to it. For example, the Cassiar Asbestos mines in northern British Columbia, the production from which is shipped to market through the Yukon, owe their discovery and exploitation to the highway.⁶⁷ In terms of transportation, however, the White Pass and Yukon Route railway, a legacy of the Klondike gold rush, has far outstripped in importance the Alaska Highway and given the importance of transportation in territorial development, it seems obvious that the gold rush has played a greater role in advancing territorial development than the highway. The highway itself, moreover, owes its existence in part to some long-range consequences of the great stampede. The Northwest Staging Route, a decisive consideration in the decision to build the highway, would never have been conceived, let alone built, had it not been for the gold rush which attracted hundreds of people who remained in the territory after 1900.

The Dawning of a New Era

I
Apart from such strategically inspired transportation projects as the Alaska Highway and Canol, very little in the way of local transportation development took place between 1939 and 1945. Road work, with a few minor exceptions, was confined to maintenance and improvement. In 1941 the Whitehorse airport was completely rebuilt and transformed into a "1st class" facility as part of the Northwest Staging Route, but Whitehorse's emergence as a major air centre was largely the result of the American military presence, a factor wholly unrelated to local economic conditions. The aerial division of the White Pass and Yukon Route, British Yukon Aviation, was sold to Canadian Pacific Airways in September 1941, the sale marking an important departure from the White Pass and Yukon Route's policy of involving itself in all aspects of Yukon transportation.¹

The territorial mining industry escaped the full economic impact of the war until 1943. Indeed, mineral production for each year between 1937 and 1942 exceeded in value that of any year after 1917. Although the Yukon Consolidated Gold Corporation encountered "some difficulty in obtaining necessary operating parts and material" in 1941, the small production decline recorded for that year was largely attributable to a labour strike and the driest season on record. By 1943, however, the drain on the labour pool caused by enlistments and the absorption of men into wartime construction projects had reached serious proportions. According to the president of the Yukon Consolidated Gold Corporation, "labour available for 1943 [was] approximately 30% of the amount required for full-scale operations." As a consequence, gold production fell abruptly, from 83,246 fine ounces in 1942 to 41,160 fine ounces, 23,818 fine ounces and 31,721 fine ounces between 1943 and 1945 respectively.²

Not too surprisingly, this decline had no discernible impact on the territorial transportation system. The intensive utilization of existing transportation facilities by the military was a mitigating factor, as was the reorganization of the Yukon Consolidated Gold Corporation in the early 1930s which had created a mature regional economy based on placer mining. This economy was not dependent on new gold discoveries but on the reworking of known reserves with more efficient procedures. Local transportation needs such as roads were already in existence. The remaining transportation requirement, access to Whitehorse, was furnished by the British Yukon Navigation Company in summer and by air during the closed season of navigation. Unlike the Mayo district, where transportation was directly dependent on produc-

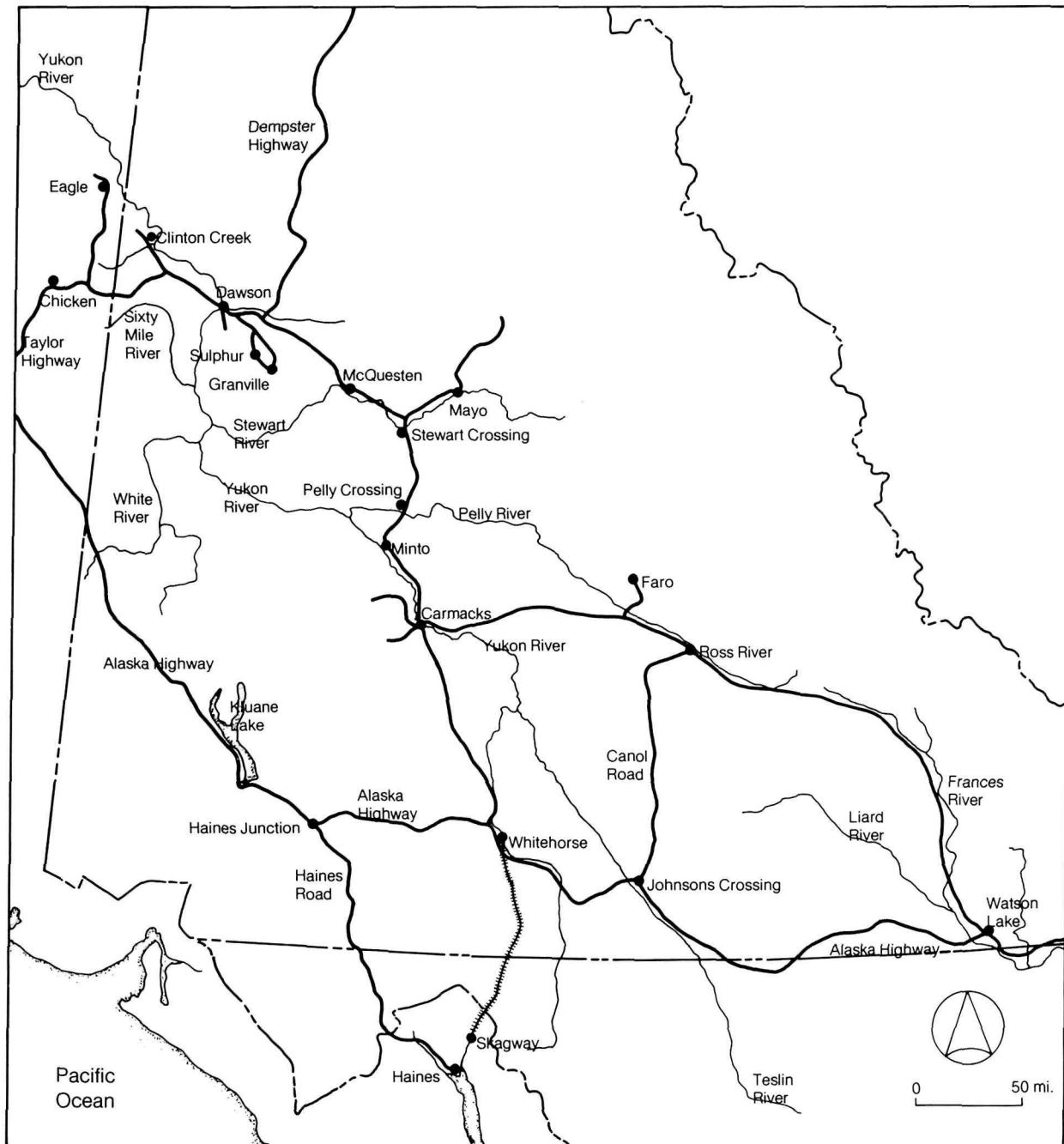
tion because of lode mining, the transportation facilities serving Dawson from Whitehorse were dependent on the market for consumer goods. Since the population of the Dawson area remained relatively constant throughout the war, this service was not disrupted.³

Of far greater import to the territorial transportation system was the suspension of operations by Treadwell Yukon in November 1941. The collapse of the silver-lead industry brought on by the depletion of known ore reserves dealt what was tantamount to a terminal blow to river transport which for 20 years had been sustained by Mayo district ore shipments. Between 1939 and 1946, the only years for which tonnage statistics covering the period are available, the total freight tonnage handled by the British Yukon Navigation Company in Canada declined by almost 50 per cent as a result of the fall in silver-lead production.⁴

II
In the immediate postwar period a lively debate took place over the future course of Yukon transportation development. George Black, in a speech before the House of Commons, declared that the "Yukon's greatest need today is for roads. Without roads there can be no advance. In some districts . . . development is at a standstill for lack of roads." The federal government, on the other hand, no doubt a trifle wary at the prospect of another Alaska Highway, regarded road construction coolly and showed a strong inclination toward aviation improvements.⁵

Local clamour focused specifically on the demand for an all-weather road between Whitehorse, Mayo and Dawson. The resumption of large-scale silver-lead mining in 1946 after an hiatus of four years lent this demand a degree of urgency and resulted in a request from the Keno Hill Mining Company, Treadwell Yukon's successor, for the immediate construction of the Whitehorse-Mayo section of the proposed Whitehorse-Mayo-Dawson road. With national priorities geared to the provision of housing for returned servicemen and the conversion of industry to a peacetime footing, the Whitehorse-Mayo road found little support in Ottawa and the request was shelved by the Department of Mines and Resources.⁶

The dilemma facing the silver-lead industry approached crisis proportions in 1947 when a substantial portion of the year's production failed to reach market for want of transportation. The failure disrupted plans to expand the Keno Hill Mining Company's operation and helped to underline the fundamental inadequacies of river transport. So long as the industry remained dependent on water transport, the vintage complaint (1929) that output could be "materially increased, but when the White Pass can only handle a



certain tonnage each year, there is no advantage in increasing output beyond that figure" would remain. The existing transportation system was also a major factor in the high operating costs incurred by the industry because of primitive handling facilities at transshipment points, the number of transshipments required and the seasonal nature of navigation. As well, the reduction in Stewart River traffic that followed the closing of the Treadwell mines in 1941 had allowed the main navigation channel to fill with sediment with the result that postwar transport on the Stewart was adversely affected.⁷

The 1947 crisis forced a reconsideration of the Department of Mines and Resources's territorial roads policy and acted as the catalyst for the Whitehorse-Mayo road. In January 1948 the department gave its approval to an all-weather truck road between the two centres. The 246-mile highway was completed in October 1950 and spelled the end of navigation on the Stewart River. Although it required a large initial investment and involved higher direct costs, the highway more than paid for itself by increasing the shipping season from four and one-half to ten months. All-season ore transport was not obtained until the early 1960s when steel bridges replaced ferries and ice bridges over the main river crossings.⁸

The extension of the shipping season had an immediate impact on the silver-lead industry and illustrated an interesting paradox: that cheap transportation, such as that provided by the sternwheeler, did not necessarily constitute the most economical form of transportation over the long run. Ore production for 1950 more than doubled that of 1949 and doubled again in 1953, an increase in volume that was in part attributable to the highway's construction and which more than compensated for the initial high cost of road transport.⁹ Road transport was instrumental in reducing the indirect costs of production, moreover, by releasing large amounts of capital previously tied up in inventories. This, combined with the elimination of the traditional holdover period associated with seasonal transportation wherein ore mined in one year did not realize a return until the year following, enhanced the industry's prospects and facilitated the refinancing of the Keno Hill Mining Company and its reorganization as United Keno Hill Mines in 1948.¹⁰ Given the particular nature of the silver-lead market, the elimination of the holdover period was a great boon. By extracting and marketing in the same year, producers were placed in a more advantageous market position and were able to avoid a repetition of the 1949 experience, when the industry lost some \$130,000 on its 1948 production as a direct result of a decline in silver-lead prices.¹¹

Ironically, the federal government acquired the British Yukon Navigation Company's Marsh Lake dam, rebuilt it at a cost of \$125,000, and agreed to operate and maintain it at the very time (1948) that its reformulated road programme was in the process of rendering water transport obsolete. In 1949, in an attempt to reduce operating costs, the British Yukon Navigation Company installed a coal-fueled boiler system in the SS *Whitehorse*, but the "adaption in grates was not the most efficient possible" and the steamer was converted back to a wood burner. By 1950 the company's sternwheeler operation had been reduced to one trip every ten days to Dawson, occasional downriver runs to Alaska and tourist excursions on Tagish Lake.¹²

III

When the Overland Trail fell into disuse after 1937 Dawson was deprived of its only overland connection with an all-weather transportation centre. The location of the Alaska Highway and the federal government's postwar roads policy added to a growing sense of isolation evident in the community and served to focus attention on the need for improved communication. This need was given a strong impetus by the realization that overland transport was becoming an increasingly important factor in territorial transportation.

Failure by the Department of Mines and Resources to counsel a Dawson-Whitehorse road was partially ameliorated by the possibility of linking Dawson with the Taylor Highway in Alaska. Construction of this highway between Tok Junction on the Alaska Highway and Eagle, Alaska, began shortly after the war. By 1948 the road had been completed as far as Chicken, Alaska, 20-some miles from Poker Creek, the Canadian terminus of the Sixty Mile road which ran west of Dawson. As the special commissioner of the Northwest Highway System observed, "it appears that a little more construction and some betterment on the Alaska side of the border could result in Dawson City having an all-year-round access to the Alaska Highway at Tok."¹³

Access to the Alaska Highway by way of Chicken and a corollary scheme to supply the Dawson area from the port of Valdez, Alaska, met stiff opposition from the White Pass and Yukon Route which saw in the proposed Sixty Mile road extension and the opening up of the port of Valdez a threat to its monopoly on transportation to and from the Dawson region. More importantly, the scheme presented a challenge to Whitehorse's traditional function as the territory's supply centre and distributing point. Despite strong support for the scheme in areas adjacent to Dawson, the Sixty Mile road extension, which entailed very little in the way of new construction, was not completed until 1951. In the meantime,

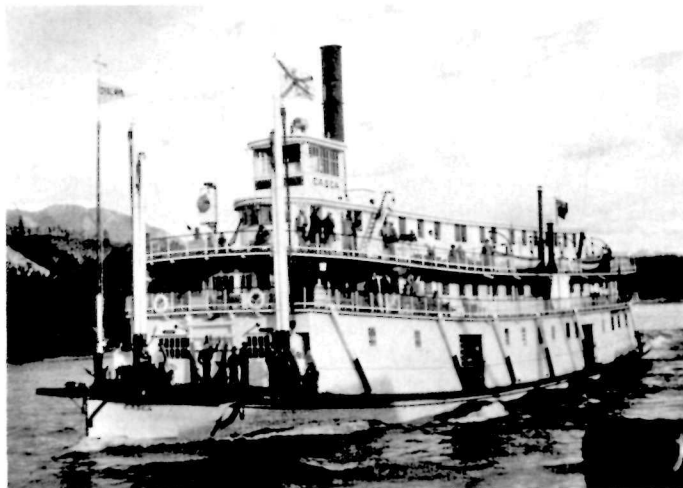
132-134 "Casca" graced the nameplate of three upper river steamers. 132, Casca No. 1, built in 1898, was dismantled in 1911. (*Yukon Archives.*) 133, Casca No. 2, with concealed braces, was built in Whitehorse in 1911 and wrecked in 1936. (*Photo by*

W. Bamford.) 134, Casca No. 3 was launched in 1937, retired in 1952 and destroyed by fire in 1974. (*Yukon Archives.*)

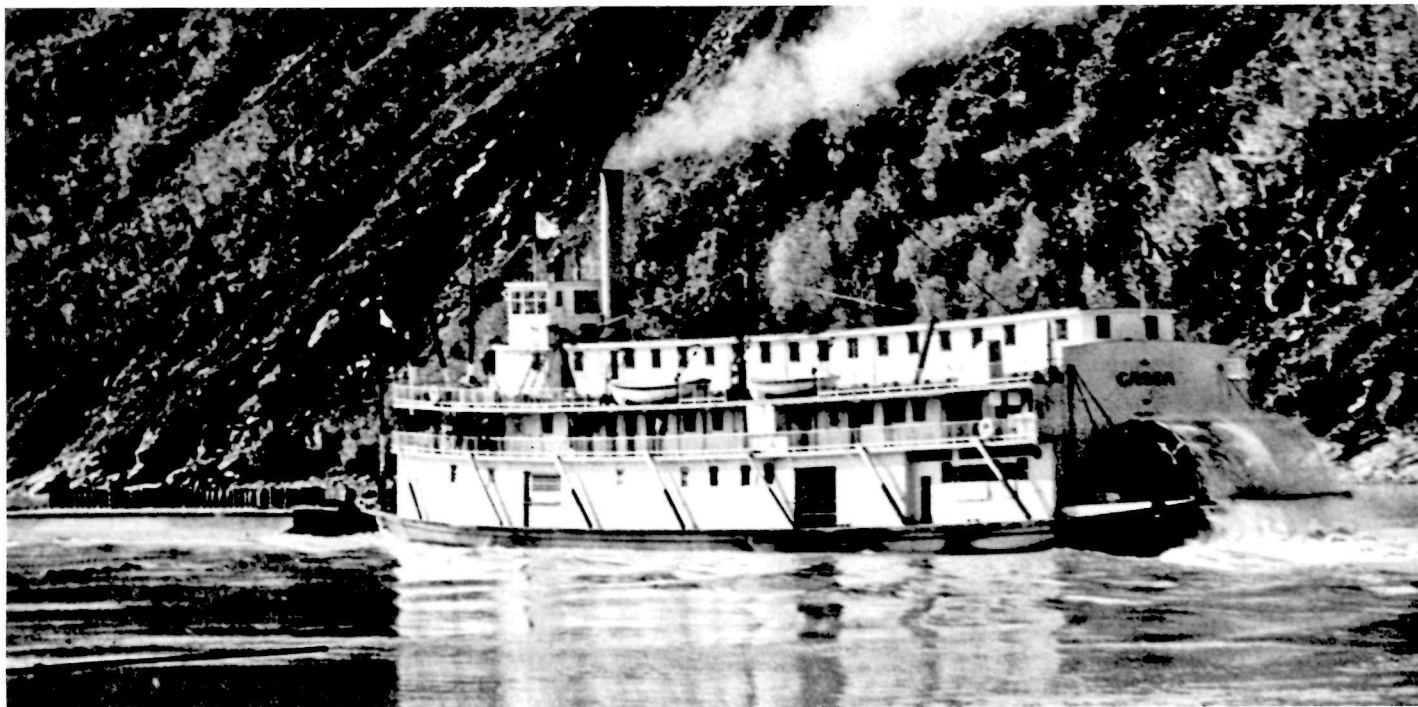
132



133



134



a winter trail connecting Dawson with Stewart Crossing on the Whitehorse-Mayo highway had been built in 1950.¹⁴ This diminished to a large extent the need for developing the Sixty Mile-Taylor Highway access to the Alaska Highway. Since the Sixty Mile extension was opened to traffic during the summer months only, it failed to develop as an important commercial artery for it could not compete with the Whitehorse-based British Yukon Navigation Company.¹⁵ The absence of an all-season overland link between Dawson and Whitehorse was finally remedied when the federal government decided to build an all-weather road between Dawson and Stewart Crossing in 1951. Construction of this 120-mile road was begun in 1952 and completed in 1955.¹⁶

IV
The decade 1946–55 was one of great change in the territorial transportation system. The transition from water to overland forms of transport, begun with the construction of the Whitehorse-Mayo highway and completed with the construction of the Dawson-Stewart Crossing road, was but one of these changes. No less important was the remarkable reversal in the economic fortunes of the White Pass and Yukon Route. These fortunes, which entered a period of protracted decline at the time of the First World War, dropped to a low ebb during World War II with the suspension of production by Treadwell Yukon and the transfer of the railroad to the United States Army. When the railroad was returned to the company on 1 May 1946 following cancellation of the army lease, the company was, in the words of one official, “very near to the end.”¹⁷

While the White Pass and Yukon Route has since made much of the claim that the army left the railroad “in a virtually tumble-down condition” and “did not pay . . . much rent,” the army cannot be held responsible for the difficulties which beset the company after 1946.¹⁸ Instead, the company’s postwar plight should be seen as the climax of years of neglect. By 1950 the unpaid interest on the company’s debentures had grown to \$2,458,000, while dividends, the lifeblood of any successful enterprise, had not been paid since 1912. Although the company did manage to show a nominal book profit, this was achieved at the expense of necessary maintenance and repair work, an expedient that might have been justified over the short term, but which, because of local economic conditions and foreign control, had become a long-term characteristic of the operation.¹⁹

Just as the company appeared to be slipping into the morass of insolvency, an English financier by the name of Norman D’Arcy, backed by the Hambros Bank, quietly acquired all the bonds, debentures and stocks of the White Pass and Yukon Route. On the

advice of C.D. Howe, minister of Trade and Commerce, D’Arcy formed a new Canadian corporation in 1951, the White Pass and Yukon Corporation, and installed Frank H. Brown as president. To finance the takeover, the new company sold 3.7 million dollars worth of bonds on the London market.²⁰

A basic shift in managerial outlook followed the company’s reorganization. Whereas the company had previously been forced to temporize in semipermanent fashion with a multitude of difficulties, the new corporation undertook an ambitious programme which had as its goal the elimination of problems at the source. This new outlook was given cogent expression by Frank Brown at the company’s 1953 annual meeting. Operating on the assumption that “all Canadian railways face the same problem of low earnings through the high cost of running long distances through sparsely settled country,” Brown concluded that “modernization and mechanization to the fullest practicable extent and a firm determination that each subsection of operations shall pay its own way” was the key to extracting the company from its moribund state.²¹

Modernization proceeded rapidly under Brown’s stewardship. New rolling stock was acquired, heavier rail was laid down and obsolete equipment and buildings were sold or written off. To avoid backtracking, the railway repair shops at Skagway were re-located, new ones were built and at Whitehorse the roundhouse was remodelled. For the first time in decades the company’s physical assets were adequately insured. Beginning in 1954 the company gradually replaced its steam locomotives with specially designed diesels capable of operating under conditions of extreme temperature (from 95°F above zero to 65°F below zero). As early as 1955 Brown was able to report that the diesels “fully measured up to expectations.” Far more efficient than the conventional steam engine, diesel-powered locomotives effected an immediate 60 per cent reduction in fuel costs and increased hauling capacity by a corresponding amount. Additionally, they were easier to maintain and did less damage to the permanent way. By 1963 diesel conversion was complete and the steam engine, once the proud workhorse of the White Pass and Yukon Route’s transportation system, joined the sternwheeler in retirement.²²

The disappearance of the river boat preceded that of the steam engine by seven years and perhaps more than anything else signified the passing of an era in Yukon transportation. A fixture for 86 years, the sternwheeler was the victim of Brown’s “firm determination that each subsection of operations shall pay its own way” and the new highways that siphoned off the trade that had once been the sternwheeler’s exclusive preserve.²³ Before 1950, river and road transport had been complementary; construction

of roads had, in point of fact, "meant more business for the stern-wheelers, and also, a more varied schedule."²⁴ But the completion of the Whitehorse-Mayo highway in 1950 and the Stewart Crossing-Dawson road in 1955 brought the river and these highways into direct competition, a competition that the river was fated to lose because of its seasonal nature and rigid capacity.

In a last-ditch attempt to perpetuate the sternwheeler, the British Yukon Navigation Company converted the ore-carrying SS *Klondike* into a tourist vessel. Under an arrangement with Canadian Pacific Airlines which chartered the *Klondike* to ferry passengers from Whitehorse to Dawson, an extensive refurbishment was carried out during 1953–54. The dining room was enlarged, a new lounge and bar were added, and the number of staterooms was increased (the fueling system had been changed from wood to oil in 1951). In spite of these changes, however, the experiment was not a success. Operational expenses exceeded revenues and low water on the Yukon resulted in the cancellation of a number of tours.²⁵

On 18 August 1955 SS *Klondike* No. 2, the last sternwheeler on the Yukon River, steamed into Dawson for the last time.²⁶ The following day it started on the return run to Whitehorse where it shortly joined its fellow craft in permanent retirement, thus bringing to a close one of the longest chapters in the history of the Yukon territory.

Containerization was clearly the most important and unique aspect of the modernization programme outlined by Brown in the White Pass and Yukon Corporation's 1952 annual report.²⁷ It evolved out of the persistent problems created by breakages, shortages, loss of time and general freight disorder, all of which contributed to the high operating costs and economic malaise that plagued the company.²⁸ Company legend has it that the system was developed in Archimedes' fashion "on the banks of the Yukon River near Whitehorse by three worried White Passers sitting on a log."²⁹ Be that as it may, the decision to go ahead with containerization transformed the Yukon transportation system, or at least that portion of it under the White Pass and Yukon Corporation, from one of 19th-century vintage into what was perhaps the most modern in the world.

Because ship holds on the Vancouver-Skagway run were not suitable for container handling, the White Pass and Yukon Corporation organized a wholly owned subsidiary, British Yukon Ocean Services, in 1954. The following year the company launched the first container ship in the world, the four-thousand-ton *Clifford J. Rogers*.³⁰

What distinguished the White Pass and Yukon Corporation's container system from that of any other in existence was its integrated character. The basic principle underlying the concept was "uniform procedures and methods."³¹ Every aspect of the company's transportation establishment was designed specifically for container handling: the coastal vessel, the railroad and the highway trucking division. The original containers, coloured variously to designed merchandise, bulk loads, refrigerated products and explosives, measured seven feet by eight feet by eight feet. Unitized pallets called trays were used for ore transport. All freight handling at transshipment points was done with straddle carriers or fork lifts and the ship was equipped with a gantry crane.³²

Since 1955 when the Container Route, as it is called, was inaugurated, a number of refinements and improvements to the original system have been effected. In 1965 the *Clifford J. Rogers* was retired and a new container ship, the *Frank H. Brown*, was launched. To accommodate the increased capacity of the *Brown*, the company tripled the size of its containers to 25 feet 3 inches by 8 feet by 8 feet. As well, a "tear" or parabolic container was developed to handle ore. In 1969 a second ship, the MV *Klondike* was placed in service. To complete the modernization programme, a new Vancouver terminal and the Skagway Bulk Storage and Loading Terminal were built.³³

Today the White Pass and Yukon Corporation operates at a profit.³⁴ This complete turnaround in the economic fortunes of the enterprise is in large measure attributable to the implementation and refinement of the integrated container system. That system has "lifted White Pass from the doldrums as regards ratio of out profit to sales," a recent presidential report has stated, "to a ratio more in keeping with the ratios which prevail in the case of numerous successful Canadian companies." Containerization has practically eliminated loss and breakage, reduced paper work to a minimum, done away with expensive and unnecessary handling and given the company a margin of operational flexibility never before imagined.³⁵

For the Yukon the benefits derived from the integrated container system have been no less significant. The Container Route has meant faster and more efficient service as well as substantial reductions in freight rates.³⁶ This last is of vital importance in view of the territory's remoteness and its economic base.

V

A new manifestation of federal interest in the North occurred coincidentally with the transportation changes initiated by the White Pass and Yukon Corporation in the early 1950s. While federal in-

terest in the Yukon was certainly not a novel phenomenon, past government activity had tended to be of a reactive and ad hoc nature. What distinguished this new manifestation was that it became an integral part of national policy.

Out of this qualitatively different government interest in the North emerged the concept of "northern development." "It has been said," Prime Minister Louis St. Laurent told the House of Commons on 8 December 1953, "that Great Britain acquired her empire in a state of absence of mind. Apparently we have administered these vast territories of the north in an almost continuing state of absence of mind." To remedy this situation, the government proposed reorganizing the Department of Resources and Development and renaming it the Department of Northern Affairs and National Resources. "We think that the new name is rather important," the prime minister declared, "it is indicative of the fact that the centre of gravity of the Department is being moved north." The shift in thinking that accompanied the change in name was substantive. For the first time in Canadian history a minister was charged "to promote measures for further economic development" and "to develop knowledge of the problems of the north and the means of dealing with them."³⁷ Northern development, fostered by the federal government, was to become a reality.

A review of what has taken place since 1954 demonstrates clearly that successive governments have tended to regard northern development in terms of accretions to the transportation system. John Diefenbaker, perhaps the archetypal advocate of northern development, has given this understanding its clearest expression in stating that "transportation is the key to the development of the North."³⁸

More specifically, this emphasis on transportation has focused on road construction, especially as northern development policy has been applied in the Yukon.³⁹ A significant departure from the post-1945 but pre-northern development policy of encouraging aviation, this approach to northern development can be said to represent a vindication of a half-century of agitation in the territory for new and better roads.

The Diefenbaker government's "Development Road Programme," the territorial adjunct of the more familiar "Roads to Resources Programme," provided the first real impetus to "development" road construction in the Yukon. The Roads to Resources Programme was actually an amplification of a policy outlined by the previous Liberal administration, under which the federal government agreed to pay the entire cost of approved development roads. Development roads, as distinct from conventional roads, were roads that were designed to serve or to create

a potential transportation market by opening up new areas for exploitation and as such introduced an element of risk that had previously been assiduously avoided.⁴⁰ This fact was not lost on critics of the policy, who pointed out that a development road could be built for which traffic might never materialize. In practice, however, the theoretical distinction between development roads and other roads has not been so clear cut. Modern mining companies with an abundance of new technologies relating to exploration, location and testing bear little resemblance to turn-of-the-century gold companies, let alone the individual prospector who scoured the creeks during the early days. As a result, the risk factor has been largely anticipated during an earlier phase of development. For this reason such northern development projects as the Dempster Highway between Dawson and Fort McPherson or the re-opening of the Canol road between Johnsons Crossing and Ross River for Anvil mines have not been inordinately high-risk ventures.

Although an important aspect of northern development policy has been the recognition of the significance of transportation to expansion and the federal government's obligation in fostering its development, it must be noted that the central government participated in a number of Yukon transportation projects long before the concept of northern development was articulated. In varying degrees, road building as well as aids and improvements to navigation were considered as falling within the proper sphere of federal responsibility as early as 1900, as federal grants to the territory for road construction and maintenance, and the work performed by the Department of Public Works on navigable waterways bear witness.⁴¹ These examples of participation, however, differed from transportation projects undertaken for northern development purposes in two respects. In the first place, they were designed to serve existing, not potential, transportation needs and second, the demonstration of an actual transportation need, as was the case after the abandonment of the Overland Trail, provided no guarantee of federal action.

VI

Despite efforts by the federal government to meet the increasing territorial demand for roads, many regions of real or suspected economic potential remain unserved by any form of transport other than the airplane. This constitutes a major problem because most of these regions require surface transport in order to be developed. Because the public sector has neither the capacity nor a legitimate obligation to satisfy this need, private enterprise has come to play an increasingly important role on supplying ground

access, usually in modified form, to remote locations in which it has an exploitive interest.

An excellent example of this type of participation was the formation of Arctic Oil Field Transport by the White Pass and Yukon Corporation and the Proctor Construction Company of Whitehorse. The company was organized to move supplies and heavy equipment to proposed drilling sites in the Bell River area of the northern Yukon in the late 1950s. Instead of employing the conventional technique of transporting freight by tractor-drawn sleighs over roadless wilderness, the company decided to build a winter truck trail over the snow between Elsa and the testing site, 45 miles inside the Arctic Circle. Working from an aerial survey, the company bulldozed a 385-mile road, known as the Wind River Trail, during the winter of 1959–60 that was capable of handling large diesel tractor units. Rivers were crossed with the aid of ice bridges.⁴²

The Wind River Trail was an ingenious expedient that satisfied the immediate problem of short-term ground access into a remote region at minimum cost. Within the brief period of five months Arctic Oil Field Transport not only provided a serviceable freight route into an hitherto inaccessible location (except for the 19th-century fur trade), but completed its delivery schedule of three thousand tons.⁴³ More importantly, the Wind River Trail showed that private enterprise can and should accept some responsibility for the building of roads in the Yukon, especially those of an exploratory and highly speculative nature.

Another area in which the private sector has made an important contribution has been in the development of vehicle technology. Before 1960 most of this technology was developed "south of 60," and the North in general and the Yukon in particular were indirect beneficiaries. This was especially true of railroads, stern-wheelers, trucks and tractors, most of which were imported with little or no modification. Since 1960, however, private enterprise, in league with such establishments as the Muskeg Research Institute at the University of New Brunswick, has shown an increasing willingness to address itself to the peculiar problems of northern transport and to develop vehicles specifically designed for the northern environment.⁴⁴

VII

Air transport continued to develop at a steady pace after 1945 and by 1957 an estimated seven hundred aircraft were in service in the territory. The helicopter, which was substantially refined during the war, was introduced during the late 1940s and proved a boon to prospecting and exploration especially in rugged, unpopulated country where mobility was crucial and where opera-

tions were confined to the summer months. Other aviation improvements such as modern airports and aircraft resulted in bush flying being rapidly superseded on the main air routes although it continued to play an important role on the frontier. In 1968 Canadian Pacific Airlines, the principal carrier flying into the Yukon, inaugurated jet service between Vancouver and Whitehorse and followed this by the establishment of jet service on the Edmonton-Whitehorse run.⁴⁵

Although air transport became an integral part of the Yukon transportation system after 1945, it failed to escape the functional limits which had been set for it during the prewar period. Except for prospecting and exploration as well as passenger and light-weight, high-revenue freight movement, traffic functions which the airplane performed without serious competition, the airplane's role in the territorial transportation system continued to be an auxiliary one. Despite attempts by the federal government to foster aviation in the immediate postwar period and the present-day efforts of critics of the ground transport orientation of northern development, it appears unlikely that the airplane will be responsible for a spectacular breakthrough in the Yukon transportation problem.⁴⁶ In an area where cheap and efficient bulk transport remains the most persistent need, the airplane's horizon is restricted.

Epilogue

The Yukon remains as dependent on transportation as it was 130 years ago when Robert Campbell first established white presence in the territory. This dependence, a consequence of the region's remoteness and its climate, has outlasted what was once a total dependence on staple exploitation, making transportation the most persistent theme in Yukon history. Yukoners, unlike most other Canadians, have never been able to take transportation for granted: their dependence has always been conscious.

Attempts to overcome the Yukon's environmental and locational obstacles have invariably assumed the form of transportation. These attempts have passed through three distinct stages of development during the era of permanent white settlement. The first was marked by an exclusive dependence on the sternwheeler and the Yukon River. Used in concert, the sternwheeler and the river made possible the series of events which culminated in the discovery of gold on Bonanza Creek and the subsequent stampede to the Klondike. The gold rush, in turn, left as its legacy an interlocking system based on the railroad and sternwheeler which sustained the region for the following half century. This phase lasted until 1950–55 when it was superseded by a combination of the railway and the highway.

The termination of sternwheeler operations symbolized more than the abandonment of a particular form of transport. It represented the passing of a way of life. For four generations the Yukon River and its navigable tributaries, the principal arteries of inland communication, had determined the nature of territorial existence. The seasonal rhythm that characterized every aspect of Yukon life before 1955 was a faithful reflection of the seasonal nature of the inland waterways. For over 80 years the Yukon knew only two seasons and the advent of each was signalled not by the calendar but by freeze-up and break-up.

The conversion to the use of highways changed this dependence. Seasonal transportation was eliminated and vast, previously inaccessible areas were opened to economic exploitation. A new pattern of settlement evolved based on the post-1945 network of highways. Communities like Fort Selkirk, left isolated after the termination of water transport, were virtually abandoned. Others like Dawson and Mayo, which owed their establishment to the exigencies of river transport, survived the loss of their transportation function, but ceased to have anything but a local importance. The process of urbanization was accelerated, thereby reversing a trend first evident in Dawson after 1900 when roads had facilitated population movement away from the city. Of even greater significance was the transformation in the traditional role played by transportation. Until 1955 transportation was the master of the

Yukon's economic destiny. River transport governed every aspect of economic activity in the territory. Proximity to navigable water was the primary consideration of all enterprise. Except for minor improvements to navigation and a measure of sternwheeler refinement, this form of transportation allowed very little in the way of flexibility. Rivers, unlike roads, could not be built to serve an economic purpose; instead, they defined the limits of all development. With the conversion to overland forms of communication, transportation assumed a different function: it became a servant rather than the master of the territory's destiny. Although unheralded, this profound alteration constituted the most important change in the history of the Yukon transportation system.

Old notions proved less susceptible to change than the transportation system, however. Northern development schemes demonstrated just how ingrained was the time-honoured equation that the absence of transportation equalled remoteness and that the solution was to provide more facilities. What was required instead was a wholesale re-examination of the almost universally held assumption that conventional transportation solutions – that is, the provision of physical links – constituted the most effective answer to the problem. The lesson of the silver-lead industry was that the installation of a concentrator proved to be a far more effective answer to the problem than transportation itself. Another question that merited closer consideration was whether or not the provision of these physical links fostered or inhibited development. Put another way, had the emphasis on traditional transportation solutions obscured the fact that a lack of markets and the absence of conditions making for "economies of scale" were more significant, in certain instances at least, to the Yukon's remoteness than a dearth of transportation facilities? A major reason for the abandonment of the Canol pipeline, for example, was that an ancillary system, the Skagway-Whitehorse pipeline, made it cheaper to import California oil for local consumption despite the fact that in purely spatial terms Norman Wells was much closer to Whitehorse. In this particular instance, the provision of a physical link not only inhibited development, but also underlined a lesson long appreciated by students of transportation but seldom applied to the northern scene: transportation frequently destroys local industry by making local markets more accessible to a metropolitan centre. Seen from this perspective, any attempt to make the Yukon less dependent economically with the aid of transportation may well be self-defeating.

Until transportation ceases to be a scapegoat or panacea for all the Yukon's problems, those problems which have traditionally beset the territory will remain. It is too often ignored that transportation has historically had to operate within the same limitations of

remoteness, small markets and climate as the primary producer. To assign to transportation a role which should properly be performed by another economic sector, as was the case with the Whitehorse copper industry where transportation was called upon to compensate for a marginal mineral deposit, or to expect transportation to function as a substitute for the absence of "economies of scale," is to demand too much from what is only one instrument, albeit a crucially important one, in the exploitation of the region's resources.

Endnotes

Introduction

- 1 See W.A. Mackintosh, "Economic Factors in Canadian History," *Canadian Historical Review*, Vol. 4 (March 1923), pp. 12–25; Harold Adams Innis, "Transportation as a Factor in Canadian Economic History," in M.Q. Innis, comp., *Essays in Canadian Economic History* (Toronto: Univ. of Toronto Press, 1956), p. 62; M. Watkins, "A Staple Theory of Economic Growth," in W.T. Easterbrook and M.H. Watkins, eds., *Approaches to Canadian Economic History, a Selection of Essays* (Toronto: McClelland and Stewart, 1967), p. 55, and W.T. Jackman, *Economics of Transportation* (Toronto: Univ. of Toronto Press, 1926), p. 9 for the relationship between transportation and staple production.
- 2 "Transportation is a must, first to discover the ore bodies, then to bring in the equipment to develop them, and finally to take out the minerals" (R.G. Bucksar, "The Frontiers Recede, a Brief History of Transportation in the Canadian Northwest," *North*, Vol. 8 [Nov.–Dec. 1961], pp. 22–3); "Transportation is one of the keys to the future development of the Canadian Northwest" (J.L. Robinson, "Water Transportation in the Canadian Northwest," *Canadian Geographical Journal*, Vol. 31 [Nov. 1945], p. 237); "The development of a region can obviously not proceed faster than transportation facilities will permit" (H.W. Hewetson, "Transportation in the Canadian North," *Canadian Journal of Economics and Political Science*, Vol. 11 [Aug. 1945], p. 450); "L'exploitation minière dans une telle région est actuellement conditionnée par l'état des communications et des transports . . . Le plus grave problème qu'ont à affronter ceux qui s'intéressent au développement économique du Grand-Nord, et celui du transport . . . En somme, la mise en valeur des immenses territoires du Nord se ramène à une question de transport et de transport à des prix abordables" (G. Gardner, "Quelques aspects de la mise en valeur du Grand-Nord," *L'Actualité Économique*, Vol. 32 [Jan.–Mar. 1957], pp. 581, 585).
- 3 R.A.J. Phillips, *Canada's North* (Toronto: Macmillan, 1967), p. 181.
- 4 Harold Adams Innis, "Transportation in the Canadian Economy," in M.Q. Innis, comp., op. cit., p. 220.
- 5 See Morgan B. Sherwood, ed., *Alaska and its History* (Seattle: Univ. of Washington Press, 1967), pp. 3–158.
- 6 G.W. Rowley, "Settlement and Transportation in the Canadian North," *Arctic*, Vol. 7, Nos. 3 and 4 (1954), p. 336.
- 7 Canada. Geological Survey of Canada, *Report on an Exploration in the Yukon District, N.W.T. and Adjacent Portion of British Columbia, 1887*, by George M. Dawson; *With Extracts relating to the Yukon District from Report on an Exploration in the Yukon and Mackenzie Basins, 1887–88*, by R.G. McConnell (Ottawa: Queen's Printer, 1898) (hereafter cited as *Dawson Report*), p. 346.
- 8 James Weppler, *Yukon, Early History; A Community of Men*, Manuscript Report Series No. 9 (Ottawa: Parks Canada, 1969), p. 8.
- 9 C. Parnell, "Campbell of the Yukon – Pt. I," *The Beaver*, Outfit 273 (June 1942), p. 4.
- 10 Alexander Murray, op. cit., pp. 8–9; William Ogilvie, *Early Days on the Yukon and the Story of its Gold Finds* (Ottawa: Thorburn & Abbott, 1913) (hereafter cited as *Early Days*), p. 23; Alexander Murray, op. cit., p. 2.
- 11 Alexander Murray, loc. cit.
- 12 Campbell to Chief Factor Donald Ross, en route down the Mackenzie, 30 Aug. 1851, cited in J.P. Kirk and C. Parnell, "Campbell of the Yukon – Pt. III," *The Beaver*, Outfit 273 (Dec. 1942), p. 24. Murray anticipated the discovery in 1848 but never set out to prove it. See Alexander Murray, op. cit., p. 75.
- 13 James Weppler, op. cit., p. 9; Alexander Murray, op. cit., p. 9. The discovery led to the abandonment of Forts Frances and Pelly Banks. Fort Selkirk was destroyed in 1852 and never rebuilt (Canada. Public Archives [hereafter cited as PAC], RG15, B1a, Vol. 72, fol. 61861, T. Kains to E. Deville, Victoria, 20 Nov. 1886).
- 14 The United States purchased Alaska from Russia in 1867. The Hudson's Bay Company was forced to give up Fort Yukon in 1869 because it was in American territory, a fact that had been known to the Company from the date of the fort's construction. The expulsion effectively terminated the Hudson's Bay Company's presence in the Yukon although the Company did not abandon its interests in the region until 1889 (see Norbert Macdonald, "Seattle, Vancouver and the Klondike," *Canadian Historical Review*, Vol. 49 [Sept. 1968], p. 237).
- 15 Harold Adams Innis, *The Fur Trade in Canada. An Introduction to Canadian Economic History*, rev. ed. (Toronto: Univ. of Toronto Press, 1967) (hereafter cited as *Fur Trade*), p. 324.
- 16 *Ibid.*, p. 298.
- 17 Alexander Murray, op. cit., p. 93n (Burpee quotes the statement).
- 18 Beaver and marten alone were purchased by the Hudson's Bay Company (Harold Adams Innis, *Fur Trade*, p. 325).
- 19 R.G. Bucksar, op. cit., pp. 17–8.
- 20 W.H. Dall, op. cit., pp. 165–6, 170, 191. See also diagrams in *ibid.*, p. 190; E. Tappan Adney, *The Klondike Stampede of 1897–1898* (Fairfield, Wash.: Ye Galleon Press, 1968) (hereafter cited as *Klondike*), p. 224.
- 21 When not in use the boats were "well covered with small trees and brush to shelter them from the sun and weather." In addition to local timber, roots were sometimes used in their construction (see Alexander Murray, op. cit., pp. 98, 67).
- 22 Recent scholarship has tended to revise this view (see Richard E. Welch, Jr., "American Public Opinion and the Purchase of Russian America," in Morgan B. Sherwood, op. cit., pp. 273–90).

- 23 J. Goldstein, "The Living Thread: A History of River Transportation in the Yukon Territory," Manuscript on file, National Historic Parks and Sites Branch, Parks Canada (Ottawa, n.d.), p. 14; L.D. Kitchener, *Flag over the North* (Seattle: Superior Publishing Co., 1954), pp. 14, 34.
- 24 This innovation antedated the inauguration of steam service to Edmonton by a full nine years (J.L. Robinson, op. cit., p. 238).
- 25 Ibid., p. 239; J. Goldstein, op. cit., p. 13.
- 26 W.H. Dall, op. cit., p. 7.
- 27 William Ogilvie, *Early Days*, pp. 69, 75–6; Harold Adams Innis, *Settlement and the Mining Frontier* (Toronto: Macmillan, 1936) (hereafter cited as *Settlement*), p. 182; Robert C. Kirk, op. cit., p. 82. The term "lower river" denotes that section of the Yukon River between Dawson and Saint Michael.
- 28 PAC, RG15, B1a, Vol. 72, fol. 61861, Memorandum, G.M. Dawson, Ottawa, 4 Dec. 1886; *ibid.*, Wm. Ogilvie to minister of the Interior, Boundary Line, Yukon River, 27 Feb. 1888.
- 29 Harold Adams Innis, "An Introduction to Canadian Economic Studies," in M.Q. Innis, op. cit., p. 163; W.T. Easterbrook and H.G.J. Aitken, *Canadian Economic History* (Toronto: Macmillan, 1956), pp. 337–8.
- 30 Leroy N. McQuesten, *Recollections of Leroy N. (Jack) McQuesten of Life in the Yukon, 1871–1885*, copied from the original in the possession of the Yukon Order of Pioneers, June 1959, pp. 3, 9; William Ogilvie, *Early Days*, pp. 95–6.
- 31 Pierre Berton, *Klondike, the Life and Death of the Last Great Gold Rush* (Toronto: McClelland and Stewart, 1958), p. 14.
- 32 J.R. Lotz, "On the Trail of '98," *Seattle Post Intelligencer*, Pictorial Review, 31 May 1964, p. 10. The Chilkats were a Tlinkit tribe.
- 33 Pierre Berton, op. cit., p. 7; some writers maintain that Edward Bean was the first white man to cross the Chilkoot (see Roy Minter, "An Historical Sketch of the Yukon Territory," in Whitehorse Chamber of Commerce and Yukon Chamber of Mines. Yukon Northern Resource Conference, 2nd, *Yukon's Resources: To-day and Tomorrow* [Whitehorse, 1966] (hereafter cited as YNRC-2), p. 10).
- 34 A.C. Hinton and P.H. Godsell, *The Yukon* (Toronto: Ryerson Press, 1954), p. 31; United States. Department of The Interior. National Park Service, *Proposed Klondike Gold Rush National Historic Park: Historic Resource Study*, by Edwin C. Bearss (Washington, D.C.: USGPO, 1970) (hereafter cited as USDINPS), pp. 6–7; Joseph Ladue, *Klondyke Facts, Being a Complete Guide Book to the Great Gold Regions of the Yukon and Klondyke and the North West Territories* (Montreal: Lovell, 1897) (hereafter cited as *Klondyke Facts*), p. 15.
- 35 R.G. Woodall has noted that "for the last 1,250 feet of the climb all goods had to be packed on men's backs. Then the horses were fastened in a rope sling and led up the trail on a long rope until they lost their footing, when all the men available hauled them as they lay up to the summit. They were then blindfolded and backed over the edge and slid down the other side 400 feet to Crater Lake" (R.G. Woodall, *The Postal History of Yukon Territory* [Dorset, England: R.G. Woodall, n.d.], Ch. 3, p. 2).
- 36 As one observer wrote, "as for bringing in animals I think it a useless undertaking. The Indians are peaceable both in and outside – the outside Indians packing in for 6¢ to 9¢ per ld. 30 miles" (PAC, RG15, B1a, Vol. 72, fol. 61861, James Winn to ?, Juneau, 24 March 1883).
- 37 Pierre Berton, op. cit., pp. 15–6.
- 38 See PAC, RG15, B1a, Vol. 72, fol. 61861, T. Kains to E. Deville, Victoria, Nov. 1886; William Ogilvie, *Early Days*, p. 40.
- 39 Canada. Geological Survey of Canada, *Dawson Report*.
- 40 William Ogilvie, *The Klondike Official Guide. Canada's Great Gold Field, the Yukon District* (Toronto: Hunter, Rose, 1898) (hereafter cited as *Official Guide*), p. 28.
- 41 PAC, RG15, B1a, Vol. 72, fol. 61861, Dawson to White, Ottawa, 12 Dec. 1887. Winslow has written incorrectly that William Moore cut a trail over the White Pass in 1887 (Kathryn Winslow, *Big Pan-out* [New York: Norton, 1951], p. 125).
- 42 USDINPS, pp. 81, 31–2.
- 43 Ibid., p. 33.
- 44 Harold Adams Innis, *Settlement*, p. 182; William Ogilvie, *Early Days*, p. 79.
- 45 E. Tappan Adney, *Klondike*, p. 273.
- 46 William Ogilvie, *Early Days*, pp. 68, 80–1.
- 47 Ibid., p. 90; Pierre Berton, op. cit., p. 8; PAC, RG15, B1a, Vol. 72, fol. 61861, Extract of letter from Frederick W. Harte, Natal Station, Yukon River [1873].
- 48 See Robert C. Kirk, op. cit., pp. 211–3.
- 49 R.G. Bucksar, op. cit., p. 18.
- 50 A. Shortt and A.G. Doughty, eds., *Canada and Its Provinces: A History of the Canadian People and their Institutions, by One Hundred Associates* (Toronto: Publishers Association of Canada, 1914), Vol. 22, p. 618.
- 51 Copy of clipping from *The Alaska Weekly*, 4 Aug. 1939, in V.A.B. Faulkner and A. Baird, "The Yukon," Manuscript on file, National Historic Parks and Sites Branch, Parks Canada (Ottawa, n.d.); Robert C. Kirk, op. cit., pp. 175–6, 208–9; by 1894 a horse packing service had been organized by J.J. Healy between Dyea and Sheep Camp (William Ogilvie, *Early Days*, p. 153).
- 52 Generally the sternwheelers made one trip each from Saint Michael during the season. Freight rates averaged \$150 a ton (PAC, RG15, C2, Vol. 15, fol. 1549, Surveyor General, memorandum, "Exploration of roads to the Yukon," 20 Apr. 1897). In addition to the coastal service provided by the Pacific Coast Steamship Company (see Norbert Macdonald, op. cit., p. 236), both the Alaska Commercial Company and its rival, the North American Transportation and Trading Company, operated vessels on the West Coast run. In 1886 the Alaska Commercial Company ran two ocean steamers, the *St. Paul*, rated at 680 tons, and the *Duro*, rated at 400 tons (see PAC, RG15, B1a, Vol. 72, fol. 61861, T. Kains to E. Deville, Victoria, 20 Nov. 1886).

The Great Stampede

- 1 Mark Sullivan, *The Turn of the Century*, Vol. 1 of *Our Times: The United States 1900–1925*, quoted in Pierre Berton, op. cit., p. 101.
- 2 "Dispatch from Forty Mile, Yukon River, N.W.T., August 17, 1896," quoted in *Whitehorse Star*, 10 Aug. 1970, p. 7.
- 3 See Pierre Berton, op. cit., pp. 96–136. Tappan Adney, correspondent for *Harpers Weekly* and probably the most acute contemporary observer of the Klondike phenomenon, attributed the size of the stampede to the publicity accorded the discovery. "Nowadays," he wrote, "the news is carried by the telegraph and newspaper to all parts of the world, whereas formerly the excitement was all local, and

- had died away before word of it reached the rest of the world" (E. Tappan Adney, *Klondike*, p. 68); R.A.J. Phillips, op. cit., p. 91.
- 4 There were a number of variations: the Peace-Liard- Pelly route, originally used by the Hudson's Bay Company in the early 1840s until Robert Campbell discovered that the Pelly and Yukon were on the same watercourse, and the Gravel or Keele River route, via the Mackenzie, Keele and Stewart rivers (see E.J. Corp, "The Trail of '98 and the Gravel [Keele] River Route," *Arctic Circular*, Vol. 11 [March 1959], p. 36).
 - Prince Albert and Saskatoon also vied for the Klondike trade (see William Ogilvie, *Official Guide*, p. 99 and PAC, RG15, B1a, Vol. 236, fol. 464229, T. Copland to the minister of the Interior, Saskatoon, 26 Feb. 1898).
 - In September 1897 the dominion government commissioned a North-West Mounted Police detachment under Inspector J.D. Moodie to report on the feasibility of a wagon road over the Peace-Liard-Pelly route (see Canada. Parliament, *Sessional Papers*, No. 15, 1899, Part II).
 - 5 W.D. MacBride, "A Brief History of the White Pass and Yukon Route and the 'Trails of '98'" (Whitehorse: Indian and Northern Affairs Library, 1945) (hereafter cited as "Brief History"), p. 2. The route was also known as the "Overland Trail" or the "Back Door Route" (F. Walker, "Overland Trail to the Klondike," *Alberta Historical Review*, Vol. 7 [Winter 1959], p. 1).
 - 6 Pierre Berton, op. cit., p. 231.
 - 7 Ibid., pp. 231–2, 243.
 - 8 PAC, RG15, C2, Vol. 15, fol. 1564, Surveyor General, memorandum re: Stikine Road to Yukon, 16 Aug. 1897.
 - 9 See W.D. MacBride, "Brief History," p. 1.
 - 10 David Robert Morrison, "The Politics of the Yukon Territory: 1898–1908" (MA thesis, Univ. of Saskatchewan, Saskatoon, 1964), p. 30.
 - 11 PAC, RG15, C2, Vol. 15, fol. 1549, Surveyor General, memorandum, "Exploration of roads to the Yukon," 20 Apr. 1897.
 - 12 Pierre Berton, op. cit., p. 228; Harold Adams Innis, *Settlement*, p. 196. In late 1897 a syndicate headed by Lord Charles Montagu, H.M. Kersey and C.H. MacKay agreed to build either a wagon road or a railroad. A month later the syndicate withdrew its offer to build a railroad and its wagon road proposal was rejected (David Robert Morrison, op. cit., pp. 29–30).
 - 13 Harold Adams Innis, *Settlement*, p. 196.
 - 14 PAC, RG15, B1a, Vol. 233, fol. 462325, John Eyre to J.G. Colmer, Walredden Manor, Tevistock [England], 29 Jan. 1898. Other concessions to the contractors were that royalties on gold found on the land grants were to be taxed at the rate of one per cent, as compared to the ten per cent paid by operators in the Klondike; that the contractors were to be given a free hand in assessing tolls, and that the railroad was to enjoy a monopoly for five years (E. Tappan Adney, *Klondike*, pp. 384–5); Canada. Parliament. House of Commons, *Debates*, 1898, *passim*.
 - 15 W.D. MacBride, "Brief History," p. 1; Pierre Berton, op. cit., p. 228; Walter Hamilton, *The Yukon Story. A Sourdough's Record of Gold-rush Days and Yukon Progress from the Earliest Times to the Present Day* (Vancouver: Mitchell Press, 1964), p. 87. As a result of the Senate's action, the government was ordered to pay damages of \$327,000 to Mackenzie and Mann (David Robert Morrison, op. cit., p. 31). Although the railroad scheme was abandoned, some 600 stampedeers used the Stikine route (see Harold Adams Innis, *Settlement*, p. 196; W.D. MacBride, "Brief History," p. 1; PAC, RG15, B1a, Vol. 233, fol. 462325, John Eyre to J.G. Colmer, Walredden Manor, Tevistock, 29 Jan. 1898).
 - 16 The Alaska Commercial Company, the North American Transportation and Trading Company and the Pacific Coast Steamship Company.
 - 17 Martha Louise Black, *My Seventy Years, by Mrs. George Black as told to Elizabeth Bailey Price* (London: Nelson, 1938), p. 95.
 - 18 No accurate figures exist as to the number of sternwheelers on the lower river during the summer of 1898. Harrington Emerson gives the total as 110, another observer 88, of which 30 never reached Dawson, Kathryn Winslow notes 34 and Pierre Berton 60 (Harrington Emerson, "The Engineer and the Roads to the Gold Fields," *The Engineering Magazine*, Vol. 17 [1899], pp. 759–60, cited in USDINPS, p. 123; "Transportation Past and Present in Alaska," *Alaska Magazine and Canadian Yukoner*, Vol. 1 [March 1900], p. 10; Kathryn Winslow, op. cit., p. 84; Pierre Berton, op. cit., p. 307).
 - 19 J.L. Robinson, op. cit., p. 239.
 - 20 Robert C. Kirk, op. cit., p. 215.
 - 21 Arthur Treadwell Walden, *A Dog-Puncher on the Yukon* (Montreal: Carrier, 1928), p. 86.
 - 22 Robert C. Kirk, op. cit., p. 215.
 - 23 J.S. Webb, "The River Trip to the Klondike," in *Alaska: Sundry Pamphlets*, n.p. *Alaska: Sundry Pamphlets* is a miscellaneous compilation of articles prepared by the Indian and Northern Affairs departmental library, n.p., n.d.
 - 24 Robert C. Kirk, op. cit., p. 215.
 - 25 A major factor dissuading stampedeers from travelling the lower river route was cost. This was reinforced by the rumour that transportation companies on the lower river would not carry supplies that had been purchased on the West Coast, as the selling of outfits was an important part of their operations. This stipulation was, however, seldom if ever enforced. According to Robert Kirk a few stampedeers moved their outfits up-river from Saint Michael by canoe, although this form of ingress never became popular (see Kathryn Winslow, op. cit., p. 85; Joseph Ladue, "Life in the Klondike Gold Fields. Personal Observations of the Founder of Dawson," recorded by J. Lincoln Steffens in *Alaska: Sundry Pamphlets*, n.p.; Roy Minter, special assistant to the president, White Pass and Yukon Corporation, personal interview, Vancouver, 1 Aug. 1970 [hereafter cited as pers. com.]; Robert C. Kirk, op. cit., p. 85).
 - 26 Harold Adams Innis, *Settlement*, p. 193.
 - 27 The others were the Stikine River route, the Port Valdez, Alaska route (see Pierre Berton, op. cit., pp. 211–8 and Kathryn Winslow, op. cit., p. 87), the Taku Inlet route (see Kathryn Winslow, op. cit., p. 87; PAC, RG15, C2, Vol. 15, fol. 1549, William Ogilvie to W.F. King, Ottawa, 26 April 1895), and the Dalton Trail. The Dalton Trail, which ran from Pyramid Harbor (now Haines, Alaska) to a point below Rink Rapids on the Yukon River, was completed by Jack Dalton in 1896. Dalton charged a toll of \$250 for the use of his trail which he collected from those who took animals over it. Those who travelled on foot were given free access. In the summer of 1898, 1,000 cattle were driven over the trail to Dawson. Although the trail was a good one, many avoided it because it was 350 miles overland. After stern-

- wheelers were introduced above Five Finger Rapids the Dalton Trail was abandoned (see W.D. MacBride, "The Story of the Dalton Trail," no title of publication given. Information obtained from a reproduction possessed by A. Rettalick, Whitehorse, Yukon Territory; Harold Adams Innis, *Settlement*, p. 196; Pierre Berton, op. cit., pp. 371–2; W.D. MacBride, "Brief History," p. 2; PAC, RG15, C2, Vol. 15, fol. 1549, W.F. King to A.M. Burgess, Ottawa, 17 March 1897; L. Harrington, "Yukon's Wilderness Roads," *Canadian Geographical Journal*, Vol. 65 [Aug. 1962], p. 68; Kathryn Winslow, op. cit., p. 87). There is some dispute concerning the terminus of the Dalton Trail. MacBride designates Rink Rapids (W.D. MacBride, "The Story of the Dalton Trail," n.p.), others Fort Selkirk (see PAC, RG15, C2, Vol. 15, fol. 1549, King to Burgess, Ottawa, 17 March 1897).
- 28 William Ogilvie, *Early Days*, p. 153.
- 29 E. Tappan Adney, *Klondike*, p. 91.
- 30 Martha Louise Black, op. cit., p. 103; Pierre Berton, op. cit., p. 246.
- 31 Finnegan's Point, Canyon City, Pleasant Camp, Sheep Camp, Stone House and the Scales (see Pierre Berton, op. cit., pp. 247–9). For descriptions of Sheep Camp, the most notable of the stopping-off points, see Martha Louise Black, op. cit., p. 103; Samuel Steele, *Forty Years in Canada; Reminiscences of the Great North-West, with some Account of his Service in South Africa . . .*, ed. Mollie Glenn Niblett, intro. J.G. Colmer (Toronto: McClelland Goodchild, Stewart, 1918), p. 296.
- 32 Samuel Steele, op. cit., p. 294; J.R. Lotz, op. cit., p. 12; Pierre Berton, op. cit., p. 251; T.A. Rickard, *Through the Yukon and Alaska* (San Francisco: Mining and Scientific Press, 1909), pp. 149–50.
- 33 Pierre Berton, op. cit., pp. 254–5; J.R. Lotz, op. cit., p. 11; W.D. MacBride, "Brief History," p. 2; Harold Adams Innis, *Settlement*, p. 187, n 23.
- 34 W.D. MacBride, "Brief History," p. 2. The tramway also eliminated the packers' practice of breaking contracts at the foot of the summit and increasing their rates to a dollar per pound (Pierre Berton, op. cit., p. 249).
- 35 Pierre Berton (op. cit., p. 245) estimates the total as 22,000.
- 36 Joseph Ladue, *Klondyke Facts*, p. 21; Martha Louise Black, op. cit., p. 99; Kathryn Winslow, op. cit., p. 118.
- 37 Pierre Berton, op. cit., pp. 250–1.
- 38 *Ibid.*, pp. 165–6; J.R. Lotz, op. cit., p. 11.
- 39 Pierre Berton, op. cit., p. 246, 251–2; Robert C. Kirk, op. cit., pp. 37–8; Martha Louise Black, op. cit., p. 102. See E. Tappan Adney, *Klondike*, p. 94 for a description of Indian packing.
- 40 Pierre Berton, op. cit., p. 153; William Ogilvie, *Early Days*, p. 41.
- 41 Robert C. Kirk, op. cit., p. 39; Samuel Graves, *On the "White Pass" Pay-roll* (Chicago: privately printed, 1908), p. 7.
- 42 Robert C. Kirk, op. cit., pp. 36–7.
- 43 Of the 3,800 pack horses registered by the United States Customs, it is estimated that all but 30 either died or were killed (PAC, MG30, A19, Archie Shiels, "A Short History of Transportation To and Within the Territory of Alaska, 1867–1908," copy of typescript in PAC, pp. 1–2); Pierre Berton, op. cit., p. 157; T.A. Rickard, op. cit., pp. 137–8; W.D. MacBride, "Brief History," p. 3; Harold Adams Innis, *Settlement*, p. 187, n 23; Walter Hamilton, op. cit., pp. 87–8.
- 44 Many of those who took the Chilkoot Trail built their boats at the head of Lindeman Lake.
- 45 Martha Louise Black, op. cit., p. 114; Arthur Treadwell Walden, op. cit., p. 196.
- 46 Robert C. Kirk, op. cit., p. 65; Arthur Treadwell Walden, op. cit., p. 196.
- 47 Robert C. Kirk, op. cit., pp. 64–5.
- 48 *Ibid.*, pp. 61–2.
- 49 Martha Louise Black, op. cit., p. 115; Arthur Treadwell Walden, op. cit., p. 227.
- 50 Harold Adams Innis, *Settlement*, p. 193. Over 150 boats were destroyed on this section of the river (*ibid.*).
- 51 *Ibid.*, p. 192; T.A. Rickard, op. cit., p. 171.
- 52 Harold Adams Innis, *Settlement*, p. 192; Robert C. Kirk, op. cit., p. 75; T.A. Rickard, op. cit., p. 171; Pierre Berton, op. cit., p. 281; W.D. MacBride, "Brief History," p. 3. Ogilvie wrote that only three or four of the tram wagons were drawn by horses, the rest by hand (William Ogilvie, *Early Days*, p. 82). One of these wagons is now on display at the MacBride museum in Whitehorse; Harold Adams Innis, *Settlement*, p. 192, n 33; T.A. Rickard, op. cit., p. 171.
- 53 Between the break-up of ice in the spring of 1898 and October of the same year, 7,124 boats and some 28,000 people passed the Tagish Lake post of the North-West Mounted Police. This is the most accurate estimate of the number of people who stampeded to the Klondike via the Chilkoot and White Pass trails in the spring and summer of 1898 (Canada. Parliament, *Report of the North-West Mounted Police* [hereafter cited as CNWMP, *Annual Report*], 1898 [Ottawa: Queen's Printer, 1899], Pt. III, pp. 38–9).
- 54 Quoted in Kathryn Winslow, op. cit., pp. 211–2.
- 55 Pierre Berton, op. cit., p. 151.
- 56 Kathryn Winslow, op. cit., p. 71.
- 57 *Ibid.*, pp. 62–3.
- 58 F. Walker, op. cit., pp. 1–2; Pierre Berton, op. cit., p. 152.
- 59 PAC, RG15, B1a, Vol. 234, fol. 462950, Nils Muller to minister of the Interior, Kristiania, Norway, 27 Jan. 1898.
- 60 Robert C. Kirk, op. cit., p. 207.
- 61 PAC, RG15, B1a, Vol. 231, fol. 441864, D.B. James to secretary [*sic*] of the Interior, San Francisco, 1 Sept. 1897.
- 62 *Ibid.*, Lynwode Pereira to D.B. James, Ottawa, 17 Sept. 1897.
- 63 P.E. Roy, "Railways, Politicians and the Development of the City of Vancouver as a Metropolitan Centre, 1886–1929" (MA thesis, Univ. of Toronto, 1963), p. 80; "This Month in Northland History," *Alaska Sportsman*, Vol. 34 (Oct. 1968), pp. 16–7.
- 64 See W.T. Jennings, *Report of Mr. W.T. Jennings, C.E., on Routes to the Yukon* (Ottawa: Printed by order of Parliament, 1898).
- 65 Roy Minter, pers. com.
- 66 British Columbia (Province), *Statutes*, 60 Vict. cap. 49, 1897; Canada. Parliament, *Statutes*, 60–61 Vict. cap. 89, 1896–97.
- 67 See USDINPS, pp. 247–8.
- 68 E. Tappan Adney, *Klondike*, p. 298; see also J.H.E. Secretan, *To Klondyke and Back, a Journey down the Yukon from its Source to its Mouth* (London: Hurst and Blackett, 1898), p. 1.
- 69 Roy Minter, pers. com.
- 70 *Ibid.*; "Transportation Past and Present in Alaska," *Alaska Magazine and Canadian Yukoner*, Vol. 1 (March 1900), p. 12.
- 71 USDINPS, pp. 247–8.
- 72 Roy Minter, pers. com.

- 73 Edward A. Herron, *Alaska's Railroad Builder, Mike Heney* (New York: Julian Messner, 1960), p. 85; N. Thompson and J.H. Edgar, *Canadian Railway Development* (Toronto: Macmillan, 1933), p. 322.
- 74 S.H. Graves, op. cit., pp. 15–6.
- 75 Max David, "Railroad through a Snow-bound Hell," *True Magazine* (Jan. 1963), p. 102.
- 76 S.H. Graves, op. cit., p. 15.
- 77 The White Pass and Yukon Route, a general transportation company, was organized by Close Brothers of London on 30 July 1898. It included the Pacific and Arctic Railway and Navigation Company, the British Columbia-Yukon Railway Company and the British Yukon Mining, Trading and Transportation Company (also known as the British Yukon Railway Company) (R. Dorman, *A Statutory History of Steam and Electric Railways of Canada* [Ottawa: King's Printer, 1941], p. 635).
- 78 S.H. Graves, op. cit., p. 33.
- 79 Max David, op. cit., p. 103; S.H. Graves, op. cit., p. 33; Roy Minter, pers. com.
- 80 N. Thompson and J.H. Edgar, op. cit., pp. 322–3; W.D. MacBride, "The Story of the White Pass and Yukon Route" (hereafter cited as "Story"), p. 1.
- 81 C.E. Barger, "A Sturdy Little Line," *Alaska Sportsman*, Vol. 12 (Jan. 1946), p. 34; Roy Minter, pers. com.
- 82 S.H. Graves, op. cit., p. 16.
- 83 Ibid.
- 84 Ibid.; C.S. Price, "Thunder in the Mountains," *Alaska Sportsman*, Vol. 24 (April 1958), p. 23; W.D. MacBride, "Story," p. 2; Omer Lavallee, "The Road of Gold . . . Some Historical Notes on the White Pass & Yukon Route," *Canadian Railroad Historical Association, News Report* No. 83 (Nov. 1957), p. 108; N. Thompson and J.H. Edgar, op. cit., pp. 322–4.
- 85 W.D. MacBride, "The White Pass Route," *The Beaver*, Outfit 285 (Autumn 1954), p. 21; N. Thompson and J.H. Edgar, op. cit., pp. 322–3.
- 86 S.H. Graves, op. cit., pp. 17–8.
- 87 W.D. MacBride, "Story," p. 1; *ibid.*, "The White Pass Route," *The Beaver*, Outfit 285 (Autumn 1954), p. 21; *ibid.*, "Brief History," p. 3; S.H. Graves, op. cit., pp. 18, 21; N. Thompson and J.H. Edgar, op. cit., p. 323.
- 88 W.D. MacBride, "Story," p. 2; Omer Lavallee, op. cit., p. 108.
- 89 W.D. MacBride, "Story," p. 3; N. Thompson and J.H. Edgar, op. cit., p. 324; Edward Herron, op. cit., p. 100.
- 90 S.H. Graves, op. cit., pp. 15, 19.
- 91 Cy Warman, "Building a Railroad into the Klondike," *McClure's Magazine* (March 1899) [sic], pp. 423–4, cited in USDINPS, pp. 170–2.
- 92 S.H. Graves, op. cit., p. 22.
- 93 Pierre Berton, op. cit., p. 307; *see also* n 18 above.
- 94 Canada. Parliament, *Statutes*, 60–61 Vict. cap. 89, 1896–97, p. 217; Omer Lavallee, op. cit., p. 105; Angelo Heilprin, *Alaska and the Klondike, a Journey to the New Eldorado with Hints to the Traveller* (London: Pearson, 1899), p. 22.
- 95 Adney and Berton contend that the first sternwheeler on the upper route was the *Bellingham* (E. Tappan Adney, *Klondike*, p. 389; Pierre Berton, op. cit., p. 293). Winslow cites the *A.J. Goddard* and the *J.H. Kilbourne* (Kathryn Winslow, op. cit., p. 138) while Kirk credits the *Willie Irwin* [sic] (Robert C. Kirk, op. cit., p. 218). W.D. MacBride, a former employee of the White Pass and Yukon Route and an authority on the history of the river transport in the territory, confuses the issue further by writing variously that the *Goddard*, *Irwin* (or *Irving*) and *Bellingham* each enjoyed the distinction of having been the first sternwheelers on the upper river (W.D. MacBride, "Saga of Famed Packets and other Steamboats of Mighty Yukon River," *Cariboo and Northwest Digest* [Winter 1948–Spring 1949], pp. 98, 102, 114). The first steamboat, though not a sternwheeler, on the upper river was the *Witch Hazel*, a small propeller-driven craft that was hauled over the Chilkoot Pass and run down to Cudahy in 1895 (E. Tappan Adney, *Klondike*, p. 390).
- 96 Kathryn Winslow, op. cit., p. 127; J. Goldstein, op. cit., p. 21; W.D. MacBride, "Brief History," p. 3.
- 97 Angelo Heilprin, op. cit., pp. 12, 26.
- 98 Harold Adams Innis, *Settlement*, pp. 192–3; E. Tappan Adney, *Klondike*, p. 391.
- 99 Robert C. Kirk, op. cit., p. 189.
- 100 *Ibid.*, pp. 190–1; F. King, "When Post-Dogs Brought the Mail," *Canadian Mining Journal*, Vol. 80 (Dec. 1959), pp. 57–8; Kathryn Winslow, op. cit., p. 212; E. Tappan Adney, *Klondike*, p. 183.
- 101 F. King, op. cit., p. 57; Robert C. Kirk, op. cit., pp. 194–5, 198; Kathryn Winslow, op. cit., p. 212; Arthur Treadwell Walden, op. cit., pp. 38–9.
- 102 Robert C. Kirk, op. cit., pp. 196, 205–6; Arthur Treadwell Walden, op. cit., p. 34; *Encyclopedia Canadiana*, s.v. "Dogs, Sled"; E. Tappan Adney, *Klondike*, p. 213.
- 103 "A good Malamute will sell for 150 dollars, while it must be a very superior 'outside' dog that will bring more than 100 dollars" (Jeremiah Lynch, *Three Years in the Klondike* [London: Arnold, 1904], p. 141). *See also* E. Tappan Adney, *Klondike*, pp. 209–10; *ibid.*, "The Sledge Dogs of the North," *Outing*, Vol. 39 (May 1901), p. 31.
- 104 W.H. Dall, op. cit., p. 30; Robert C. Kirk, op. cit., pp. 193–4; F. King, op. cit., p. 58; Jeremiah Lynch, op. cit., p. 77.
- 105 Robert C. Kirk, op. cit., pp. 192–4; Jeremiah Lynch, op. cit., pp. 141–2; F. King, op. cit., p. 58; Arthur Treadwell Walden, op. cit., p. 34.
- 106 E. Tappan Adney, "The Sledge Dogs of the North," *Outing*, Vol. 39 (May 1901), p. 133; Arthur Treadwell Walden, op. cit., pp. 35–7, 79; Kathryn Winslow, op. cit., p. 104; Robert C. Kirk, op. cit., p. 230.
- 107 If the driver were left-handed, the gee-pole was located on the right side.
- 108 Arthur Treadwell Walden, op. cit., pp. 36–7.
- 109 E. Tappan Adney, *Klondike*, p. 221.
- 110 Robert C. Kirk, op. cit., p. 191.
- 111 Arthur Treadwell Walden, op. cit., p. 35.
- 112 *Ibid.*, p. 34. Two other types of dog harness merit description. The Hudson's Bay style harness, like the one described above, had a padded collar. The dogs were hitched in tandem. Unlike the tracing procedure described above, however, each dog was separately hitched to the sled. W.H. Dall considered the Hudson's Bay harness to be particularly well-suited for three dogs or less because this arrangement enabled all the drawing power to be brought to bear on the load. More than three dogs produced interminable tangling (*see* W.H. Dall, op. cit., p. 170). The Eskimo harness consisted of a piece of bearskin with three long slits through which the forelegs and the

- neck of the dog were passed. The trace passed under the dog's foreleg. Eskimos and Indians usually hitched their dogs in pairs (see E. Tappan Adney, "The Sledge Dogs of the North," *Outing*, Vol. 39 [May 1901], pp. 131–2; W.H. Dall, op. cit., pp. 166, 170).
- 113 Arthur Treadwell Walden, op. cit., p. 35.
 - 114 Samuel Steele, op. cit., p. 301.
 - 115 Arthur Treadwell Walden, op. cit., pp. 36–8.
 - 116 Robert C. Kirk, op. cit., p. 195; Kathryn Winslow, op. cit., pp. 126–7.
 - 117 Robert C. Kirk, op. cit., pp. 199–201.
 - 118 Ibid., p. 203; Arthur Treadwell Walden, op. cit., p. 76.
 - 119 Robert C. Kirk, op. cit., p. 200; Arthur Treadwell Walden, op. cit., p. 81.
 - 120 F. King, op. cit., p. 57.
 - 121 Robert C. Kirk, op. cit., pp. 175–6, 208–9; E. Tappan Adney, *Klondike*, p. 430; Harold Adams Innis, *Settlement*, p. 215; Arthur Treadwell Walden, op. cit., p. 169; Kathryn Winslow, op. cit., p. 212. According to Kirk, supplies were hauled from Dawson to Eldorado for 10¢ a pound (Robert C. Kirk, op. cit., p. 210).
 - 122 Arthur Treadwell Walden, op. cit., p. 169; Robert C. Kirk, op. cit., p. 210.
 - 123 Extract of letter from William Ogilvie, Cudahy, 25 June 1896, quoted in Joseph Ladue, *Klondyke Facts*, p. 168; E. Tappan Adney, *Klondike*, p. 430; Robert C. Kirk, op. cit., p. 210.
 - 124 Kathryn Winslow, op. cit., p. 153.
 - 125 Angelo Heilprin, op. cit., p. 103; Harold Adams Innis, *Settlement*, p. 215, n 10; Jeremiah Lynch, op. cit., p. 143.
 - 126 Harold Adams Innis, *Settlement*, p. 215.
 - 127 Kathryn Winslow, op. cit., p. 157; Angelo Heilprin, op. cit., pp. 124–5, 127; Extracts from the reports of Thomas Fawcett, D.T.S., gold commissioner for the Yukon District, in Canada. Department of the Interior (hereafter cited as CDI), *Annual Report* (1897), Pt. II, p. 78.
 - 128 David Robert Morrison, op. cit., p. 63; Russell A. Bankson, *The Klondike Nugget* (Caldwell, Idaho: Claxton Printers, 1935), pp. 222–36.
 - 129 CDI, *Annual Report* (1897), Pt. II, p. 78. Heilprin, for one, suggested that the government-imposed royalty on gold production and payments in lieu of representation work be applied to road improvements (Angelo Heilprin, op. cit., p. 130).
 - 130 CDI, Northwest Territories and Yukon Branch, *The Yukon Territory; Its History and Resources* (Ottawa, 1907), pp. 99–100.
 - 131 Angelo Heilprin, op. cit., pp. 128, 132.
 - 132 Martha Louise Black, op. cit., p. 162; R. Oglesby, "The Klondike Gold Region. Account of a Six Month's Trip Through the Yukon Gold Fields," in *Alaska: Sundry Pamphlets*, n.p.
 - 133 In 1899, labourers were paid 85¢ an hour, teams \$25 a day. By 1900 these rates had declined to 80¢ and \$20 respectively, still high by outside standards (CDI, Northwest Territories and Yukon Branch, op. cit., p. 99).
 - 134 John A. Bovey, "The Attitudes and Policies of the Federal Government toward Canada's Northern Territories, 1870–1930" (MA thesis, Univ. of British Columbia, 1967), pp. 84, 85, 89; David Robert Morrison, op. cit.
 - 135 Until 1953 the North "had the lowest priority in the national scheme of things, even though it was a direct responsibility of the federal government" (J.R. Lotz, *Northern Realities: The Future of Northern Development in Canada* [Toronto: New Press, 1970], p. 12).
- ### Recession and Recovery
- 1 Pierre Berton, op. cit., pp. 412–3.
 - 2 When the writer was in Dawson and Whitehorse in August 1970, he noted a strong undercurrent of resentment toward Pierre Berton. This resentment stemmed from Berton's brief references to the post-Klondike phase of Yukon history. Many "insiders" felt that Berton had deliberately left the impression in *Klondike* that the Yukon almost ceased to exist after 1899. Like many such grievances, this one has only a partial basis in fact. See Pierre Berton, op. cit., p. 410.
 - 3 Laura Beatrice Berton, *I Married the Klondike* (Toronto: Little, Brown, 1954); Martha Louise Black, op. cit.; Walter Hamilton, op. cit.
 - 4 Canada. Dominion Bureau of Statistics, *Chronological Record of Canadian Mining Events from 1604 to 1947 and Historical Tables of the Mineral Production of Canada* (Ottawa: King's Printer, 1948) (hereafter cited as CDBS 1948), p. 92.
 - 5 David Robert Morrison, op. cit., p. 6.
 - 6 CDI, *Annual Report* (1903–04), Pt. II, p. 3; Harold Adams Innis, *Settlement*, p. 261.
 - 7 The year 1902 has been used as the terminal date of the gold rush period in this paper because after 1901 gold production, population and real estate values declined substantially, and many of the trading and transportation companies that had been formed during the gold rush withdrew from the territory.
 - 8 Pierre Berton, op. cit., p. 412.
 - 9 PAC, RG15, E1a, Vol. 3, fol. 492, F. Joslin to W.M. Morton, Dawson, 12 Jan. 1904; CDI, *Annual Report* (1903–04), Pt. VII, p. 31; J.R. Lotz, *Northern Realities: The Future of Northern Development in Canada* (Toronto: New Press, 1970), p. 48; CDI, *Annual Report* (1900–01), Pt. IX, p. 1; Pierre Berton, op. cit., p. 410.
 - 10 *The Klondike Nugget*, 14 and 15 Aug. 1900, cited in David Robert Morrison, op. cit., p. 99.
 - 11 Richard Mathews, *The Yukon* (New York: Holt, Rinehart and Winston, 1968), p. 302. "Until 1949 . . . the Lewes River . . . was considered by geographers to be a separated tributary; but it is now treated as part of the Yukon River as a whole" (*Encyclopedia Canadiana*, Vol. 6, quoted in J. Goldstein, op. cit., p. 4).
 - 12 For the former see Canada. North Pacific Planning Project, *Canada's New Northwest, a Study of the Present and Future Development of Mackenzie District of the Northwest Territories, Yukon Territory, and the Northern Parts of Alberta and British Columbia* (Ottawa: King's Printer, 1947) (hereafter cited as CNPPP), p. 107; the latter, see *Encyclopedia Canadiana*, s.v. "Yukon Field Force" and J.L. Robinson, op. cit., p. 237.
 - 13 CNPPP, p. 107. The annual precipitation in the Yukon varies between 9 and 13 inches (J.L. Robinson, op. cit., p. 250).
 - 14 CNPPP, p. 108. This phenomenon has been explained as follows: "it is almost axiomatic that any river running into the Yukon, at least in the Yukon Territory from the south and west, is a glacial fed stream, and any tributary running into the river from the north or east is a snow fed stream from the Rockies" (PAC, MG22, Commissioner, Parcel 6).
 - 15 Canada. Parliament, *Sessional Papers*, 1901, No. 28a, cited in Harold Adams Innis, *Settlement*, p. 213, n 3.
 - 16 S.H. Graves, op. cit., p. 44.
 - 17 CNPPP, p. 109.

- 18 PAC, RG15, E1a, Vol. 1, fol. 20, S.E. Adair to Commissioner of the Yukon Territory, Dawson, 21 Nov. 1899.
- 19 S.H. Graves, op. cit., p. 41.
- 20 Ibid.
- 21 Roy Minter, pers. com.; W.D. MacBride, "Story," p. 4.
- 22 S.H. Graves, op. cit., pp. 41, 45.
- 23 The three boats were the *Dawson*, *McConnell* and *Ogilvie*, which were renamed the *Dawson*, *Whitehorse* and *Selkirk* (PAC, Bill MacBride's Scrapbook, Acc. No. 1959-30 (microfilm), Wheeler to MacBride, Victoria, 27 Sept. 1949).
- 24 Omer Lavallee, op. cit., pp. 108-9; R. Dorman, op. cit., p. 635; PAC, MG30, A19, p. 19; see CNWMP, *Annual Report* (1900), Pt. III, p. 6.
- 25 CNWMP, *Annual Report* (1903), Pt. III, p. 32; see also PAC, Bill MacBride's Scrapbook, Acc. No. 1959-30 (microfilm), p. 69.
- 26 CDI, Northwest Territories and Yukon Branch, op. cit., p. 90; PAC, RG15, E1a, Vol. 1, fol. 20, F.-X. Gosselin to A.L. Berdoe, Dawson, 7 March 1907.
- 27 L.D. Kitchener, op. cit., p. 46.
- 28 Ibid., pp. 46, 111, 112. The new owners retained the name North American Transportation and Trading Company. See also W. Taylor, "Transportation in the Yukon," *Dawson Daily News*, 21 July 1909, p. 15.
- 29 The larger boats on the lower river carried up to 600 tons and could push two barges, each barge having a 400-ton capacity (CDI, Northwest Territories and Yukon Branch, op. cit., pp. 94-5; W. Taylor, op. cit., p. 15).
- 30 Langely to LeCappellain, 10 March 1904. From a collection of papers located in the attic of the old Dawson Hardware Company, Dawson, Yukon Territory.
- 31 *Canadian Grocer*, Vol. 18, No. 14 (1 April 1904), p. 42.
- 32 L.D. Kitchener, op. cit., pp. 114-5.
- 33 PAC, RG15, E1a, Vol. 17, fol. 18052; *ibid.*, commissioner of the Yukon Territory to F.W. Arnold, Dawson, 10 June 1907; CDI, *Annual Report* (1909), Pt. VI, p. 13; W. Taylor, op. cit., p. 15; CDI, Northwest Territories and Yukon Branch, *The Yukon Territory; Its History and Resources* (Ottawa: Government Printing Bureau, 1909), p. 144.
- 34 S.H. Graves, op. cit., p. 42. The author has found only one reference to the use of sidewheelers on the Yukon River and this on the lower route (see Joseph Ladue, "Life in the Klondike Gold Fields. Personal Observations of the Founder of Dawson," recorded by J. Lincoln Steffens, in *Alaska: Sundry Pamphlets*, n.p.).
- 35 S.H. Graves, op. cit., pp. 41-2.
- 36 See *ibid.*, p. 42; PAC, Bill MacBride's Scrapbook, Acc. No. 1959-30 (microfilm); CNWMP, *Annual Report* (1902), Pt. III, p. 47.
- 37 S.H. Graves, op. cit., pp. 42, 49; W.D. MacBride, "Steamboat Round the Bend," *Whitehorse Star*, Tourist ed., June 1969, p. 5; PAC, MG22, Commissioner, Parcel 30, G.A. Jeckell to J.H. Chamberlin, Dawson, 22 Dec. 1939.
- 38 Don Jones, employee of the White Pass and Yukon Corporation, personal interview, Whitehorse, 17 Aug. 1970; CNPPP, p. 113; CDI, *Annual Report* (1904-05), Pt. VII, p. 22.
- 39 W.D. MacBride, "Steamboat Round the Bend," *Whitehorse Star*, Tourist ed., June 1969, p. 5.
- 40 G.P. de T. Glazebrook, *A History of Transportation in Canada* (Toronto: McClelland and Stewart, 1964), Vol. 1, p. 40.
- 41 S.H. Graves, op. cit., p. 43.
- 42 Ibid.
- 43 PAC, Bill MacBride's Scrapbook, Acc. No. 1959-30 (microfilm), p. 70; J. Goldstein, op. cit., p. 2.
- 44 S.H. Graves, op. cit., p. 44; J. Weppler, *The S.S. Klondike, the Last Sternwheeler*, Manuscript Report Series No. 91 (Ottawa: Parks Canada, 1968) (hereafter cited as *S.S. Klondike*), p. 18.
- 45 PAC, RG15, E1a, Vol. 9, fol. 2941, W. Taylor to A. Wilson, Whitehorse, 6 July 1911.
- 46 CDI, *Annual Report* (1900), Pt. VIII, p. 3; Harold Adams Innis, *Settlement*, p. 192; PAC, RG15, E1a, Vol. 9, fol. 2941, G.B. Edwards to G.P. Mackenzie, 21 May 1924; J. Weppler, *S.S. Klondike*, p. 20.
- 47 CDI, *Annual Report* (1900), Pt. VIII, pp. 3-4; PAC, RG15, E1a, Vol. 9, fol. 2941, N. Tessier to A. Henderson, Ottawa, 31 Jan. 1910; *ibid.*, superintendent of the White Pass and Yukon Route to A. Henderson, Whitehorse, 19 Oct. 1908; Laura Beatrice Berton, op. cit., p. 213.
- 48 After 1905 the government entered into an arrangement with the British Yukon Navigation Company whereby the latter made necessary improvements. A similar arrangement was made with the Side Streams Navigation Company after 1914 (see PAC, RG15, E1a, Vol. 9, fol. 2941, superintendent of the White Pass and Yukon Route to A. Henderson, Whitehorse, 19 Oct. 1908; *ibid.*, G.A. Jeckell to A.G. Kingston).
- 49 This is not to suggest that either the Northern Navigation Company, successor to the Alaska Commercial Company, or the North American Transportation and Trading Company were comparable to those transportation companies whose sole purpose was to take advantage of the gold rush. Once the upper route gained control of traffic movement into and out of the Yukon, the Northern Navigation and North American Transportation and Trading companies found it progressively more difficult to compete and by 1914 they had withdrawn regular service to Dawson.
- 50 Edward Herron, op. cit., p. 135; Roy Minter, pers. com.; H.A. Cody, "The Gateway of the North," *Canadian Magazine*, Vol. 28 (Feb. 1907), p. 341; F.C. Wade, "A Business Talk on the Yukon," *Canadian Magazine*, Vol. 19 (May 1902), p. 27; G. Gardner, op. cit., p. 598; W.D. MacBride, "Brief History," p. 6.
- 51 N. Thompson and J.H. Edgar, op. cit., pp. 325, 326; from a collection of untitled photographs, White Pass and Yukon Corporation, Vancouver.
- 52 W.D. MacBride, "Brief History," p. 6.
- 53 Kenneth J. Rea, *The Political Economy of the Canadian North: An Interpretation of the Course of Development in the Northern Territories of Canada to the Early 1960s* (Toronto: Univ. of Toronto Press, 1968), p. 102; PAC, RG15, E1a, Vol. 18, fol. 22044, A. Berdoe to A. Henderson, Skagway, 5 Sept. 1907; *ibid.*, H. Dickson to A. Hawkins, Whitehorse, 19 Feb. 1918; Canada, *Mineral Production*, 1909, p. 39, cited in Kenneth J. Rea, op. cit., p. 102; CDI, *Annual Report* (1910), Pt. VI, p. 15.
- 54 CDI, *Annual Report* (1910), Pt. VI, p. 15; Omer Lavallee, op. cit., p. 109; PAC, MG22, Commissioner, Parcel 16, George Black to Clyde Leavette, 14 Jan. 1913; W.D. MacBride, "Brief History," p. 6; Kenneth J. Rea, op. cit., pp. 103, 106. Production figures were recorded for 1919-20 and 1925-26. After 1927 production ceased (Kenneth J. Rea, op. cit., p. 106); Omer Lavallee, op. cit., p. 109. It was not until the Japanese-controlled New Imperial Mines began extractive op-

- erations in the 1960s that the Whitehorse copper belt was again exploited.
- 55 Harold Adams Innis, *Settlement*, p. 254.
- 56 R.G. Bucksar, op. cit., p. 18. No standard exists whereby the cost of rail transport can be compared with the cost of packers, horses or boats before 1901. The railroad was completed just prior to the collapse of the gold-rush economy, therefore any comparison based on rates charged by the White Pass and Yukon Route and those charged by other operators during the rush is more apparent than real.
- 57 Harold Adams Innis, *Settlement*, p. 254; see PAC, RG15, E1a, Vol. 7, fol. 2104 for general background; David Robert Morrison, op. cit., p. 129; PAC, RG15, E1a, Vol. 7, fol. 2104, Dawson Board of Trade Resolution, 9 Nov. 1905; *ibid.*, Young Men's Liberal Club Resolution; *ibid.*, commissioner of the Yukon Territory to minister of the Interior, Dawson, 22 Nov. 1905.
- 58 See Harold Adams Innis, *Settlement*, Table 8, p. 255; Roy Minter, pers. com.; Can. Ry. Cas. 402 and 13 Can. Ry. Cas. 527 cited in W.T. Jackman, op. cit., p. 261; Harold Adams Innis, *Settlement*, p. 256. The White Pass and Yukon Route did not come under the jurisdiction of the board until 1909 (D.A. MacGibbon, *Railway Rates and the Canadian Railway Commission* [Boston: Houghton, Mifflin, 1917], p. 101).
- 59 D.A. MacGibbon, op. cit., p. 102; CDI, *Annual Report* (1912), Pt. I, p. 63. The White Pass and Yukon Route argued that if the first order had been upheld, "the railway company would have been about \$44,000 short of money to pay the interest on the outstanding bonds." The commissioners explained their reversal as follows: "while our duty to interfere and reduce rates in all proper cases is plain, surely it is equally clear that we should not require a reduction where the effect would be to prevent the investment earning a fair return" (D.A. MacGibbon, op. cit., pp. 103-4).
- 60 CDI, *Annual Report* (1912), Pt. I, p. 63.
- 61 *Ibid.*
- 62 "Klondike District" is used here to designate that geographical area defined by the Klondike River on the north, the Indian River on the south, the Yukon River on the west and Hunker and Dominion creeks on the east.
- 63 Eugene Murphy, "Railway Building and Operation in Yukon," *Dawson Daily News*, 21 July 1909, p. 23; PAC, RG15, E1a, Vol. 10, fol. 3306, "An Act to Incorporate the Klondike Mines Railway Company"; see *ibid.*, C.C. Chataway to J.H. Ross, Dawson, 16 July 1901 for locational difficulties that confronted the promoters on Bonanza Creek; Dawson Hardware Company, *Miner's Price List* (March 1903), n.p.
- 64 PAC, RG15, E1a, Vol. 10, fol. 3306, Ogilvie to minister of the Interior, Dawson, 8 March 1901; Victoria A.B. Faulkner, personal interview, Whitehorse, 11 Aug. 1970; David Robert Morrison, op. cit., p. 63; Russell A. Bankson, op. cit., pp. 222-36.
- 65 Dawson Hardware Company, *Miner's Price List* (March 1903), n.p.; Eugene Murphy, op. cit., p. 23; PAC, RG15, E1a, Vol. 10, fol. 3306, C. Kekewick to W.W.B. McInnes, Dawson, 2 Oct. 1905; *ibid.*, Davey and Tobin to W.W.B. McInnes, 12 Sept. 1905; *ibid.*, C.C. Chataway to J.H. Ross, Dawson, 16 July 1901; *ibid.*, Department of the Interior to W.W.B. McInnes, Ottawa, 29 Jan. 1906.
- 66 Omer Lavallee, op. cit., p. 110; Eugene Murphy, op. cit., p. 23; Harold Adams Innis, *Settlement*, p. 243; CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 98; H.W. Hewetson, op. cit., p. 454. There is some confusion concerning the completion date of the railway (see Alan Innes-Taylor, "Information on Old Locomotives at Dawson City, Yukon Territory," in the Dawson City Museum; PAC, RG15, E1a, Vol. 10, fol. 3306, C.W. MacPherson to secretary of the Railway Commission, Dawson, 22 Aug. 1906); PAC, RG15, E1a, Vol. 10, fol. 3306, Petition from the Klondike Mines Railway Company to Commissioner and Council of the Yukon Territory; *ibid.*, C.W. MacPherson to secretary of the Railway Commission, Dawson, 22 Aug. 1906.
- 67 CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 98; Eugene Murphy, op. cit., p. 23. The railroad also hauled large amounts of cord wood (Alan Innes-Taylor, op. cit., n.p.); PAC, RG15, E1a, Vol. 10, fol. 3306, Petition from the Klondike Mines Railway Company to Commissioner and Council of the Yukon Territory; *ibid.*, "An Ordinance to Amend Chapter 5 of the Ordinances of the Yukon Territory 1906"; PAC, MG22, Commissioner, Parcel 16, George Black to Clyde Leavette, 14 Jan. 1913; Alan Innes-Taylor, op. cit., n.p. In 1928 A.N.C. Treadgold, a pioneer in the conversion to large-scale, capital-intensive mining, acquired the property, but the railroad was not operated after 1914 (see PAC, RG15, E1a, Vol. 10, fol. 3306, G.I. MacLean to A.N.C. Treadgold, Dawson, 30 July 1928).
- 68 CDBS 1948, p. 92.
- 69 PAC, RG15, E1a, Vol. 2, fol. 280, W. Thibadeau to Z.T. Wood, Dawson, 2 Feb. 1903.
- 70 CNWMP, *Annual Report* (1902), Pt. III, p. 22.
- 71 "Roads in the Yukon," *Dawson Daily News*, 21 July 1909, p. 66.
- 72 CDI, *Annual Report* (1900), Pt. VIII, p. 3; PAC, RG15, E1a, Vol. 2, fol. 280, Ogilvie to Dugas, Dawson, 29 May 1900; "The Yukon Territory" (Ottawa [1928]), App. 2.
- 73 See PAC, RG15, E1a, Vol. 2, fol. 280, W. Thibadeau to Z.T. Wood, Dawson, 2 Feb. 1903; *ibid.*, J. McNeill to gold commissioner, Dawson, 27 Nov. 1924; "The Yukon Territory" (Ottawa [1928]), App. 2; CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 100; "Roads in the Yukon," *Dawson Daily News*, 21 July 1909, p. 66.
- 74 "The Yukon Territory" (Ottawa [1928]), App. 2; PAC, RG15, E1a, Vol. 2, fol. 280, J. McNeill to G.P. Mackenzie, Dawson, 6 April 1920; *ibid.*, W. Thibadeau to H.W. Newlands, Dawson, 28 April 1902; *ibid.*, J. McNeill to G.P. Mackenzie, Dawson, 6 April 1920.
- 75 "The Yukon Territory" (Ottawa [1928]), App. 2.
- 76 PAC, RG15, E1a, Vol. 2, fol. 280, "Yukon Territory: Road Mileage in the Yukon Territory as of March 31, 1912." Glazebrook writes that by "1913 there were some five hundred miles of good wagon roads radiating from Dawson and Whitehorse," exclusive of the Overland Trail (G.P. de T. Glazebrook, op. cit., Vol. 2, p. 246); Canada. Department of Northern Affairs and National Resources (hereafter cited as CDNANR), *A Territorial Roads Policy for the Future* (Ottawa: Queen's Printer, 1965), p. 11; see CDI, *Annual Report* (1913), Pt. I, p. 67.

- 77 "The Yukon Territory" (Ottawa [1928]), App. 2; Angelo Heilprin, op. cit., pp. 124–5. During the gold rush there was also a foot-bridge between Dawson and Klondike City (Kathryn Winslow, op. cit., p. 157); see "The Yukon Territory" (Ottawa [1928]), App. 2 for a detailed description of these roads; CDI, *Annual Report* (1900–01), Pt IX, p. 5; Victoria Faulkner, pers. com., Whitehorse, 11 Aug. 1970.
- 78 PAC, RG15, E1a, Vol. 2 fol. 280, "Statement of Roads Built in the Yukon Territory, 1902."
- 79 See F.C. Rainey, "Alaskan Highway, an Engineering Epic," *National Geographic Magazine*, Vol. 83 (Feb. 1943), p. 149.
- 80 "The Yukon Territory" (Ottawa [1928]), App. 2; PAC, MG22, Commissioner, Parcel 22, J. McNeill to A. Rousseau, Dawson, 2 Sept. 1930.
- The cable was anchored to a deadman in West Dawson and to a tower in Dawson, which was anchored in turn to a deadman near Third Avenue. The tower was 121 ft. high and the distance between the tower and its deadman was 538 ft. The span over the river was approximately 1,300 ft. The dimensions of the scow used in 1931 were 60 ft. by 14 ft. It had an eight- to nine-ton capacity. The cable was 3/4 in. in diameter. The deadmen were equipped with soft metal sheaves to reduce wear.
- The cable ferry was dismantled in 1945 because it constituted a hazard to aviation. Thereafter the river crossing was made in a ferry towed by a tunnel-type river launch (PAC, MG22, Commissioner, Parcel 8, G.A. Jeckell to acting officer commanding, North West Air Command, Edmonton, Dawson, 25 July 1944; *ibid.*, J. McNeill, telegram to L. Rogers, Dawson, 9 Jan. 1932; *ibid.*, G.A. Jeckell to W.S. Lawson, Dawson, 24 March 1945; *ibid.*, Parcel 22, J. McNeill to British Wire Company Ltd., Dawson, 6 Nov. 1931; *ibid.*, RG15, E1a, Vol. 25, fol. 35538, J.E. Gibben to R.A. Gibson, Dawson, 16 Jan. 1947).
- 81 CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 100.
- 82 Roy Minter, "An Historical Sketch of the Yukon Territory," in YNRC-2, p. 13.
- 83 Information on Mayo and Whitehorse district roads has been culled from the annual statements on road construction prepared by the territorial government (PAC, RG15, E1a, Vol. 2, fol. 280). Confusion results from the fact that the names of various settlements in the Yukon often bear the same names as creeks to which they are not contiguous and there is seldom any reference in the statements to which is which. Extrapolation is exacerbated, moreover, because mileage figures are frequently not given.
- 84 CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 96.
- 85 Yukon Territory, *Yukon Local Ordinances*, Ordinance No. 12 of 1899; Walter Hamilton, op. cit., p. 97; W.D. MacBride, "Yukon Stage" (W.P. & Y.R. No. 5, n.d.) (hereafter cited as "Stage"), p. 1; *ibid.*, "Story," p. 4.
- 86 CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 96; W.D. MacBride, "Stage," p. 1; *ibid.*, "Yukon Stage Line," *The Beaver*, Outfit 284 (June 1953), p. 43; PAC, RG15, E1a, Vol. 2, fol. 280, Thibadeau to J.H. Ross, Dawson, 6 June 1902; W.D. MacBride, "Brief History," p. 7.
- 87 W.D. MacBride, "Stage," pp. 1–2; Walter Hamilton, op. cit., p. 102.
- 88 W.D. MacBride, "Yukon Stage Line," *The Beaver*, Outfit 284 (June 1953), p. 43; CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 96.
- 89 "The road north of the Pelly was changed to go via Scroggie and Blackhills, and later on when Mayo on the Stewart River became a busy mining camp the road branched off at Minto, crossed the Pelly below Mica Creek and joined the Stewart River at Crooked Creek. A branch ran from that point to Mayo, and the Dawson City road followed the Stewart River for some distance, thence up Slough Creek valley and down Flat Creek into Klondike valley" (W.D. MacBride, "Stage," p. 2).
- 90 *Ibid.*, p. 1; Laura Beatrice Berton, op. cit., p. 38; PAC, RG15, E1a, Vol. 2, fol. 280, W. Thibadeau to Z.T. Wood, Dawson, 2 Feb. 1903.
- 91 CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 96; W.D. MacBride, "Brief History," p. 7; *ibid.*, "Stage," p. 3; Walter Hamilton, op. cit., p. 99; Edward McCourt, *The Yukon and Northwest Territories* (Toronto: Macmillan, 1969), p. 31.
- 92 Walter Hamilton, op. cit., p. 99; W.D. MacBride, "Yukon Stage Line," *The Beaver*, Outfit 284 (June 1953), p. 43.
- 93 W.D. MacBride, "Brief History," p. 8; Walter Hamilton, op. cit., p. 99; Laura Beatrice Berton, op. cit., p. 108.
- 94 Laura Beatrice Berton, op. cit., p. 108. In addition to its passenger service, the White Pass and Yukon Route operated special freight sleds between Whitehorse and Dawson (CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* [Ottawa: Government Printing Bureau, 1907], p. 97).
- 95 Martha Louise Black, op. cit., p. 217. "In the latter days of stage operation drivers did not leave a post if the temperature was colder than 40 below zero, but many times it would be 50 or 60 below before they reached the next post" (W.D. MacBride, "Brief History," p. 8); H. Bostock, "A Sketch of Road Development in the Yukon Territory," *Arctic Circular*, Vol. 3 (Dec. 1950), p. 64.
- 96 Laura Beatrice Berton, op. cit., pp. 112–3. Bostock writes that the roadhouses on the Overland Trail were large two-storey log structures with sloping gable roofs covered with dirt to keep out the cold (H. Bostock, op. cit., p. 64).
- 97 In 1909 the territorial government constructed a series of roadhouses on the Mayo trail between Barlow and Mayo. They were 13 ft. by 24 ft. with an 8-ft. clear ceiling in the front and 6-ft. clear ceiling in the rear. The roofs consisted of poles covered with moss and dirt with two ridge poles for support. The roadhouses were partitioned in the centre and equipped with two bunks and a stove. The floor was made of poles. There was one window "put in the most convenient place." Each roadhouse was banked (PAC, RG15, E1a, Vol. 1, fol. 182, W.R. Edwards to commissioner, Dawson, 12 June 1909).
- 98 Laura Beatrice Berton, op. cit., p. 113; Yukon Territory, *Yukon Local Ordinances*, "An Ordinance Respecting Roadhouses," 30 Aug. 1907.
- 99 CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Government Printing Bureau, 1907), p. 96; Walter Hamilton, op. cit., p. 103.
- 100 W.D. MacBride, "Brief History," pp. 7–9; *ibid.*, "Stage," p. 5; Walter Hamilton, op. cit., pp. 99, 101.

- 101 H.J. Woodside, "Dawson As It Is," *Canadian Magazine*, Vol. 17 (Sept. 1901), p. 411.
- 102 R.A.J. Phillips, op. cit., p. 145; Harold Adams Innis, *Settlement*, p. 215; CDI, *Annual Report* (1913), Pt. I, p. 66; *ibid.* (1914), Pt. I, p. 64; *ibid.* (1915), Pt. I, p. 58; Walter Hamilton, op. cit., p. 104. See CDI, *Annual Report* (1915), Pt. I, p. 58, for the effect of these improvements on mail service.
- 103 Between 1900 and 1914 (see PAC, RG15, E1a, Vol. 2, fol. 280, "Abstract Statement Showing Joint Expenditures of the Department of Interior and Yukon Government on Construction of Roads, 1902–1903"); PAC, MG22, Commissioner, Parcel 5, fol. 261.
- 104 CDI, *Annual Report* (1900), Pt. VIII, p. 3. A comparison of rates, 1899 and 1903, is revealing:

District	Tons	1899		1900		Net Gain to Operator
		Rate	Amount	Rate	Amount	
Bonanza	4,500	\$140	\$630,000	\$20	\$90,000	\$540,000
Hunker	3,750	160	600,000	30	112,500	487,000
Dominion	3,000	250	750,000	40	120,000	630,000
Gold Run	2,250	360	810,000	60	135,000	675,000
Sulphur	1,500	250	375,000	40	60,000	315,000
Total	15,000		\$3,165,000		\$517,500	\$2,647,000

See CDI, Northwest Territories and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: Printing Bureau, 1907), p. 101. It must be emphasized that these statistics do not account for the extreme inflationary pressures which existed in 1899 and are useful only as an indication of the savings resulting from the construction of roads.

- 105 CDI, *Annual Report* (1902), Pt. VII, p. 3.
- 106 Canada. Parliament, *Sessional Papers*, 1902, No. 33a, cited in Harold Adams Innis, *Settlement*, p. 218.
- 107 *Ibid.*; Victoria Faulkner, pers. com.
- 108 CDI, *Annual Report* (1902–03), Pt. IV, p. 16.

Between the Wars

- 1 PAC, MG30, H43, George Black, "Striking Gold in Klondyke . . . Was My Greatest Hour," *John Bull*, 24 Dec. 1932.
- 2 Donald V. Smiley, ed., *Rowell-Sirois Commission Report* (Toronto: McClelland and Stewart, 1963), pp. 108–37.
- 3 CDBS 1948, p. 92.
- 4 CDI, *Annual Report* (1918–19), Pt. I, p. 28.
- 5 Canada. Department of Mines. Mines Branch (hereafter cited as CDM), *Summary Report* (1916), p. 157.
- 6 Canada. Parliament. House of Commons, *Debates*, 20 June 1917, p. 2481; see also *ibid.*, p. 2571.
- 7 Francis Cunynghame, *Lost Trail, the Story of Klondike Gold and the Man who Fought for Control* (London: Faber & Faber, 1953), p. 69.
- 8 PAC, RG85, Vol. 596, fol. 1190–2, Reid to Finnie, Dawson, 18 April 1925.
- 9 See Francis Cunynghame, op. cit., pp. 98–141.

- 10 CDBS 1948, p. 92. See also Canada. Dominion Bureau of Statistics, *Report of Mineral Production of Canada* (hereafter cited as CDBS, *Mineral Production*) (Ottawa: King's Printer, 1925), p. 157. In 1929 gold production accounted for only 29 per cent of the total value of mineral production in the Yukon (CDBS, *Mineral Production* [Ottawa: King's Printer, 1929], p. 69). A qualification is in order concerning the above comparison of Klondike and Mayo district production figures. CDBS 1948 does not provide a regional breakdown (within the Yukon) of production statistics. Since the Klondike district was the principal gold-producing region and the Mayo district the main silver-lead-producing region in the territory, the author has treated gold production as synonymous with the Klondike and silver-lead production as synonymous with the Mayo district.
- 11 Kenneth J. Rea, op. cit., Table 11.12, p. 438.
- 12 The disaster claimed 350 lives, 125 from Dawson alone. "There was hardly a family that was not hit in some way. The Yukon Gold Company, the Northern Commercial, the government service, the steamboats, all were shattered by the wreck of the *Sophia*. The crews of twelve river steamers, including three captains, went down with her . . . her passenger list had been a faithful cross-section of Dawson's polyglot population" (Laura Beatrice Berton, op. cit., pp. 165–6).
- 13 *Ibid.*, pp. 162, 164, 180.
- 14 *Ibid.*, p. 164; *Dawson Daily News*, 14 July 1916; PAC, RG15, E1a, Vol. 1, fol. 20, G.B. Edwards to G.P. Mackenzie, Dawson, 19 Feb. 1918; Victoria Faulkner, pers. com.
- 15 Laura Beatrice Berton, op. cit., p. 163; CDBS 1948, p. 92. Some of the finest homes in Dawson are abandoned because it is too expensive to service them.
- 16 L. Wernecke, "Glaciation, Depth of Frost, and Ice Veins of Keno Hill and Vicinity, Yukon Territory," *Engineering and Mining Journal*, Vol. 133 (Jan. 1932), p. 38.
- 17 The first silver-lead deposit was discovered by H.W. McWhorter in 1906 at Galena Creek. In 1912 McWhorter's original claim was relocated as the Silver King claim and 59 tons of hand-sorted ore were shipped to the smelter at Trail, B.C. (A.E. Pike, *Souvenir Brochure of the Yukon Territory* [Mayo Branch CIM and United Keno Hill Mines, 1957], pp. 16–7); see also Kenneth J. Rea, op. cit., pp. 103–4.
- 18 Keno Hill Ltd., established in 1920, and Treadwell Yukon Company Ltd., formed in 1921 (A.E. Pike, op. cit., pp. 17–8; Kenneth J. Rea, op. cit., p. 106); H.S. Bostock, comp., *Yukon Territory: Selected Field Reports of the Geological Survey of Canada, 1898–1933* (Ottawa: Queen's Printer, 1957) (hereafter cited as *Yukon Territory*), pp. 98–9; a number of smaller operators were engaged in lode mining in the Mayo district, but all were dependent in one way or another on the facilities provided by Treadwell Yukon; CDBS 1948, p. 92. Wages and salaries in the silver-lead industry exceeded those of the Klondike district as well (see CDBS, *Mineral Production* [Ottawa: King's Printer, 1927], p. 94, and *ibid.* [1929], p. 69).
- 19 PAC, RG15, E1a, Vol. 1, fol. 20, G.B. Edwards to G.P. Mackenzie, Dawson, 19 Feb. 1918.
- 20 For example, the Whitehorse copper industry.
- 21 PAC, RG85, Public Archives Record Centre (hereafter cited as PARC), No. 426, J.S. McNeill, "Transportation in the Yukon Territory" [1923].
- 22 Quoted in Kenneth J. Rea, op. cit., p. 24.

- 23 PAC, MG22, Commissioner, Parcel 6, Yukon Development League, night letter to Arthur Meighen, Dawson, 31 March 1921; Canada. Parliament. House of Commons, *Debates*, 8 June 1920, p. 3281; *ibid.*, 21 April 1922, p. 1034; *ibid.*, 19 March 1914, p. 1833.
- 24 PAC, MG22, Commissioner, Parcel 6, Yukon Development League, night letter to Arthur Meighen, Dawson, 31 March 1921; Kenneth J. Rea, *op. cit.*, p. 58; PAC, RG15, E1a, Vol. 2, fol. 280, G.P. Mackenzie to deputy minister, Department of the Interior, Dawson, 28 April 1922.
- 25 Canada. Parliament. House of Commons, *Debates*, 21 April 1922, p. 1034.
- 26 *Mayo-Keno Bulletin*, 27 June 1924.
- 27 "The Yukon Territory" (Ottawa [1928]). Between 1898 and 1921 the government spent more than \$3 million on territorial roads, bridges and ferries outside of Dawson and Whitehorse (PAC, RG15, E1a, Vol. 2, fol. 280, J. McNeill to gold commissioner, Dawson, 9 March 1922).
- 28 PAC, RG85, PARC No. 476, fol. 6148, G.I. MacLean to R.A. Gibson, Dawson, 17 Dec. 1928; PAC, RG15, E1a, Vol. 2, fol. 280, "Summary of Road Work in the Mayo District, 1925"; PAC, RG85, Vol. 596, fol. 1190-2, Reid to Finnie, Dawson, 18 April 1925.
- 29 PAC, RG85, Vol. 596, fol. 961, Mayo Board of Trade, telegram to minister of the Interior, Mayo, 3 April 1922; *ibid.*, Finnie, memorandum to W.W. Cory, 24 April 1922; PAC, RG15, E1a, Vol. 2, fol. 280, "Memorandum re: Mayo District Expenditures, 1926-27."
- 30 PAC, RG85, PARC No. 426, J.S. McNeill, "Transportation in the Yukon Territory" [1923].
- 31 CDI, Mining Lands and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: King's Printer, 1916), p. 196.
- 32 PAC, RG85, PARC No. 426, J.S. McNeill, "Transportation in the Yukon Territory" [1923].
- 33 H.S. Bostock, comp., *Yukon Territory*, p. 401. Kenneth J. Rea has written erroneously (*op. cit.*, p. 31) that "the cost of transporting ore from Mayo to San Francisco was approximately twenty-two dollars per ton, of which almost twenty dollars per ton was attributable to the first twenty miles it had to be moved from the mines to the river!"
- 34 H.S. Bostock, comp., *Yukon Territory*, p. 401.
- 35 Canada. Parliament, *Statutes*, 11-12 Geo. V, cap. 67, 1921; RG15, E1a, Vol. 10, fol. 3306, H.B. Iseman, night letter to Arthur Meighen, Dawson, 12 Jan. 1921. *See also* PAC, MG22, Commissioner, Parcel 6, Yukon Development League, night letter to Arthur Meighen, Dawson, 31 March 1921; PAC, MG22, Commissioner, Parcel 6, "An Act to Incorporate The Mayo Valley Railway, Limited."
- 36 CDBS, *Mineral Production* (Ottawa: King's Printer, 1922), p. 167. *See also* H.S. Bostock, comp., *Yukon Territory*, p. 509.
- 37 PAC, RG85, PARC No. 431, fol. 4071, "Sub-Mining Recorder's Report, Mayo, 1923"; *ibid.*, PARC No. 426, J.S. McNeill, "Transportation in the Yukon Territory" [1923].
- 38 PAC, RG85, PARC No. 426, J.S. McNeill, "Transportation in the Yukon Territory" [1923]; *ibid.*, PARC No. 431, fol. 4071, "Mining Recorder's Annual Report for the Mayo Mining District for the Year Ending February 28, 1927"; "The Yukon Territory" (Ottawa [1928]).
- 39 The plant did not commence operation until January 1925.
- 40 PAC, RG85, PARC No. 431, fol. 4071, "Mining Recorder's Report, Mayo Mining District, 1924"; *ibid.*, PARC No. 423, fol. 3729, Rowatt to deputy minister, Department of the Interior, Ottawa, March 1927.
- 41 CDBS, *Mineral Production* (Ottawa: King's Printer, 1924), p. 158. Concentration also permitted the mining of lower grade ore, thereby increasing the field of workable deposits (H.S. Bostock, comp., *Yukon Territory*, p. 402).
- 42 Residents of the Mayo district petitioned the government to designate Mayo Landing as a port of entry as early as 1922 because of the delays in the delivery of supplies. The absence of a port of entry compelled Mayo companies to keep authorized agents in Whitehorse. These agents were unable to cope with a number of difficulties that arose such as outside shippers mailing invoices direct to the consignee at Mayo while goods were held over at Whitehorse. Without an invoice goods could not be cleared and forwarded (*see* PAC, RG85, PARC No. 423, fol. 3729, G. Coffey to O.S. Finnie, Dawson, 18 Dec. 1922).
- 43 *ibid.*, PARC No. 435, fol. 4402, Wernecke to MacLean, Wernecke, 27 Feb. 1930; between 1921 and 1930 Treadwell Yukon spent \$157,518.80 on roads (*ibid.*, Wernecke to Gillespie, Wernecke, 25 Feb. 1930); *ibid.*, Wernecke to MacLean, Wernecke, 5 April 1930.
- 44 *ibid.*, memorandum to R.A. Gibson, Ottawa, 1 May 1930.
- 45 Laura Beatrice Berton, *op. cit.*, p. 154.
- 46 Spring of 1921 (W.D. MacBride, "Story," p. 4); Walter Hamilton, *op. cit.*, p. 97; Canada. Parliament. House of Commons, *Debates*, 28 April 1921, p. 2687; R.G. Woodall, *op. cit.*, Ch. 15, p. 5.
- 47 CDI, *Annual Report* (1915), Pt. I, p. 58; CDI, Mining Lands and Yukon Branch, *The Yukon Territory: Its History and Resources* (Ottawa: King's Printer, 1916), p. 196.
- 48 Yukon Territory, *Ordinances of the Yukon Territory*, Ch. 9, 1911; *ibid.*, Ch. 8, 1912; *ibid.*, Ch. 11, 1913; H. Bostock, "A Sketch of Road Development in the Yukon Territory," *Arctic Circular*, Vol. 3 (Dec. 1950), p. 66.
- 49 The modification was done between 1922 and 1924 (PAC, RG15, E1a, Vol. 25, fol. 35538, G.A. Jeckell to R.A. Gibson, Dawson, 22 July 1946 and CDI, Northwest Territories and Yukon Branch, *The Yukon Territory* [Ottawa: King's Printer, 1926], p. 75).
- 50 "The Yukon Territory" (Ottawa [1928]).
- 51 PAC, RG85, PARC No. 426, J.S. McNeill, "Transportation in the Yukon Territory" [1923]; CDI, Northwest Territories and Yukon Branch, *The Yukon Territory* (Ottawa: King's Printer, 1926), p. 75; *Mayo-Keno Bulletin*, 21 March 1924; PAC, MG30, H43, Martha Black, "No Place for a Cheechako," *The Nomad* (Aug. 1927), n.p.; *Mayo-Keno Bulletin*, 2 March 1925.
- 52 "The Yukon Territory" (Ottawa [1928]); CDI, *The Yukon Territory: Its History and Resources* (Ottawa: King's Printer, 1916), p. 195; CDI, Northwest Territories and Yukon Branch, *The Yukon Territory* (Ottawa: King's Printer, 1926), p. 75; PAC, RG15, E1a, Vol. 25, fol. 35538, G.A. Jeckell to R.A. Gibson, Dawson, 15 April 1946.
- 53 *See* Kenneth J. Rea, *op. cit.*, Table 4.8, p. 400; CDBS 1948, p. 92; quoted in H.S. Bostock, comp., *Yukon Territory*, pp. 611-2.
- 54 H.S. Bostock, comp., *Yukon Territory*, p. 612.
- 55 A.E. Pike, *op. cit.*, p. 19; CDBS 1948, p. 92; H.S. Bostock, comp., *Yukon Territory*, pp. 647-8.
- 56 J.R. Lotz, *The Dawson Area: A Regional Monograph* (Ottawa: Department of Indian Affairs and Northern Development, Northern Co-ordination Research Centre, n.d.) (hereafter cited as *Dawson*), p. 83. The previous price was \$30 an ounce.
- 57 Francis Cunynghame, *op. cit.*, pp. 119-36.

- 58 Excepting 1937 (see CDBS 1948, p. 92).
- 59 Canada. Department of Mines and Resources, *Annual Report* (Ottawa: King's Printer, 1937–38), p. 75.
- 60 PAC, MG30, H43; Kenneth J. Rea, op. cit., p. 232.
- 61 PAC, RG85, PARC No. 420, fol. 3019; CDI, *The Yukon Territory; Its History and Resources* (Ottawa: Government Printing Bureau, 1909), p. 144; *ibid.* (Ottawa: King's Printer, 1916), p. 200; PAC, RG85, PARC No. 407, fol. 2454, Rowatt to Marchand, Ottawa, 22 April 1914; H.S. Bostock, comp., *Yukon Territory*, pp. 382–3; PAC, RG15, E1a, Vol. 1, fol. 20, G.B. Edwards to G.P. Mackenzie, Dawson, 19 Feb. 1918.
- 62 PAC, RG85, PARC No. 426, fol. 3787; CDI, Northwest Territories and Yukon Branch, *The Yukon Territory* (Ottawa: King's Printer, 1926), p. 73; PAC, MG30, H46, H. Bostock, ed., "A History of Russell Creek, Yukon Territory," MS (taken from diaries, books and writings of Lt. Col. N.A.D. Armstrong).
- 63 The year 1921 has been selected because Treadwell Yukon was established in that year. Large-scale production as well began in 1921 (see CDBS 1948, p. 92).
- 64 PAC, RG85, PARC No. 406, fol. 2320, G.P. Mackenzie to O.S. Dawson, 18 Oct. 1923.
- 65 R. Minter to G. Bennett, Vancouver, 25 Oct. 1971.
- 66 CDBS, *Mineral Production* (Ottawa: King's Printer, 1921), p. 160.
- 67 PAC, RG15, E1a, Vol. 1, fol. 20, Edwards to Mackenzie, Dawson, 19 Feb. 1918.
- 68 Canada. Department of Indian and Northern Affairs. National Historic Parks and Sites Branch, Correspondence file 10–163, C.J. Rogers to J. Wepler, Seattle, 13 Nov. 1967; H.S. Bostock, comp., *Yukon Territory*, p. 509.
- 69 PAC, RG85, PARC No. 426, fol. 3787, H. Wheeler to O.S. Finnie, Seattle, 21 Feb. 1924; J.L. Robinson, op. cit., p. 240; W.D. MacBride, "Trail of '98," *Cariboo and Northwest Digest* (Summer 1948), pp. 116–7.
- 70 PAC, RG85, PARC No. 426, fol. 3787, W.D. Gordon, "Transportation in Yukon Territory"; *ibid.*, PARC No. 406, fol. 2320; *ibid.*, RG15, E1a, Vol. 1, fol. 20, Edwards to Mackenzie, Dawson, 29 May 1924.
- 71 CDBS, *The Canada Year Book* . . . (Ottawa: Queen's Printer, 1965), p. 6; J.L. Robinson, op. cit., p. 252.
- 72 CNPPP, p. 109; J.L. Robinson, op. cit., p. 252; J. Wepler, S.S. *Klondike*, p. 11.
- 73 J.L. Robinson, op. cit., p. 252; Canada. Department of Indian and Northern Affairs. National Historic Parks and Sites Branch, Correspondence file 10–163, P.C. Ferguson to J.D. Herbert, Whitehorse, 22 Jan. 1962; Gauvin's notes on sternwheelers, n.p.; PAC, RG85, PARC No. 426, fol. 3787, Wheeler to Finnie, Seattle, 21 Feb. 1924; *ibid.*, PARC No. 467, fol. 5845, Gibson to Cory, Vancouver, 13 July 1928.
- 74 PAC, RG15, E1a, Vol. 9, fol. 2941, Edwards to Mackenzie, Dawson, 23 Sept. 1922; *ibid.*, J.P. Forde to commissioner, Victoria, 21 Aug. 1922; *ibid.*, "Sketch Plan of Stewart River, Y.T. Showing Improvement Work Done, 1922–23"; *ibid.*, Edwards to Mackenzie, Dawson, 14 Nov. 1923.
- 75 *ibid.*, F. Carscallen to MacLean, Mayo, 30 Aug. 1929; *ibid.*, McNeill to Maclean, Dawson, 9 Nov. 1929; CDI, Mining Lands and Yukon Branch, *The Yukon Territory; Its History and Resources* (Ottawa: King's Printer, 1916), p. 200; PAC, RG15, E1a, Vol. 9, fol. 2941, McNeill to Jeckell, Mayo, 31 March 1935.
- 76 PAC, RG15, E1a, Vol. 9, fol. 2941, Wheeler to Black, Skagway, 21 Aug. 1916.
- 77 PAC, MG22, Commissioner, Parcel 6; CNPPP, p. 109.
- 78 H. Wheeler to Godfrey L. Cabot, Inc., 31 Oct. 1942.
- 79 Don Jones, employee of the White Pass and Yukon Corporation, personal interview, Whitehorse, 17 Aug. 1970; *Dawson News*, 8 Oct. 1928; PAC, RG15, E1a, Vol. 9, fol. 2941, Forde to Cameron, Victoria, 9 Nov. 1927.
- 80 "The Yukon Territory" (Ottawa [1928]).
- 81 PAC, RG85, PARC No. 467, fol. 5845, MacLean to Cory, Dawson, 20 June 1929; *ibid.*, deputy minister, Department of Public Works to Cory, Ottawa, 20 July 1929.
- 82 "The Yukon Territory" (Ottawa [1928]).
- 83 PAC, RG85, PARC No. 467, fol. 5845, Gibson to Cory, Vancouver, 13 July 1929.
- 84 J. Wepler, S.S. *Klondike*, p. 11.
- 85 *ibid.*, p. 12; Rogers to Wepler, Seattle, 13 Nov. 1967.
- 86 Gauvin's notes on sternwheelers; Rogers to Wepler, 13 Nov. 1967.
- 87 J. Wepler, S.S. *Klondike*, p. 12; Don Jones, pers. com.; Alan Fraser, former employee of the White Pass and Yukon Corporation, personal interview with J. Wepler, 21 Nov. 1967.
- 88 CDBS 1948, p. 92; Don Jones, pers. com.
- 89 PAC, RG85, PARC No. 435, fol. 4402; nevertheless plans for expansion and rebuilding of the labour camps in the Mayo district had to be postponed (*ibid.*, Kenneth J. Rea, op. cit., p. 115); CNPPP, p. 111; John Gillis, radio script, "White Pass History," p. 10.
- 90 PAC, RG85, Acc. 69/180, Box No. 155711, fol. 6663, Rowatt to Finnie, Ottawa, 26 Nov. 1923.

91 *Tonnage of Freight Handled*

	1928	1939
Whitehorse-Dawson	4,107	5,871
Mayo-Whitehorse	8,799	11,012

Source PAC, RG85, PARC No. 476, fol. 6148, Wheeler to Finnie, Seattle, 8 Nov. 1928; CNPPP, p. 112.

92 J. Wepler, S.S. *Klondike*, pp. 9–10.

93 Kenneth J. Rea, op. cit., p. 194. The following table compares the percentage cost of supplies and stock on hand (inventories) to total capital invested in three regional silver-lead-zinc industries. Source CDBS, *Mineral Production* (Ottawa: King's Printer, 1922), p. 168.

	1921	1922
Quebec	01.46	
British Columbia	02.68	01.65
Yukon	52.40	08.04

94 Kenneth J. Rea, op. cit., p. 121; "The Yukon Territory" (Ottawa [1928]); 1929 was a record production year in the lode mining industry (Yukon) (see CDBS 1948, p. 92); PAC, RG85, PARC No. 467, fol. 5845, MacLean to McKeand, Dawson, 7 Aug. 1929.

- 95 G.P. de T. Glazebrook, op. cit., Vol. 2, p. 258; J.A. Wilson, "The Expansion of Aviation Into Arctic and Sub-Arctic Canada," *Canadian Geographical Journal*, Vol. 31 (Sept. 1950), pp. 130–41.
- 96 Kenneth J. Rea, op. cit., p. 210.
- 97 F.H. Ellis, "Call It Re-Conquest," *Canadian Aviation*, Vol. 17 (May 1944), pp. 47–8, 94, 96.
- 98 PAC, MG22, Commissioner, Parcel 6.
- 99 F.H. Ellis, *Canada's Flying Heritage* (Toronto: Univ. of Toronto Press, 1954) (hereafter cited as *Heritage*), pp. 197–264; J.A. Wilson, op. cit., p. 134.
- 100 PAC, MG22, Commissioner, Parcel 6, Cruickshank to Reid, Keno, "4/9/26"; *Whitehorse Star*, 25 March 1938; F.H. Ellis, "The Flying Cruickshanks," *Canadian Aviation*, Vol. 27 (March 1954), pp. 26–7.
- 101 Jeanne Harbottle, "Bush Flying in the Yukon Territory," *Whitehorse Star*, Tourist ed., Summer 1970, p. 18; PAC, RG85, PARC No. 435, fol. 4402, Wernecke to Finnie, Mayo, 25 Feb. 1928; F.H. Ellis, *Heritage*, p. 242; PAC, MG22, Commissioner, Parcel 16, G.A. Jeckell, "Notes on History of Air Service in the Yukon Territory"; *Dawson Weekly News*, 6 Dec. 1929; PAC, RG85, PARC No. 488, fol. 6670, MacLean to Finnie, Dawson, 23 May 1930; *ibid.*, Binet, Carpenter, Finnegan, Ferrel, McKay, telegram to minister of the Interior, Mayo, 6 Nov. 1929; *ibid.*, ? to Binet, Ottawa, 14 Dec. 1929.
- 102 PAC, MG22, Commissioner, Parcel 38, MacLean to Finnie, Dawson, 7 May 1928.
- 103 PAC, RG85, PARC No. 476, fol. 6148, MacLean to Finnie, Dawson, 23 Oct. 1928; *ibid.*, MG22, Commissioner, Parcel 6, Desbarats to Finnie, Ottawa, 12 Oct. 1929; *ibid.*, RG85, Acc. 69/180, Box No. 155711, fol. 6663; *ibid.*, PARC No. 435, fol. 4402, Finnie, memorandum to Gibson, 28 Sept. 1929; *ibid.*, Wernecke to Gillespie, Wernecke, 5 March 1930; *ibid.*, MG30, H43.
- 104 PAC, RG85, PARC No. 435, fol. 4402, Wernecke to Finnie, Mayo, 25 Feb. 1928; *ibid.*, MG22, Commissioner, Parcel 16, G.A. Jeckell, op. cit.; *ibid.*, RG85, PARC No. 476, fol. 6148, MacLean to Finnie, Dawson, 23 Oct. 1928; *Whitehorse Star*, 25 March 1938; *Dawson Weekly News*, 12 Oct. 1928.
- 105 PAC, RG85, PARC No. 488, fol. 6670, MacLean to Finnie, Dawson, 23 May 1930; *ibid.*, Finnie, memorandum to Gibson, 9 Nov. 1929; R.G. Woodall, op. cit., Ch. 18, p. 6; Jeanne Harbottle, op. cit., p. 18; PAC, RG85, PARC No. 435, fol. 4402, Wernecke to Finnie, 28 Feb. 1928; *see also ibid.*, Finnie to Wilson, Ottawa, 2 April 1930.
- 106 PAC, MG22, Commissioner, Parcel 16, G.A. Jeckell, op. cit.; *ibid.*, Parcel 38, MacLean to Cory, Dawson, 11 Dec. 1928; *ibid.*, Parcel 6, Wernecke to MacLean, Mayo, 22 Nov. 1928.
- 107 CDI, *Annual Report* (1929–30), p. 155; PAC, MG22, Commissioner, Parcel 16, Jeckell to Gibson, Dawson, 19 Nov. 1945; *ibid.*, Parcel 6, Wernecke to MacLean, Mayo, 22 Nov. 1928.
- 108 Jeanne Harbottle, op. cit., p. 19; PAC, RG85, PARC No. 476, fol. 6148, Narraway, memorandum to Gibson, Ottawa, 6 Nov. 1928.
- 109 PAC, MG22, Commissioner, Parcel 6, Wernecke to MacLean, 22 Nov. 1928; "The Yukon Territory" (Ottawa [1928]); PAC, MG22, Commissioner, Parcel 6, Wernecke to MacLean, Mayo, 4 Aug. 1928.
- 110 PAC, MG22, Commissioner, Parcel 6, Wernecke to MacLean, Mayo, 22 Nov. 1928; *see also ibid.*, RG85, PARC No. 435, fol. 4402, Black to Stewart, Vancouver, 16 Sept. 1929.
- 111 *ibid.*, MG22, Commissioner, Parcel 6, Wernecke to MacLean, Mayo, 27 Nov. 1928.
- 112 Jeanne Harbottle, op. cit., p. 19.
- 113 PAC, MG22, Commissioner, Parcel 6, Wernecke to MacLean, Wernecke, 21 Dec. 1929.
- 114 F.H. Ellis, "The Flying Cruickshanks," *Canadian Aviation*, Vol. 27 (March 1954), p. 26.
- 115 PAC, MG22, Commissioner, Parcel 16, G.A. Jeckell, op. cit.; Jeanne Harbottle, op. cit., p. 18.
- 116 *Whitehorse Star*, 25 March 1938.
- 117 Richard Finnie, "Flying Beyond Sixty, Part III," *Canadian Aviation*, Vol. 12 (April 1939), pp. 24–5.
- 118 J.F. Grant, "North to the Yukon by Air," *Canadian Geographical Journal*, Vol. 15 (Aug. 1937), p. 75; Richard Finnie, op. cit., p. 25; CNPPP, p. 129.
- 119 PAC, MG22, Commissioner, Parcel 16, "List of Airport and Emergency Landing Fields, Yukon Territory."
- 120 *ibid.*, Parcel 6.
- 121 *Whitehorse Star*, 25 March 1938.
- 122 PAC, RG15, E1a, Vol. 22, fol. 33787.
- 123 F.H. Ellis, *Heritage*, p. 318.
- 124 *ibid.*, p. 242; F.H. Ellis, "The Flying Cruickshanks," *Canadian Aviation*, Vol. 27 (March 1954), p. 96.
- 125 *Whitehorse Star*, 25 March 1938; PAC, RG85, PARC No. 488, fol. 6670, Finnie, memorandum to Gibson, 9 Nov. 1929.
- 126 PAC, MG22, Commissioner, Parcel 38, MacLean to Cory, Dawson, 11 Dec. 1928.
- 127 *ibid.*, Parcel 6, Wernecke to MacLean, Mayo, 22 Nov. 1928.
- 128 F.H. Ellis, *Heritage*, pp. 192, 322; Richard Finnie, op. cit., p. 24; PAC, RG15, E1a, Vol. 24, fol. 34932, Jeckell to Clarke, Dawson, 7 July 1937; *Daily Alaska Empire*, Juneau, 3 May 1939; J.A. Wilson, op. cit., p. 138; W.D. MacBride, "Brief History," p. 9.
- 129 J.F. Grant, op. cit., p. 75.
- 130 CNPPP, p. 129.
- 131 PAC, RG15, E1a, Vol. 1, fol. 20, Edwards to Mackenzie, Dawson, 19 Feb. 1918; "The Yukon Territory" (Ottawa [1928]); CNPPP, p. 112. Silver-lead production was at peak levels in 1928 and 1939, exceeded only by production in 1929 and 1937 (CDBS 1948, p. 92); Roy Minter, pers. com.
- 132 Walter Hamilton, op. cit., pp. 90–1; CNPPP, p. 112; N. Thompson and J.H. Edgar, op. cit., p. 324; PAC, RG85, PARC No. 467, fol. 5845, Gibson to Cory, Vancouver, 13 July 1928; Frank H. Brown, "Address," p. 3, in Whitehorse Chamber of Commerce and Yukon Chamber of Mines, Yukon Northern Resource Conference, 3rd, *The Developing North* (Whitehorse, 1969) (hereafter cited as YNRC-3).
- 133 Roy Minter, pers. com.; *Financial Post*, 1 Dec. 1951.

The Military Legacy

- 1 Canada. Parliament, *Sessional Papers*, No. 15, 1899, Pt. II, p. 3, Herchmer to Moodie, Regina, 27 Aug. 1897; *ibid.*, p. 4, Moodie to Herchmer, Ottawa, 14 Jan. 1899; *ibid.*, Herchmer to Moodie, Edmonton, 2 Sept. 1897.
- 2 *ibid.*, pp. 4–14, Moodie to Herchmer, Ottawa, 14 Jan. 1899. Frank Walker, who followed practically the same route as the Moodie expedition, wrote that Moodie "had a facility of quarelling with practically every guide that he had, and they left him shortly after their employ" (F. Walker, op. cit., p. 5).

- 3 Canada. Parliament, *Sessional Papers*, No. 15, 1899, Pt. II, p. 7, Moodie to Herchmer, Ottawa, 14 Jan. 1899; *ibid.*, p. 11. *See also* W.C. Grennan, "The Highway to Alaska," *RCMP Quarterly*, Vol. 13 (April 1948), pp. 328–9; A.C. Hinton and P.H. Godsell, *op. cit.*, p. 133; Pierre Berton, *op. cit.*, pp. 237–8.
- 4 T. Morris Longstreth, *The Silent Force: Scenes from the Life of the Mounted Police of Canada* (New York: Century, 1927), pp. 257–9; W.C. Grennan, *op. cit.*, pp. 329–30; A.C. Hinton and P.H. Godsell, *op. cit.*, pp. 133–4; Canada. Parliament, *Sessional Papers*, No. 28, 1907, App. Q; *ibid.*, 1908, Pt. I, pp. 154–6.
- 5 A.C. Hinton and P.H. Godsell, *op. cit.*, p. 135; Canada. British Columbia-Yukon-Alaska Highway Commission, *Preliminary Report on Proposed Highway Through British Columbia and the Yukon Territory to Alaska* (Ottawa, 1940) (hereafter cited as Canada, *Preliminary Report*), Vol. 1, p. 1.
- 6 Canada, *Preliminary Report*, Vol. 1, pp. 1–5.
- 7 *See* PAC, MG30, H43, Citizens Committee to George Black, Dawson, 29 Aug. 1931; Canada, *Preliminary Report*, Vol. 1, p. 6.
- 8 Canada. Army Records, General Staff Memorandum, "U.S.A., Alaska Highway via British Columbia and Yukon," 11 Feb. 1937, quoted in James Eayrs, *In Defence of Canada* (Toronto: Univ. of Toronto Press, 1964–), Vol. 2, *Appeasement and Rearmament*, p. 178.
- 9 Quoted in James Eayrs, *op. cit.*, p. 178.
- 10 Quoted in R.G. Bucksar, *op. cit.*, p. 21.
- 11 Canada, *Preliminary Report*, Vol. 1, pp. 6–10, 50–3.
- 12 Lawrence J. Burpee, "A Road to Alaska," *Canadian Geographical Journal*, Vol. 21 (Nov. 1940), pp. 259–60.
- 13 Canada, *Preliminary Report*, Vol. 1, p. 15.
- 14 Canada. British Columbia-Yukon-Alaska Highway Commission, *Report on Proposed Highway through British Columbia and the Yukon Territory to Alaska* (Ottawa: n.p., 1941), Vol. 1, pp. 53, 51.
- 15 Maurice Matloff, ed., *American Military History* (Washington, D.C.: USGPO, 1969), pp. 423–4.
- 16 Edward McCourt, *op. cit.*, p. 1.
- 17 A.C. Hinton and P.H. Godsell, *op. cit.*, p. 140.
- 18 S.C. Ells, "Alaska Highway," *Canadian Geographical Journal*, Vol. 28 (March 1944), p. 110.
- 19 CNPPP, p. 115; S.C. Ells, *op. cit.*, p. 105; Walter Hamilton, *op. cit.* p. 173; *see also* R.G. Bucksar, *op. cit.*, p. 22.
- 20 CNPPP, p. 127; F.H. Ellis, *Heritage*, p. 192; J.A. Wilson, "It Cost \$58,000,000 Plus," *Canadian Aviation*, Vol. 17 (May 1944), p. 92.
- 21 J.A. Wilson, "It Cost \$58,000,000 Plus," *Canadian Aviation*, Vol. 17 (May 1944), p. 92; CNPPP, p. 127; Kenneth J. Rea, *op. cit.*, p. 212.
- 22 CNPPP, p. 115.
- 23 Canada. Corps of Royal Canadian Engineers, *Maintenance and Construction on the Alaska Highway: A History of the Northwest Highway Maintenance Establishment*, rev. ed. (n.p.: Northwest Highway System [1964]) (hereafter cited as *Maintenance and Construction*), p. 4.
- 24 CNPPP, p. 115; Edward McCourt, *op. cit.*, p. 14.
- 25 F.C. Rainey, *op. cit.*, p. 143; H.W. Richardson, "Alcan – America's Glory Road; Part III – Construction Tactics," *Engineering News-Record* (14 Jan. 1943), p. 131; CNPPP, p. 116.
- 26 PAC, MG22, Commissioner, Parcel 16, fol. 466–3, "General Information Concerning the Alaska Highway – Canadian Section"; R.G. Bucksar, *op. cit.*, p. 22; Harold Griffin, *Alaska and the Canadian Northwest. Our Newest Frontier* (New York: Norton, 1944), p. 110; R.G. Bucksar, *Geography of Northwestern Anglo-America with Emphasis upon Arctic British Columbia, the Yukon Territory, and South-eastern Alaska; A Text for Geography 310 and 583* (West Chester: publ. by the author, 1965) (hereafter cited as *Geography*), p. 326; F.C. Rainey, *op. cit.*, p. 148.
- 27 Canada. Corps of Royal Canadian Engineers, *Maintenance and Construction*, p. 5; *see also* Clarence L. Sturdevant, "U.S. Army's First Official Story of the Alaska Highway," *Roads and Bridges*, Vol. 81 (March 1943), pp. 64–6; F.C. Rainey, *op. cit.*, p. 154; C.S. Landis, "Blasting Deep Rock Cuts along the Alaskan Highway," *Explosives Engineer*, Vol. 9 (March–April 1945), p. 56.
- 28 Douglas Coe, *Road to Alaska: The Story of the Alaska Highway* (New York: Messner, 1943), pp. 128–9.
- 29 *Ibid.*, pp. 122, 159.
- 30 *See ibid.*, pp. 134, 138–9, 147.
- 31 Walter Hamilton, *op. cit.*, p. 176.
- 32 F.C. Rainey, *op. cit.*, p. 143.
- 33 H.W. Richardson, *op. cit.*, p. 131; F.C. Bishop, *The Alaska Highway* (Washington, D.C.: Northwest Service Command [1944]), p. 6 and frontispiece.
- 34 C.E. Barger, "Railroad in Miniature," *Alaska Life*, Vol. 8 (Aug. 1945), p. 40.
- 35 H.W. Love, "The Northwest Highway System," *Engineering Journal*, Vol. 37 (June 1954), p. 672; Canada. Corps of Royal Canadian Engineers, *Maintenance and Construction*, p. 3.
- 36 Richard L. Neuberger, "Railroad Saga of the North," *Alaska Life*, Vol. 7 (Feb. 1944), p. 4.
- 37 F.C. Bishop, *op. cit.*, p. 10.
- 38 C.E. Barger, "Railroad in Miniature," *Alaska Life*, Vol. 8 (Feb. 1944), p. 40.
- 39 C.E. Barger, "A Sturdy Little Line," *Alaska Sportsman*, Vol. 12 (Jan. 1946), pp. 11, 33; PAC, MG22, Commissioner, Parcel 7, "Lease of the Facilities of the White Pass and Yukon Railway Company. War Department, Contract No. W-2789-TC-460"; C.E. Barger, "Railroad in Miniature," *Alaska Life*, Vol. 8 (Aug. 1945), p. 40.
- 40 C.E. Barger, "A Sturdy Little Line," *Alaska Sportsman*, Vol. 12 (Jan. 1946), p. 10; R.L. Neuberger, *op. cit.*, p. 7.
- 41 *Encyclopedia Canadiana*, s.v. "Canol Project"; W.C. Grennan, *op. cit.*, p. 324; Harold Griffin, *op. cit.*, pp. 64–8, 70, 74; N. Gritzuk, "The Role of Transportation in the Development of the North," *Western Miner and Oil Review*, Vol. 32 (April 1959), p. 30; H.W. Love, *op. cit.*, p. 672.
- 42 F.C. Bishop, *op. cit.*, pp. 12, 14; A.C. Hinton and P.H. Godsell, *op. cit.*, p. 149; S.C. Ells, *op. cit.*, p. 111.
- 43 C.S. Landis, *op. cit.*, p. 56; PAC, MG22, Commissioner, Parcel 18, fol. 1.
- 44 Canada. Bureau of Transportation Economics, *Economic Report on the Alaska Highway* (Ottawa, 1948), pp. 13–4; H.W. Love, *op. cit.*, p. 673; H.W. Richardson, "Finishing the Alaska Highway," *Engineering News-Record* (27 Jan. 1944), pp. 97, 101; Harold Griffin, *op. cit.*, pp. 106, 114.
- 45 Edward McCourt, *op. cit.*, p. 12.
- 46 H.W. Love, *op. cit.*, pp. 675–6; G.A. Williams, "Winter-Maintenance Problems on the Alaska Highway," *Roads and Bridges*, Vol. 81 (Nov. 1943), pp. 27–30, 58.

- 47 A.B. Yates, "Maintaining the Alaska Highway," *Royal Engineers Journal*, n.s., Vol. 50 (March 1954), pp. 86–9; Canada. Bureau of Transportation Economics, op. cit., p. 14.
- 48 PAC, RG15, E1a, Vol. 24, fol. 35402, Canada. Parliament. House of Commons, *Debates*, 3 June 1942, quoted in PAC, MG30, H43.
- 49 PAC, RG15, E1a, Vol. 24, fol. 35402, Jeckell to Gibson, Vancouver, 5 March 1943; *ibid.*, LeCapelain to Gibson, Whitehorse, 25 Feb. 1943, *see also* PAC, RG85, PARC No. 466, fol. 5794.
- 50 PAC, Bill MacBride's Scrapbook, Acc. No. 1959–30 (microfilm), Wheeler to MacBride, Victoria, 27 Sept. 1949.
- 51 PAC, MG22, Commissioner, Parcel 18, fol. 1, U.S. Embassy, Ottawa, to Gibson, 9 April 1947; J.A. Wilson, "It Cost \$58,000,000 Plus," *Canadian Aviation*, Vol. 17 (May 1944), p. 46; W.C. Grennan, op. cit., p. 324; H.W. Love, op. cit., p. 672; L. Harrington, op. cit., p. 63; CNPPP, pp. 119, 129; PAC, RG15, E1a, Vol. 25, fol. 35538, Gibson to Gibben, Ottawa, 4 Nov. 1947; *Encyclopedia Canadiana*, s.v. "Canol Project."
- 52 PAC, MG22, Commissioner, Parcel 16, fol. 466–3; S.C. Ells, op. cit., p. 114; W.D. MacBride, "Story," p. 4.
- 53 S.C. Ells, op. cit., p. 110.
- 54 Canada. Bureau of Transportation Economics, op. cit., p. 15; W.C. Grennan, op. cit., p. 331; E.R. Weick, "Yukon Transportation: Past, Present, Future," *North*, Vol. 14 (Sept.–Oct. 1967), p. 25; Canada. Corps of Royal Canadian Engineers, *Maintenance and Construction*, p. 1. The Northwest Highway System included the Watson Lake airport road as well as the Canadian sections of the Alaska Highway and the Haines lateral (D.W. Carr and Associates, *The Yukon Economy: Its Potential for Growth and Continuity. A Report Prepared for the Department of Indian Affairs and the Government of the Yukon Territory* [Ottawa: Queen's Printer, 1968] [hereafter cited as *The Yukon Economy*], Vol. 7: Reference Study on Transportation: Transportation Services of the Yukon Territory, by J.I. Guest and T.D. Heaver, p. 14).
- 55 PAC, MG22, Commissioner, Parcel 16, fol. 466–3, Martin, telegram to O.C., RCMP, Whitehorse, Ottawa, 18 Feb. 1948. *See also* W.C. Grennan, op. cit., pp. 332–4 for administration of travel restrictions.
- 56 A.C. Hinton and P.H. Godsell, op. cit., pp. 143–4; Clarence L. Sturdevant, op. cit., p. 32.
- 57 Kenneth J. Rea, op. cit., p. 233; Canada. Bureau of Transportation Economics, op. cit., p. 4; CNPPP, p. 115; D.W. Carr and Associates, *The Yukon Economy*, Vol. 7, p. 6.
- 58 Canada. Bureau of Transportation Economics, op. cit., pp. 34, 36, 44, 46.
- 59 The Bureau of Transportation Economics estimated net annual maintenance costs at \$3,020,000 in 1948 (*ibid.*, pp. 69–70). Actual maintenance costs rose from \$110,107 in 1946 to \$2,085,309 in 1951 (Kenneth J. Rea, op. cit., p. 233).
- 60 Canada. Bureau of Transportation Economics, op. cit., p. 26; D.W. Carr and Associates, *The Yukon Economy*, Vol. 7, Table 8, p. 24; quoted in E.R. Weick, op. cit., p. 26.
- 61 E.R. Weick, op. cit., p. 26; D.W. Carr and Associates, *The Yukon Economy*, Vol. 7, pp. 24, 35; N. Gritzuk, op. cit., p. 36.
- 62 D.W. Carr and Associates, *The Yukon Economy*, Vol. 1: *Final Report*, by D.W. Carr and F.W. Anderson, pp. 214–28.
- 63 *See* Charles B. West, "Paving of Alaska Highway Key to Yukon Tourist Potential," in YNRC-2; R. Minter, "The Development of the Yukon's Tourist Industry," in YNRC-3.
- 64 H.W. Love, op. cit., p. 677.
- 65 CDNANR, *Improvement Program for the Alaska Highway; An Analysis of Economic Benefits, Prepared by Stanford Research Institute for the Department of Northern Affairs and National Resources* (Ottawa: Queen's Printer, 1966), pp. II–4, II–5, VI–6; R.A.J. Phillips, op. cit., p. 184.
- 66 J.R. Lotz, "The Yukon Pattern – Yesterday and Tomorrow," *North*, Vol. 13 (Jan.–Feb. 1966), p. 21; *see* R.A.J. Phillips, op. cit., p. 191 for Yukon reaction to transfer of highway from Northwest Highway System to the Department of Public Works in 1964; R.G. Bucksar, *Geography*, p. 28.
- 67 CDNANR, *A Territorial Roads Policy for the Future* (Ottawa: Queen's Printer, 1965), p. 10; Kenneth J. Rea, op. cit., p. 234; CNPPP, p. 117; N. Gritzuk, op. cit., p. 28.

The Dawning of a New Era

- 1 Canada. Department of Mines and Resources, *Annual Report* (1938–39), p. 85; (1939–40), p. 73; (1940–41), p. 74; (1941–42), p. 57; (1942–43), p. 74; (1943–44), p. 76; (1944–45), p. 75; PAC, MG22, Commissioner, Parcel 16, "List of Airport and Emergency Landing Fields in the Yukon Territory, 1 July 1941"; *ibid.*, Parcel 6, "Old Logs of the W.P. and Y.R."; Roy Minter, pers. com.
- 2 CDBS, *Canadian Mineral Statistics, 1886–1956; Mining Events, 1604–1956* (Ottawa: Queen's Printer, 1957) (hereafter cited as *Mineral Statistics*), pp. 65–6, 119; Yukon Consolidated Gold Corporation, president's address to annual meeting, 1942, n.p.; *ibid.*, 1943.
- 3 CNPPP, p. 112.
- 4 A.E. Pike, op. cit., p. 19; *see* CDBS, *Mineral Statistics*, p. 120, and A.E. Pike, op. cit., p. 19; CNPPP, p. 112.
- 5 Canada. Parliament. House of Commons, *Debates*, 10 March 1947, p. 1207; PAC, MG22, Commissioner, Parcel 16, Jeckell to Gibson, Dawson, 19 Nov. 1945; *ibid.*, Jeckell to Gibson, 16 April 1946.
- 6 PAC, RG15, E1a, Vol. 25, fol. 35538, Black to Crerar, Ottawa, 3 Aug. 1944; *ibid.*, British Columbia and Yukon Chamber of Mines to Cam-sell, 12 March 1945; *ibid.*, Black to Glen, Ottawa, 12 March 1946; A.E. Pike, op. cit., p. 20; PAC, RG15, E1a, Vol. 25, fol. 35538, Buckle to Cocheran [1946]; *ibid.*, Glen to Lee, Ottawa, 28 Jan. 1947.
- 7 PAC, RG15, E1a, Vol. 25, fol. 35538, Keenleyside to secretary of the Treasury Board, Ottawa, 15 Jan. 1948; A.E. Pike, op. cit., p. 20; PAC, RG85, PARC No. 467, fol. 5845, MacLean to McKeand, Dawson, 7 Aug. 1929; N. Gritzuk, op. cit., p. 32; Kenneth J. Rea, op. cit., p. 121; PAC, RG85, PARC No. 467, fol. 5845, Gibben to Gibson, Dawson, 15 Dec. 1947.
- 8 PAC, RG15, E1a, Vol. 25, fol. 35538, Keenleyside to secretary of the Treasury Board, Ottawa, 15 Jan. 1948; Canada. Department of Mines and Resources, *Annual Report* (1950–51), p. 82; L. Harrington, op. cit., p. 66; "Road Programme in Northern Canada," *Arctic Circular*, Vol. 11 (March 1959), p. 52; *see also* CDNANR, *Annual Reports, 1955–63*.
- 9 *See* CDBS, *Mineral Statistics*, p. 120.
- 10 PAC, RG15, E1a, Vol. 25, fol. 35538, Hume, memorandum to Gibson, 22 July 1949; A.E. Pike, op. cit., p. 20; Kenneth J. Rea, op. cit., p. 138.
- 11 CDBS, *Mineral Statistics*, p. 120; Kenneth J. Rea, op. cit., Table 4.8, p. 400.

- 12 Kenneth J. Rea, op. cit., p. 253; PAC, RG85, Acc. 69/180, Box No. 155699, Rogers to Gibson, Whitehorse, 8 June 1949; Canada. Department of Resources and Development. Northern Administration, *Yukon Territory: A Brief Description of Its History, Administration, Resources and Development* (Ottawa, 1950), p. 20.
- 13 PAC, RG15, E1a, Vol. 25, fol. 35538, "Access Roads to Dawson City, Yukon Territory."
- 14 Ibid., Hit to Heeney, 12 Dec. 1946; *ibid.*, Rogers to Gibson, Vancouver, 2 Dec. 1946; J.R. Lotz, *Dawson*, p. 19; Canada. Department of Mines and Resources, *Annual Report* (1950–51), p. 94.
- 15 CDNANR, *Annual Report* (1953–54), p. 119.
- 16 Ibid. (1954–55), p. 113; CDNANR, *A Territorial Roads Policy for the Future* (Ottawa: Queen's Printer, 1965), p. 9; G. Gardner, op. cit., p. 589.
- 17 PAC, RG15, E1a, Vol. 25, fol. 35538, Rogers to Gibson, Vancouver, 2 Dec. 1946; Frank H. Brown, op. cit., p. 3.
- 18 Frank H. Brown, op. cit., pp. 2–3.
- 19 Ibid., pp. 3–5; G. Gardner, op. cit., p. 598; *Financial Post*, 1 Dec. 1951.
- 20 Frank H. Brown, op. cit., p. 3; Roy Minter, pers. com.; G. Gardner, op. cit., pp. 598–9.
- 21 White Pass and Yukon Corporation, *Annual Report* (1953), n.p.
- 22 Walter Hamilton, op. cit., p. 94; Frank H. Brown, op. cit., p. 6; *White Pass Container Route News*, July–Aug. 1968; "Winterized Locomotive is Match for Yukon Weather," *Diesel Power* (March 1957), p. 37; White Pass and Yukon Corporation, *Annual Report* (1954), n.p.; D.W. Carr and Associates, *The Yukon Economy*, Vol. 7, p. 9.
- 23 White Pass and Yukon Corporation, *Annual Report* (1953), n.p.; Roy Minter, pers. com.
- 24 J. Weppeler, *S.S. Klondike*, p. 22.
- 25 Ibid., pp. 26–7; W.D. MacBride, "Steamboat Round the Bend," *Whitehorse Star*, Tourist ed., June 1969, p. 5.
- 26 Yukon Archives, Daily Log, Steamer Klondike, 1955.
- 27 White Pass and Yukon Corporation, *Annual Report* (1952), n.p.
- 28 Frank H. Brown, op. cit., p. 8.
- 29 "Did You Ever Wonder?" "A series of ads inserted in Whitehorse Star and Yukon Daily News, commencing first week of July 1968." Roy Minter's personal file.
- 30 Kenneth J. Rea, op. cit., p. 207; *White Pass Container Route News*, 1 Sept. 1969; White Pass and Yukon Corporation, *Diesels North* [1972], p. 6.
- 31 John Gillis, op. cit., p. 14.
- 32 Walter Hamilton, op. cit., p. 94; N. Gritzuk, op. cit., p. 34; Foster Kemp, "The White Pass & Yukon Route," *Canadian Railroad Historical Association News Report*, No. 81 (Sept. 1957), p. 93.
- 33 White Pass and Yukon Corporation, *Diesels North* [1972], pp. 6–7; Frank H. Brown, op. cit., p. 9; *White Pass Container Route News*, 1 Sept. 1969; D.W. Carr and Associates, *The Yukon Economy*, Vol. 7, pp. 9, 11.
- 34 Frank H. Brown, op. cit., passim; Roy Minter, pers. com.
- 35 White Pass and Yukon Corporation, *Annual Report* (1968), n.p.; Frank H. Brown, op. cit., p. 8; R.A.J. Phillips, op. cit., p. 187; John Gillis, op. cit., p. 14.
- 36 Frank H. Brown, op. cit., p. 12; White Pass and Yukon Corporation, *Annual Reports*, 1953, 1955, 1967.
- 37 Canada. Parliament. House of Commons, *Debates*, 8 Dec. 1953, pp. 697–8.
- 38 John Diefenbaker, "Notes," p. 1, in YNRC-3.
- 39 R.A.J. Phillips, op. cit., p. 186.
- 40 Kenneth J. Rea, op. cit., pp. 241–4.
- 41 See PAC, RG15, E1a, Vol. 2, fol. 280, "Abstract Statement Showing Joint Expenditure of the Department of the Interior and Yukon Government on Construction of Roads, 1902–1903"; *ibid.*, Vol. 9, fol. 2941; CDI, *Annual Report* (1900), Pt. VII, pp. 3–4.
- 42 White Pass and Yukon Corporation, *Annual Report* (1959), n.p.; H.W. Roozeboom, "Wind River Trail," *The Beaver*, Outfit 291 (Winter 1960), pp. 18–20; see also Walter Hamilton, op. cit., pp. 94–5.
- 43 White Pass and Yukon Corporation, *Annual Report* (1959), n.p.
- 44 See, for example, various issues of the *Arctic and Northern Development Digest*, 1969 to present.
- 45 G. Gardner, op. cit., p. 596; A. Collins, "High Flying Helicopters Aid Mapping in Yukon," *Canadian Aviation*, Vol. 24 (Jan. 1951), pp. 16–7; "Bush Flying Still Vital Activity Changes Character in Northwest," *Canadian Aviation*, Vol. 21 (Nov. 1948), p. 36; *White Pass Container Route News*, Dec. 1968.
- 46 See D.W. Carr and Associates, *The Yukon Economy*, Vol. 7, p. 38.

Bibliography

Adney, E. Tappan

The Klondike Stampede of 1897–1898. Facs. reprint. Ye Galleon Press, Fairfield, Wash., 1968.

"The Sledge Dogs of the North." *Outing*, Vol. 39 (May 1901), pp. 129–37. Albany.

Alaska: Sundry Pamphlets

A compilation of various contemporary accounts in the library of the Department of Indian and Northern Affairs, Parks Canada, Ottawa

Allan, A.A.

Gold, Men and Dogs. Putnam, New York, 1931.

Arctic and Northern Development Digest

1962–72. Montreal.

Bankson, Russell A.

The Klondike Nugget. Claxton Printers, Caldwell, Idaho, 1935.

Barger, C.E.

"A Sturdy Little Line." *Alaska Sportsman*, Vol. 12 (Jan. 1946), pp. 10–11, 31–7. Ketchikan.

"It's a Long Road." *Alaska Sportsman*, Vol. 11 (Nov. 1945), pp. 12–13, 43–6. Ketchikan.

"Railroad in Miniature." *Alaska Life*, Vol. 8 (Aug. 1945), pp. 38–43. Seattle.

Berton, Laura Beatrice

I Married the Klondike. Little, Brown, Toronto, 1954.

Berton, Pierre

Klondike. The Life and Death of the Last Great Gold Rush. McClelland and Stewart, Toronto, 1958.

Bishop, F.C.

The Alaska Highway. Northwest Service Command, Washington, D.C. [1944].

Black, Martha Louise

My Seventy Years, by Mrs. George Black as Told to Elizabeth Bailey Price. Nelson, London, 1938.

Bond, Marshall

"To the Klondike, With a Big Dog Who Met Jack London." Ed. Marshall Bond, Jr. *The American West*, Vol. 6 (Jan. 1969), pp. 44–8. Palo Alto.

Booth, Edward S.

"Modern Bush Pilots Don't Fly by the Seat of Their Pants." *Canadian Aviation*, Vol. 11 (May 1940), pp. 13, 33. Toronto.

Bostock, H.

"A Sketch of Road Development in the Yukon Territory." *Arctic Circular*, Vol. 3 (Dec. 1950), pp. 63–70. Ottawa.

Bostock, H., comp.

Yukon Territory: Selected Field Reports of the Geological Survey of Canada, 1898–1933. Queen's Printer, Ottawa, 1957. Geological Survey of Canada, Memoir 284.

Bostock, H., ed.

"A History of Russell Creek, Yukon Territory." Manuscript (taken from diaries, books and writings of Lt. Col. N.A.D. Armstrong).

Bovey, John A.

"The Attitudes and Policies of the Federal Government Towards Canada's Northern Territories, 1870–1930." MA thesis, Univ. of British Columbia, 1967.

British Columbia (Province)

Statutes. Victoria, 1895–1910.

Bucksar, R.G.

Geography of Northwestern Anglo-America with Emphasis upon Arctic British Columbia, The Yukon Territory, and Southeastern Alaska; A Text for Geography 310 and 583. Publ. by the author, West Chester, Pa., 1965.

"The Frontiers Recede, a Brief History of Transportation in the Canadian Northwest." *North*, Vol. 8 (Nov.–Dec. 1961), pp. 16–23. Ottawa.

Burbridge, A.A.

"The Changing Role of Transportation in Simcoe County from 1800 to 1866." MA thesis, McMaster Univ., 1961.

Burpee, Lawrence J.

"A Road to Alaska." *Canadian Geographical Journal*, Vol. 21 (Nov. 1940), pp. 257–67. Ottawa.

"Bush Flying Still Vital Activity Changes Character in Northwest"

Canadian Aviation, Vol. 21 (Nov. 1948), pp. 36–7; 88. Toronto.

Canada. British Columbia-Yukon-Alaska Highway Commission.

Preliminary Report on Proposed Highway through British Columbia and the Yukon Territory to Alaska. Ottawa, 1940. 2 vols.

Report on Proposed Highway through British Columbia and the Yukon Territory to Alaska. Ottawa, 1941. 2 vols.

Canada. Bureau of Transportation Economics.

Economic Report on the Alaska Highway. Ottawa, 1948.

Canada. Corps of Royal Canadian Engineers.

Maintenance and Construction on the Alaska Highway: A History of the Northwest Highway Maintenance Establishment. Rev. ed. Northwest Highway System, n.p. [1964].

Canada. Department of Indian and Northern Affairs. National Historic Parks and Sites Branch.

Correspondence files

Canada. Department of Mines and Resources.

Annual Reports. Ottawa, 1937–49.

Canada. Department of Mines and Resources. Bureau of Northwest Territories and Yukon Affairs.

The Yukon Territory: A Brief Description of its Administration, Resources and Development. Ottawa, 1943.

The Yukon Territory: A Brief Description of its Administration, Resources and Development. Ottawa, 1944.

Yukon Territory: A Brief Description of its History, Administration, Resources and Development, by W.F. Lothian. Ottawa, 1947.

Canada. Department of Mines. Mines Branch.

Summary Reports. Ottawa, 1907–16.

Canada. Department of Northern Affairs and National Resources.

Annual Reports. Ottawa, 1954–66.

A Territorial Roads Policy for the Future. Queen's Printer, Ottawa, 1965.

Improvement Program for the Alaska Highway; An Analysis of Economic Benefits. Prepared by Stanford Research Institute for the Department of Northern Affairs and National Resources. Queen's Printer, Ottawa, 1966.

Canada. Department of Northern Affairs and National Resources. Canadian Government Travel Bureau.

Alaska Highway, Canadian Section. Queen's Printer, Ottawa, 1955.

Alaska Highway: Road to Yukon Adventure. Queen's Printer, Ottawa, 1960.

Canada. Department of Public Works.

Engineering Study, Alaska Highway, Canadian Section. Queen's Printer, Ottawa, 1966.

Canada. Department of Resources and Development.

Annual Reports. Ottawa, 1950–53.

Canada. Department of Resources and Development. Northern Administration.

Yukon Territory; A Brief Description of its History, Administration, Resources and Development. Ottawa, 1950.

Canada. Department of the Interior.

Annual Reports. Ottawa, 1887, 1896–1936.

Canada. Department of the Interior. Mining Lands and Yukon Branch.

The Yukon Territory; Its History and Resources. Ottawa, 1916.

Canada. Department of the Interior. Northwest Territories and Yukon Branch.

The Yukon Territory: Its History and Resources. Government Printing Bureau, Ottawa, 1907.

The Yukon Territory: Its History and Resources. Government Printing Bureau, Ottawa, 1909.

The Yukon Territory, 1926. King's Printer, Ottawa, 1926.

Canada. Dominion Bureau of Statistics.

Canadian Mineral Statistics, 1886–1956; Mining Events, 1604–1956. Queen's Printer, Ottawa, 1957.

Chronological Record of Canadian Mining Events from 1604 to 1947 and Historical Tables of the Mineral Production of Canada. King's Printer, Ottawa, 1948.

Reports of Mineral Production of Canada. Ottawa, 1921–29.

The Canada Year Book . . . Queen's Printer, Ottawa, 1965.

Canada. Geological Survey of Canada.

Report on an Exploration in the Yukon District, N.W.T. and Adjacent Portion of British Columbia, 1887, by George M. Dawson; *With Extracts relating to the Yukon District from Report on an Exploration in the Yukon and Mackenzie Basins, 1887–88,* by R.G. McConnell. Queen's Printer, Ottawa, 1898.

Canada. North Pacific Planning Project.

Canada's New Northwest, a Study of the Present and Future Development of Mackenzie District of the Northwest Territories, Yukon Territory, and the Northern Parts of Alberta and British Columbia. King's Printer, Ottawa, 1947.

Canada. Parliament.

Annual Reports of the Commissioner of the North-West [and Royal North-West] Mounted Police. Ottawa, 1894–1906.

Sessional Papers. Ottawa, 1889.

Statutes. Ottawa, 1896–1945.

Canada. Parliament. House of Commons.

Debates. Ottawa, 1898–1953.

Canada. Public Archives.

MG22, Commissioner of the Yukon Territory, Papers. (This collection has been reorganized as RG91.)

MG30, H43, Martha Black Papers

RG15, Department of the Interior. Records.

RG85, Northern Administration Branch. Records.

Bill MacBride's Scrapbook. Microfilm, 1959–30.

Canada. Royal Commission on Transportation.

Report. Ottawa, 1961. Vol. 1.

Canadian Grocer

Vol. 18, No. 14 (April 1904), p. 42.

Carr, D.W. and Associates

The Yukon Economy; Its Potential for Growth and Continuity. A Report Prepared for the Department of Indian Affairs and Northern Development and the Government of the Yukon Territory. Queen's Printer, Ottawa, 1968. 8 vols.

Chicago Record

Klondike; The Chicago Record's Book for Gold Seekers. Chicago Record Co., Chicago, 1897.

Cody, H.A.

"The Gateway of the North." *Canadian Magazine*, Vol. 28 (Feb. 1907), pp. 337–42. Toronto.

Coe, Douglas

Road to Alaska: *The Story of the Alaska Highway*. Messner, New York, 1943.

Collins, A.

"High Flying Helicopters aid Mapping in Yukon." *Canadian Aviation*, Vol. 24 (Jan. 1951), pp. 16–8, 42, 44. Toronto.

Corp, E.J.

"The Trail of '98 and the Gravel River Route." *Arctic Circular*, Vol. 11 (March 1959), pp. 35–51. Ottawa.

Creighton, Donald Grant

"Presidential Address." In Canadian Historical Association, *Annual Report* (1957), pp. 1–12. Toronto.
The Empire of the St. Lawrence. Macmillan, Toronto, 1956.

Cunynghame, Francis

Lost Trail, the Story of Klondike Gold and the Man who Fought for Control. Faber & Faber, London, 1953.

Curtin, Walter Russell

Yukon Voyage, Unofficial Log of the Steamer Yukoner. Claxton Printer, Caldwell, Idaho, 1938.

Daily Alaska Empire (Juneau)

1939.

Dall, W.H.

The Yukon Territory, the Narrative of W.H. Dall, Leader of the Expedition to Alaska in 1866–1868. Downey, London, 1898.

David, Max

"Railroad through a Snow-bound Hell." *True Magazine* (Jan. 1963), pp. 54–5, 100–09. Greenwich, Conn.

Dawson, C.A., ed.

The New North-West. Univ. of Toronto Press, Toronto, 1947.

Dawson, C.A. and R.W. Murchie

The Settlement of the Peace River Country: A Study of a Pioneer Area. Macmillan, Toronto, 1934. Canadian Frontiers of Settlement, Vol. 6.

Dawson (City). Collector of Customs Records.

Register of Vessels entering Inward and Outward at the Port of Dawson, 1929–1955

Dawson Daily News

1898–1940.

Dawson Hardware Company

Miner's Price List. N.p., 1903. Copy in City Museum, Dawson.

Dorman, R.

A Statutory History of Steam and Electric Railways of Canada. King's Printer, Ottawa, 1941.

Easterbrook, W.T. and H.G.J. Aitken

Canadian Economic History. Macmillan, Toronto, 1956.

Easterbrook, W.T. and M.H. Watkins, eds.

Approaches to Canadian Economic History, a Selection of Essays. McClelland and Stewart, Toronto, 1967. Carleton Library, No. 31.

Eayrs, James

In Defence of Canada. Univ. of Toronto Press, Toronto, 1964–. Vol. 2: *Appeasement and Rearmament*.

Ellis, F.H.

"Call it Reconquest." *Canadian Aviation*, Vol. 17 (May 1944), pp. 47–8, 94–6. Toronto.
Canada's Flying Heritage. Univ. of Toronto Press, Toronto, 1954.
"The Flying Cruickshanks." *Canadian Aviation*, Vol. 27 (March 1954), pp. 26–7, 96–7. Toronto.
"They Flew an Airborne Viking Ship." *Canadian Aviation*, Vol. 26 (Aug. 1953), pp. 28–34. Toronto.

Ells, S.C.

"Alaska Highway." *Canadian Geographical Journal*, Vol. 28 (March 1944), pp. 104–19. Ottawa.

Encyclopedia Canadiana

Grolier, Toronto, 1967. 10 vols.

Faulkner, V.A.B. and A. Baird

"The Yukon." Manuscript on file, National Historic Parks and Sites Branch, Parks Canada, Ottawa, n.d.

Financial Post (Toronto)

1 Dec. 1951.

Finnie, Richard

"Flying beyond Sixty, Part III." *Canadian Aviation*, Vol. 12 (April 1939), pp. 24–5, 46. Toronto.

"Freighting in the Arctic"

Western Miner and Oil Review, Vol. 33 (April 1960), p. 110. Vancouver.

Gardner, G.

"Quelques aspects de la mise en valeur du Grand Nord. I: Le développement des transports au Yukon." *L'Actualité Économique*, Vol. 32 (Jan.–March 1957), pp. 581–603. Montreal.

Gillis, John

"White Pass History." Radio script.

Glazebrook, G.P. de T.

A History of Transportation in Canada. McClelland and Stewart, Toronto, 1964. 2 vols. Carleton Library, Nos. 11 and 12.

Goldstein, J.

"The Living Thread: A History of River Transportation in the Yukon Territory." Manuscript on file, National Historic Parks and Sites Branch, Parks Canada, Ottawa, n.d.

Grant, J.F.

"North to the Yukon by Air." *Canadian Geographical Journal*, Vol. 15 (Aug. 1937), pp. 74–87. Ottawa.

Graves, S.H.

On the "White Pass" Pay-roll. Privately printed, Chicago, 1908.

Grennan, W.C.

"The Highway to Alaska." *RCMP Quarterly*, Vol. 13 (April 1948), pp. 320–35. Ottawa.

Griffin, Harold

Alaska and the Canadian Northwest. Our Newest Frontier. Norton, New York, 1944.

Gritzuk, N.

"The Role of Transportation in the Development of the North." *Western Miner and Oil Review*, Vol. 32 (April 1959), pp. 28–42. Vancouver.

Harbottle, Jeanne

"Bush Flying in the Yukon Territory." *Whitehorse Star*, Tourist ed., Summer, 1970.

Hamilton, Walter

The Yukon Story. A Sourdough's Record of Goldrush Days and Yukon Progress from the Earliest Times to the Present Day. Mitchell Press, Vancouver, 1964.

Harrington, L.

"Yukon's Wilderness Roads." *Canadian Geographical Journal*, Vol. 65 (Aug. 1962), pp. 60–9. Ottawa.

Heilprin, Angelo

Alaska and the Klondike, a Journey to the New Eldorado with Hints to the Traveller. Pearson, London, 1899.

Herbert, C.H.

"The Development of Transportation in the Canadian North." *Canadian Geographical Journal*, Vol. 53 (Nov. 1956), pp. 188–95. Ottawa.

Herron, Edward A.

Alaska's Railroad Builder, Mike Heney. Messner, New York, 1960.

Hewetson, H.W.

"Transportation in the Canadian North." *Canadian Journal of Economics and Political Science*, Vol. 11 (Aug. 1945), pp. 450–66. Toronto.

Hinton, A.C. and P.H. Godsell

The Yukon. Ryerson, Toronto, 1954.

Illingworth, Frank.

Highway to the North. Ernest Benn, London, 1955.

Ingersoll, Ernest

Gold Fields of the Klondike and the Wonders of Alaska . . . Intro. Henry W. Elliott. Edgewood, n.p. [1897].

Innes-Taylor, Alan

"Information on Old Locomotives at Dawson City, Yukon Territory." Copy in Dawson Museum, n.d.

Innis, Harold Adams

Essays in Canadian Economic History. Comp. M.Q. Innis. Univ. of Toronto Press, Toronto, 1956.

Settlement and the Mining Frontier. Macmillan, Toronto, 1936. Canadian Frontiers of Settlement, Vol. 9.

The Cod Fisheries; The History of an International Economy. Rev. ed. Univ. of Toronto Press, Toronto, 1954.

The Fur Trade in Canada. An Introduction to Canadian Economic History. Rev. ed. Univ. of Toronto Press, Toronto, 1967.

Innis, M.Q.

"The Industrial Development of Ontario 1783–1820." Ontario Historical Society, *Proceedings*, Vol. 32 (1937), pp. 104–13. Toronto.

Jackman, W.T.

Economics of Transportation. Univ. of Toronto Press, Toronto, 1926.

Jeckell, G.A.

"Notes on History of Air Service in the Yukon Territory." *Dawson Weekly News*, 6 Dec. 1929.

Jennings, W.T.

Report of Mr. W.T. Jennings, C.E., on Routes to the Yukon. Printed by Order to Parliament, Ottawa, 1898.

Kemp, Foster

"The White Pass & Yukon Route." *Canadian Railroad Historical Association News Report*, No. 81 (Sept. 1957), pp. 91–3. Montreal.

King, F.

"When Post-Dogs Brought the Mail." *Canadian Mining Journal*, Vol. 80 (Dec. 1959), pp. 57–8. Toronto.

Kirk, Robert C.

Twelve Months in Klondike. Heinemann, London, 1899.

Kitchener, L.D.

Flag over the North. Superior Publishing, Seattle, 1954.

Ladue, Joseph

Klondyke Facts, Being a Complete Guide Book to the Great Gold Regions of the Yukon and Klondyke and the North West Territories. Lovell, Montreal, 1897.

Landis, C.S.

"Blasting Deep Rock Cuts along the Alaska Highway." *Explosives Engineer*, Vol. 9 (March–April 1945), pp. 55–7, 76. Wilmington.

Lavallee, Omer

"The Road of Gold . . . Some Historical Notes on the White Pass & Yukon Route." *Canadian Railroad Historical Association News Report*, No. 83 (Nov. 1957), pp. 105–13. Montreal.

Lawrence, Guy

40 Years on the Yukon Telegraph. Mitchell Press, Vancouver, 1965.

Leitch, A.

"Royal Road to the Yukon." *The Beaver*, Outfit 280 (June 1949), pp. 19–21. Winnipeg.

Longstreth, T. Morris

The Silent Force: Scenes from the Life of the Mounted Police of Canada. Century, New York, 1927.

Lotz, J.R.

"On the Trail of '98." *Seattle Post Intelligencer*, Pictorial Review, 31 May 1964, pp. 10–12. Seattle.

Northern Realities: The Future of Northern Development in Canada. New Press, Toronto, 1970.

The Dawson Area: A Regional Monograph. Northern Co-ordination and Research Centre, Department of Northern Affairs and National Resources, Ottawa, n.d. Yukon Research Project No. 2.

"The Yukon Pattern – Yesterday and Tomorrow." *North*, Vol. 13 (Jan.–Feb. 1966), pp. 20–3. Ottawa.

Love, H.W.

"The Northwest Highway System." *Engineering Journal*, Vol. 37 (June 1954), pp. 671–7. Montreal.

Lynch, Jeremiah

Three Years in the Klondike. Arnold, London, 1904.

MacBride, W.D.

"A Brief History of the White Pass and Yukon Route and the 'Trails of '98.'" Typescript, Indian and Northern Affairs Library, Whitehorse, 1945. Bound with "Yukon Stage – W.P. & Y.R., No. 5."

"Saga of Famed Packets and other Steamboats of Mighty Yukon River." *Cariboo and Northwest Digest* (Winter 1948–Spring 1949), pp. 97–114.

"Steamboat Round the Bend." *Whitehorse Star*, Tourist ed., June 1969.

"The Story of the Dalton Trail." Copy of original in the possession of A. Rettalick, Whitehorse.

"The Story of the White Pass and Yukon Route." Typescript, Indian and Northern Affairs Library, Ottawa, n.d.

"The White Pass Route." *The Beaver*, Outfit 285 (Autumn 1954), pp. 18–23. Winnipeg.

"Trail of '98." *Cariboo and Northwest Digest* (Summer 1948), pp. 100–21.

"Yukon Stage Line." *The Beaver*, Outfit 284 (June 1953), pp. 43–5. Winnipeg.

MacDonald, Norbert

"Seattle, Vancouver and the Klondike." *Canadian Historical Review*. Vol. 49 (Sept. 1968), pp. 234–46. Toronto.

MacGibbon, D.A.

Railway Rates and the Canadian Railway Commission. Houghton, Mifflin, Boston, 1917.

MacGregor, J.G.

The Klondike Gold Rush through Edmonton, 1897–1898. McClelland and Stewart, Toronto, 1970.

Mackintosh, W.A.

"Economic Factors in Canadian History." *Canadian Historical Review*, Vol. 4 (March 1923), pp. 12–25. Toronto.

Prairie Settlement: The Geographical Setting. Macmillan, Toronto, 1934. Canadian Frontiers of Settlement, Vol. 1.

Mathews, Richard

The Yukon. Holt, Rinehart and Winston, New York, 1968.

Matloff, Maurice, ed.

American Military History. USGPO, Washington, D.C., 1969. Army Historical Series.

Mayo-Keno Bulletin

1924–35.

McCourt, Edward

The Yukon and Northwest Territories. Macmillan, Toronto, 1969.

McQuesten, Leroy N.

Recollections of Leroy N. (Jack) McQuesten of Life in the Yukon, 1871–1885. Copied from the original in the possession of the Yukon Order of Pioneers, June 1959.

"Modern Transportation System Serves Yukon"

Western Miner and Oil Review, Vol. 33 (Oct. 1960), p. 31. Vancouver.

Morrison, David Robert

"The Politics of the Yukon Territory: 1898–1908." MA thesis, Univ. of Saskatchewan, Saskatoon, 1964.

Murphy, Eugene

"Railway Building and Operation in Yukon." *Dawson Daily News*, 21 July 1909.

Murray, Alexander Hunter

Journal of the Yukon, 1847–48. Ed. L.J. Burpee. King's Printer, Ottawa, 1910. Publications of the Canadian Archives, No. 4.

Nelles, H. Vivian

"The Politics of Development: Forests, Mines and Hydro-electric Power in Ontario, 1890–1939." PhD diss., Univ. of Toronto, 1970.

Neuberger, Richard L.

"Railroad Saga of the North." *Alaska Life*, Vol. 7 (Feb. 1944), pp. 3–7. Seattle.

O'Brien, Charles F.

"Northwest Staging Route." *Alberta Historical Review*, Vol. 17 (Autumn 1969), pp. 14–22. Calgary.

Ogilvie, William

Early Days on the Yukon and the Story of its Gold Finds. Thorburn and Abbott, Ottawa, 1913.

The Klondike Official Guide. Canada's Great Gold Field, the Yukon District. Hunter, Rose, Toronto, 1898.

Parnell, C.

"Campbell of the Yukon – Pt. I." *The Beaver*, Outfit 273 (June 1942), pp. 4–6. Winnipeg.

"Campbell of the Yukon – Pt. II." *The Beaver*, Outfit 273 (Sept. 1942), pp. 16–18. Winnipeg.

Parnell, C. and J.P. Kirk

"Campbell of the Yukon – Pt. III." *The Beaver*, Outfit 273 (Dec. 1942), pp. 23–7. Winnipeg.

Phillips, R.A.J.

Canada's North. Macmillan, Toronto, 1967.

"The Klondike Legend." *Canadian Geographical Journal*, Vol. 64 (March 1962), pp. 76–85. Ottawa.

Pike, A.E.

Souvenir Brochure of the Yukon Territory. Mayo Branch, CIM and United Keno Hill Mines, n.p., 1957.

Place, Marion T.

The Yukon. Ives, Washburn, New York, 1967.

Price, C.S.

"Thunder in the Mountains." *Alaska Sportsman*, Vol. 24 (April 1958), pp. 22–5. Ketchikan.

Prouse, J.H.

"New Wings for the Yukon Mail." *Canadian Geographical Journal*, Vol. 19 (Dec. 1939), pp. 352–63. Ottawa.

Quong, J.Y.C.

"Alaska Highway: 1221-Mile Maintenance Problem." *Public Works in Canada*, Vol. 2 (July 1954), pp. 8–11, 36–8. Vancouver.

Rainey, F.C.

"Alaska Highway, an Engineering Epic." *National Geographic Magazine*, Vol. 83 (Feb. 1943), pp. 143–68. Washington, D.C.

Rea, Kenneth J.

The Political Economy of the Canadian North: An Interpretation of the Course of Development in the Northern Territories of Canada to the Early 1960s. Univ. of Toronto Press, Toronto, 1968.

Richardson, H.W.

"Alcan – America's Glory Road; Pt. II – Supply, Equipment and Camps." *Engineering News-Record* (31 Dec. 1942), pp. 35–42. Chicago.

"Alcan – America's Glory Road; Pt. III – Construction Tactics." *Engineering News-Record* (14 Jan. 1943), pp. 131–8. Chicago.

"Controversial Canol." *Engineering News-Record* (18 May 1944), pp. 78–84. Chicago.

"Finishing the Alaska Highway." *Engineering News-Record* (27 Jan. 1944), pp. 94–103. Chicago.

Rickard, T.A.

Through the Yukon and Alaska. Mining and Scientific Press, San Francisco, 1908.

"Road Programme in Northern Canada"

Arctic Circular, Vol. 11 (March 1959), pp. 52–7. Ottawa.

"Roads in the Yukon"

Dawson Daily News, 21 July 1909.

Robertson, R.G.

"New Roads will Provide Access to Yukon Mineral Deposits." *Western Miner and Oil Review*, Vol. 32 (April 1959), pp. 136–8. Vancouver.

Robinson, J.L.

"Water Transportation in the Canadian Northwest." *Canadian Geographical Journal*, Vol. 31 (Nov. 1945), pp. 236–56. Ottawa.

Roozeboom, H.W.

"Wind River Trail." *The Beaver*, Outfit 291 (Winter 1960), pp. 18–21. Winnipeg.

Rowley, G.W.

"Settlement and Transportation in the Canadian North." *Arctic*, Vol. 7, Nos. 3 and 4 (1954), pp. 336–42. Montreal.

Roy, P.E.

"Railways, Politicians and the Development of the City of Vancouver as a Metropolitan Centre, 1886–1929." MA thesis, Univ. of Toronto, 1963.

Schwatka, Frederick

Along Alaska's Great River. A Popular Account of the Travels of the Alaska Exploring Expedition of 1883, Along the Great Yukon River, from its source to its Mouth, in the British North-West Territory, and in the Territory of Alaska . . . Cassell & Company, New York, (1885).

Scott, Thomas S.

"Some Experiences on the Chilkoot Pass." *Canadian Magazine*, Vol. 10 (Feb. 1898), pp. 329–38. Toronto.

Secretan, J.H.E.

To Klondyke and Back, a Journey down the Yukon from its Source to its Mouth. Hurst and Blackett, London, 1898.

Sherwood, Morgan B., ed.

Alaska and its History. Univ. of Washington Press, Seattle, 1967.

Shiels, Archie

"A Short History of Transportation to and within the Territory of Alaska, 1867–1908." Copy of typescript in Public Archives of Canada, MG30, A19.

Shortt, A. and A.G. Doughty, eds.

Canada and its Provinces: A History of the Canadian People and their Institutions, by One Hundred Associates. Publishers Association of Canada, Toronto, 1914. 22 vols. Vol. 22.

Smiley, Donald V., ed.

Rowell-Sirois Commission Report. McClelland and Stewart, Toronto, 1963. Carleton Library, No. 5.

Smith, J. Gordon

"The Klondike." *Canadian Magazine*, Vol. 10 (Feb. 1898), pp. 322–8. Toronto.

Spragge, G.W.

"Colonization Roads in Canada West, 1850–1867." *Ontario History*, Vol. 49, No. 1 (1957), pp. 1–17. Toronto.

Steele, Samuel

Forty Years in Canada; Reminiscences of the Great North-West, with some Account of his Service in South Africa . . . Ed. Mollie Glenn Niblett, intro. J.G. Colmer. McClelland, Goodchild, Stewart, Toronto, 1918.

Studnicki-Gizbert, K.W.

"Transport." In J.M.S. Careless and R.C. Brown, eds., *The Canadians: 1867–1967*. Macmillan, Toronto, 1967.

Sturdevant, Clarence L.

"U.S. Army's First Official Story of the Alaska Highway." *Roads and Bridges*, Vol. 81 (March 1943), pp. 27–32, 62–8. Toronto.

Sutherland-Brown, M.C.

"Northwest Highway System." *Canadian Army Journal*, Vol. 10 (July 1956), pp. 119–29. Ottawa.

Taylor, W.

"Transportation in the Yukon." *Dawson Daily News*, 21 July 1909.

"The Yukon Territory [1928]"

Typescript prepared by various government departments

"This Month in Northland History"

Alaska Sportsman, Vol. 34 (Oct. 1968), p. 16–7. Ketchikan.

Thompson, N. and J.H. Edgar

Canadian Railway Development. Macmillan, Toronto, 1933.

"Transportation Past and Present in Alaska"

Alaska Magazine and Canadian Yukoner, Vol. 1 (March 1900). Tacoma.

United States Army. Department of the Columbia.

Report of a Military Reconnaissance in Alaska, Made in 1883, by Frederick Schwatka . . . USGPO, Washington, D.C., 1885.

United States. Department of The Interior. National Park Service.

Proposed Klondike Gold Rush National Historic Park: Historic Resource Study, By Edwin C. Bearss. USGPO, Washington, D.C., 1970.

Wade, F.C.

"A Business Talk on the Yukon." *Canadian Magazine*, Vol. 19 (May 1902), pp. 25–31. Toronto.

Walden, Arthur Treadwell

A Dog-Puncher on the Yukon. Carrier, Montreal, 1928.

Walker, F.

"Overland Trail to the Klondike." *Alberta Historical Review*, Vol. 7 (Winter 1959), pp. 1–7. Calgary.

Weick, E.R.

"Yukon Transportation: Past, Present, Future." *North*, Vol. 14 (Sept.–Oct. 1967), pp. 24–9. Ottawa.

Weppler, James

The S.S. Klondike, the Last Stern-wheeler. Manuscript Report Series No. 91. Parks Canada, Ottawa, 1968.
Yukon, Early History; A Community of Men. Manuscript Report Series No. 9. Parks Canada, Ottawa, 1969.

Wernecke, Livingston

"Glaciation, Depth of Frost, and Ice Veins of Keno Hill and Vicinity, Yukon Territory." *Engineering and Mining Journal*, Vol. 133 (Jan. 1932), pp. 38–43. New York.

Whitehorse Chamber of Commerce and Yukon Chamber of Mines, co-sponsors. Yukon Northern Resource Conference, 1st.

Papers. Whitehorse, 1963.

Whitehorse Chamber of Commerce and Yukon Chamber of Mines, co-sponsors. Yukon Northern Resource Conference, 2nd.

Yukon's Resources: To-day and Tomorrow. Whitehorse, 1966.

Whitehorse Chamber of Commerce and Yukon Chamber of Mines, co-sponsors. Yukon Northern Resource Conference, 3rd.

The Developing North. Whitehorse, 1969.

Whitehorse. Yukon Archives.

British Yukon Navigation Company. Annual Reports of the Superintendent, 1902–1934.
British Yukon Navigation Company. Ships' Logs.
Collector of Customs Records. Register of Vessels entering Inward and Outward at the Port of Whitehorse, 1929–1955.
J.R.P. Gaudin's Notebook

Whitehorse Star

Various issues, 1901–72.

White Pass and Yukon Corporation

Various files. Vancouver.

White Pass Container Route News (Vancouver)

1968–72.

Whiting, F.B.

Grit, Grief and Gold. A True Narrative of an Alaska Pathfinder. Peacock, Seattle, 1933.

Whymper, Frederick

Travel and Adventure in the Territory of Alaska, Formerly Russian America – Now Ceded to the United States – and in Various Other Parts of the North Pacific. John Murray, London, 1868.

Wickersham, James

Old Yukon: Tales – Trails – and Trials. Washington Law Book, Washington, D.C., 1938.

Williams, G.A.

"Winter-Maintenance Problems on the Alaska Highway." *Road and Bridges*, Vol. 81 (Nov. 1943), pp. 27–30, 58. Toronto.

Wilson, J.A.

"It cost \$58,000,000 Plus." *Canadian Aviation*, Vol. 17 (May 1944), pp. 46, 90–2. Toronto.

"The Expansion of Aviation into Arctic and Sub-arctic Canada." *Canadian Geographical Journal*, Vol. 31 (Sept. 1950), pp. 130–41. Ottawa.

Winslow, Kathryn

Big Pan-out. Norton, New York, 1951.

"Winterized Locomotive is Match for Yukon Weather"

Diesel Power (March 1957), p. 37.

Woodall, R.G.

The Postal History of Yukon Territory. R.G. Woodall, Dorset, England, n.d.

Woodside, H.J.

"Dawson as it is." *Canadian Magazine*, Vol. 17 (Sept. 1901), pp. 403–13. Toronto.

Yates, A.B.

"Maintaining the Alaska Highway." *Royal Engineers Journal*, n.s., Vol. 50 (March 1954), pp. 79–88. Chatham, England.

Yukon Territory

Yukon Local Ordinances, 1899–1920

Zaslow, Morris

"A History of Transportation and Development of the Mackenzie Basin from 1871 to 1921." MA thesis, Univ. of Toronto, 1971.

The Opening of the Canadian North, 1870–1914. McClelland and Stewart, Toronto, 1971.

**Canadian Historic Sites:
Occasional Papers in Archaeology and History**

- 1 *Archaeological Investigations of the National Historic Sites Service 1962–1966*, John H. Rick; *A Classification System for Glass Beads for the Use of Field Archaeologists*, K.E. and M.A. Kidd; *The Roma Settlement at Brudenell Point, Prince Edward Island*, Margaret Coleman. \$4.00; \$4.80 outside Canada.
- 2 *Contributions from the Fortress of Louisbourg – No. 1 Archaeological Research at the Fortress of Louisbourg, 1961–1965*, Edward McM. Larrabee; *A “Rescue Excavation” at the Princess Half-bastion, Fortress of Louisbourg*, Bruce W. Fry; *An Archaeological Study of Clay Pipes from the King’s Bastion, Fortress of Louisbourg*, Iain C. Walker. \$4.00; \$4.80 outside Canada.
- 3 *Comparisons of the Faunal Remains from French and British Refuse Pits at Fort Michilimackinac: A Study in Changing Subsistence Patterns*, Charles E. Cleland; *The French in Gaspé, 1534 to 1760*, David Lee; *The Armstrong Mound on Rainy River, Ontario*, Walter A. Kenyon. \$3.00; \$3.60 outside Canada.
- 4 *A Brief History of Lower Fort Garry*, Dale Miquelon; *The Big House, Lower Fort Garry*, George C. Ingram; *Industrial and Agricultural Activities at Lower Fort Garry*, George C. Ingram; *The Sixth Regiment of Foot at Lower Fort Garry*, William R. Morrison; *The Second Battalion, Quebec Rifles, at Lower Fort Garry*, William R. Morrison. \$4.00; \$4.80 outside Canada.
- 5 *Excavations at Lower Fort Garry, 1965–1967; A General Description of Excavations and Preliminary Discussions*, James V. Chism. \$3.00; \$3.60 outside Canada.
- 6 *A History of Rocky Mountain House*, Hugh A. Dempsey; *The Excavation and Historical Identification of Rocky Mountain House*, William C. Noble. \$3.00; \$3.60 outside Canada.
- 7 *Archaeological Investigations at Signal Hill, Newfoundland, 1965–66*, Edward B. Jelks. \$3.00; \$3.60 outside Canada.
- 8 *The Canals of Canada*, John P. Heisler. \$5.00; \$6.00 outside Canada.
- 9 *The Canadian Lighthouse*, Edward F. Bush; *Table Glass Excavated at Fort Amherst, Prince Edward Island*, Paul McNally; *Halifax Waterfront Buildings: An Historical Report*, Susan Buggey. \$7.75; \$9.30 outside Canada.
- 10 *The Architectural Heritage of the Rideau Corridor*, Barbara A. Humphreys; *Glassware Excavated at Fort Gaspereau, New Brunswick*, Jane E. Harris; *Commissioners of the Yukon, 1897–1918*, Edward F. Bush. \$5.00; \$6.00 outside Canada.
- 11 *The Battle of Queenston Heights*, Carol Whitfield; *A History of Fort George, Upper Canada*, Robert S. Allen; *The Battle of Châteauguay*, Victor J.H. Suthren. \$5.00; \$6.00 outside Canada.
- 12 *Contributions from the Fortress of Louisbourg – No. 2 Lime Preparation at 18th-Century Louisbourg*, Charles S. Lindsay; *Louisbourg Guardhouses*, Charles S. Lindsay; *A Survey of Louisbourg Gunflints*, T.M. Hamilton and Bruce W. Fry. \$5.00; \$6.00 outside Canada.
- 13 *All That Glitters: A Memorial to Ottawa’s Capitol Theatre and its Predecessors*, Hilary Russell; *Glassware Excavated at Beau-bassin, Nova Scotia*, Jane E. Harris; *Sir Sam Hughes (1853–1921)*, Carol Whitfield. \$6.50; \$7.80 outside Canada.
- 14 *The British Indian Department and the Frontier in North America, 1755–1830*, Robert S. Allen; *The B.C. Mills Prefabricated System: The Emergence of Ready-made Buildings in Western Canada*, G.E. Mills and D.W. Holdsworth. \$5.75; \$6.90 outside Canada.
- 15 *A History of Martello Towers in the Defence of British North America, 1796–1871*, Ivan J. Saunders; *Report of the 1972 Archaeological Excavations of the Market Shoal Tower, Kingston, Ontario*, Donald A. Harris. \$6.75; \$8.10 outside Canada.
- 16 *The Battle of the Restigouche*, Judith Beattie and Bernard Pothier; *Table Glass from the Wreck of the Machault*, Paul McNally; *The Western European Coarse Earthenwares from the Wreck of the Machault*, K.J. Barton; *The Cochrane Ranch*, William Naf-tel. \$5.00; \$6.00 outside Canada.
- 17 *The Halifax Citadel, 1825–60: A Narrative and Structural History*, John Joseph Greenough. \$6.00; \$7.20 outside Canada.

18 *Contributions from the Fortress of Louisbourg – No. 3*
A Campaign of Amateurs: The Siege of Louisbourg, 1745, Raymond F. Baker; *The Construction and Occupation of the Barracks of the King's Bastion at Louisbourg*, Blaine Adams. \$6.50; \$7.80 outside Canada.

19 *Yukon Transportation: A History*, Gordon Bennett. \$6.50; \$7.80 outside Canada.

History and Archaeology/Histoire et archéologie

Publications available by mail from Printing and Publishing, Supply and Services Canada, Hull, Quebec K1A 0S9, Canada, or through your bookseller.

5 *A Report on a West Coast Whaling Canoe Reconstructed at Port Renfrew, B.C.*, E.Y. Arima. 1975. \$5.50; \$6.50 outside Canada.

6 *Louisbourg and the Indians: A Study in Imperial Race Relations, 1713–1760*, Olive Patricia Dickason; *Surgeons and Surgery in Ile Royale*, Linda M. Hoad. 1976. \$10.50; \$12.60 outside Canada.

7 *Archaeology and the Fur Trade: The Excavation of Sturgeon Fort, Saskatchewan*, Norman F. and Anne Barka. 1976. \$6.25; \$7.50 outside Canada.

8 *Navy Hall, Niagara-on-the-Lake*, David Flemming; *Fort Wellington: A Structural History*, David Lee; *The Battle of the Windmill: November 1838*, David Lee. 1976. \$5.75; \$6.90 outside Canada.

9 *Fort George on the Niagara: An Archaeological Perspective*, John F. Wilson and Linda D. Southwood. 1976. \$8.00; \$9.60 outside Canada.

11 *Clay Tobacco-Pipes, with Particular Reference to the Bristol Industry*, Iain C. Walker. 1977. 4 vols. \$25.00; \$30.00 outside Canada.

12 *Prehistoric Occupations at Coteau-du-Lac, Quebec: A Mixed Assemblage of Archaic and Woodland Artifacts*, Richard Lueger; *Analyses of Two Prehistoric Copper Artifacts from the Cloverleaf Bastion of the Fort at Coteau-du-Lac, Quebec*, A. Couture and J.O. Edwards; *Identification of Representative Prehistoric Stone Artifacts and Samples of Unworked Stone from the Cloverleaf Bastion of the Fort at Coteau-du-Lac, Quebec*, D.E. Lawrence; *Fish Remains from the Cloverleaf Bastion of the Fort at Coteau-du-Lac, Quebec*, W.B. Scott; *The Human Osteological Material from the Cloverleaf Bastion of the Fort at Coteau-Du-Lac, Quebec*, J. Edson Way. 1977. \$8.00; \$9.60 outside Canada.

13 *The American Capture of Fort George, Ontario*, Margaret Coleman; *The Guardhouse at Fort George, Ontario*, Elizabeth Vincent. 1977. \$7.25; \$8.70 outside Canada.

14 *A Study of Fort St. Joseph*, J.N. Emerson, H.E. Devereux, M.J. Ashworth. 1977. \$9.50; \$11.40 outside Canada.

15 *Glimpses of Soldiering at Coteau-du-Lac, Quebec – 1780 to 1856*, Karen Price; *Beads from the Fort at Coteau-du-Lac, Quebec*, Karlis Karklins; *Table Glass from the Fort at Coteau-du-Lac, Quebec*, Paul McNally; *Coins from the Fort at Coteau-du-Lac, Quebec*, Ann Cunningham Falvey. 1977. \$8.25; \$9.90 outside Canada.

16 *Cumulative Seriation and Ceramic Formula Dating: A Preliminary Study*, Roger T. Grange, Jr. 1977. \$4.25; \$5.10 outside Canada.

18 *Early Fortification Ditches at Ile-aux-Noix, Quebec*, Roger T. Grange, Jr. 1977. \$5.50, \$6.60 outside Canada.

19 *Excavation of the Porter's Cottage, Civilian Barracks/Straw Shed, Northern Mounds and Rampart at Fort Lennox National Historic Park, 1966*, Roger T. Grange, Jr. 1978. \$5.50; \$6.60 outside Canada.

20 *The Archaeology of Fort Lennox, Ile-aux-Noix, Quebec, 1964 Season*, Norman F. Barka; *The Beads from Fort Lennox, Quebec*, Karlis Karklins. 1978. \$7.75; \$9.30 outside Canada.

