THE EVOLUTION OF RAILWAYS IN THE KOOTENAYS

by

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ABSTRACT

Traditionally, international boundaries have been regarded as barriers to the evolution of transportation networks. Numerous examples of the disruptive influence of borders on travel routes have been documented in the literature. Does such a pattern always occur? This thesis is concerned with a railnet which evolved in close proximity to an international boundary, but which for the most part appeared able to develop with little regard for the boundary as a barrier.

This railnet is that of the Kootenay district of south-eastern British Columbia and the adjacent United States. An investigation is made of the major elements which best explain the nature of this network's evolution. They are discovered to include a rich natural resource endowment, rivalry between railway companies, and private and government decision makers, but not the international boundary. Comparison is made with the railnet of another area, similar apart from the absence of such a border. The nature of private and government decision making is also examined. Each step in turn provides additional evidence to indicate that the boundary was not a major factor, certainly not a significant barrier, in the evolution of the Kootenay railnet.
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CHAPTER I

INTRODUCTION

Introduction To The Problem

The concern of this thesis is the evolution of a transportation network. It is a study in historical geography, an attempt to interpret and explain the growth and decline of a particular railroad network. Specifically, it is an investigation into the development of railways from 1880 in the Kootenay district of southeastern British Columbia, an area adjacent to the United States border.

The Kootenay Region

The Kootenay area was selected for a number of reasons. Not only was the area readily accessible for field research, it was rich in natural resources, it had witnessed the development of a complex network of railways, and it was bordered by an international boundary. In addition, there had been little geographic investigation of railnet evolution in the region. Although one case study had been made of the area in terms of the international boundary (Stephen Jones, 1937), only superficial treatment was given to transport network evolution.

In any attempt to explain railnet evolution in this area, the presence of the international border would appear to be the most important factor. Elsewhere along its length the 49th parallel has had a strongly disruptive effect on railway network
development, particularly in the Canadian-American prairies (Losch, 1954; Wolfe, 1962). Its barrier effect in related fields of circulation has also been noted, for example by Mackay (1958), who investigated the impact of the international boundary on telephone calls in eastern Canada, and by Minghi (1963, 1964), who noted the effect on television preference of the same boundary in the Pacific Coast region. However, the railnet of the Cordilleran section of the border area appears not to reflect any such barrier effect of the boundary, and in particular it contrasts remarkably with the railnet of the prairie border area. Whereas the majority of lines in the prairies approach, but do not cross the boundary, in the Kootenays there are few lines which approach the border but do not cross it. That railways evolved in the Kootenays with little regard for the boundary as a barrier, i.e. that their pattern of evolution can be explained without much reference to the boundary, is therefore taken as the major hypothesis in this study.

Methodology

In order to explain the evolution of the Kootenay railnet, we shall proceed through several stages of analysis.

1) Describe, and present a simplified model of network change. Following a description of the evolution of the railnet, a simple stage model will be presented to summarize that evolution. This approach was stimulated by the attempt of Taaffe, Morrill, and Gould (1963) to develop a four-stage model to summarize the evolution of transportation networks inland from the seacoast in under-
developed countries such as Ghana.

2) Formulate hypotheses concerning the major elements affecting evolution, and attempt to explain network evolution in terms of these elements. It is not possible to investigate all the elements which might contribute towards explaining the evolution of the Kootenay railnet. Only certain major elements are hypothesized to have influenced, and thus to explain satisfactorily, the development of railways. In essence, this provides a simplified model of the real situation. In the Kootenay region, the elements hypothesized to have had a dominant influence are (a) rich natural resources, (b) competing interests, particularly rival railway companies, (c) individual decision makers at the head of the railway companies, individuals who were competing on a personal as well as on a corporate level, and (d) government decision makers, both federal and provincial. The combination of the first three elements led to a highly competitive situation during the period of railway construction. The resource endowment provided the incentive for cross-border railway construction by the various decision makers, who thus found their companies competing with each other across the boundary. The importance of the government decision makers is hypothesized to be that they failed to render the border effective, or on occasion deliberately rendered it ineffective, as a barrier—hence the hypothesis concerning the lack of influence of the border, referred to above. Even if it can be shown that the border had very little influence as a barrier to railways, however, it should also be noted whether or not it had some indirect effect through the presence of nationalistic elements in intercompany
rivalry, elements which would not have existed had there been no political division of the area.

Other studies of railway evolution have also been concerned with some of these elements. Wolfe (1962) has noted the rivalry along the prairie section of the 49th parallel boundary between Canadian and American railways. Meinig (1962) has documented the complex pattern of network development in the Columbia Basin which resulted from a similar highly competitive situation between "four major railroad systems and their subsidiaries" (p. 402). In the same study there is also the call for a "focus of attention upon the actions of those in control of the processes of development" (p. 413), namely the decision makers responsible in large part for the nature and location of railway systems.

A number of writers have pointed out that the north-south physiographic grain of the Kootenay region was important in influencing the location of transportation routes across rather than parallel to the boundary (e.g. Stephen Jones, 1937, p. 441; Howay, Sage, Angus, 1942, p. 228-229). To these writers, topography would seem to be the major factor determining the development of north-south routes by Americans prior to that of east-west routes by Canadians. Although topographic conditions no doubt made American ease of entry somewhat greater, we suggest that other factors, historical, economic, and political, were actually more important in explaining the chronology of development of transportation routes in the Kootenays.

3) Attempt further to justify the rejection of "the border as barrier" as an important variable, by using a historical-
geographical analogy. In order to provide additional support for the major hypothesis, an attempt will be made to show the general similarity of railnet development in the Kootenay region to that of another region where there is no international boundary, but where other major elements, particularly natural resources and rival interests, are also present.

Chapter Outline

The approach outlined above is reflected in the chapter organization as follows. In Chapter 2, the chronology and location of railway developments will be documented. It is here, too, that the simple stage model of network change will be presented to aid in the understanding of Kootenay railnet evolution. A start at analyzing evolution without reference to the boundary as a major variable will follow in Chapter 3. There will be an attempt to examine railnet development in terms of the first two major elements, resources and rival interests. Each of the arenas of railway-building activity in the region will be investigated in terms of cross-border rivalry for resources. The presence of the rich mineral resources of the area and the strategies of railway companies will be related in each case. Here there will also be a brief comparison of the Kootenay railnet with that of another region where there is no international boundary, but which is similar in other ways. There will be an analysis of the third and fourth major elements, the private and government decision makers, in Chapter 4. In Chapter 5 there will be an integration and summary of the findings of this study.
Research Methods

Research methods for this thesis involved a number of different procedures. Since the subject is historical, there is a great dependence on library and archival material such as government and railway company reports, maps, newspapers, and other material which cover the period of major concern. Field work in the selected area involved the consultation of local repositories such as libraries and museum-archives collections, as well as the interviewing of company officials and those with a local historical or railway background. Altogether these have contributed a fairly comprehensive collection of information, although it is still not as complete as could be desired. All maps appearing in this thesis are the original work of the author, based on research data compiled from numerous sources.
CHAPTER 2

THE EVOLUTION OF THE RAILNET

The Regional Setting

The Kootenay district of southeastern British Columbia and the adjacent areas of the Northwest States—including parts of Washington, Idaho, and Montana—form part of the North American Cordillera (See Map 1). The history of the area in the period 1860-1920 was characterized by mining booms, the rapid appearance of short-lived mining towns, and the extracting, concentrating, smelting, and export of base metals. There were rich deposits of gold, copper, silver, lead, and zinc in numerous locations, as well as thick coal beds in the Crowsnest Pass area to the east.

It was these mineral deposits, impressive in both quantity and quality, that constituted the major attractiveness of the Kootenays to both Canadian and American interests. A number of these deposits were rich enough to bear the high cost of shipment out of the region by riverboats, wagons, and pack animals almost immediately following discovery. In other words, railways were not essential for all mineral resource exploitation in the Kootenays.

Pre-Railroad Transport

Long before railways were constructed in the Kootenays, then, the area was traversed by numerous transport routes. The major rivers and lakes were used by craft ranging from canoes to steam-
boats, and overland trails were tributary to the waterways. Not surprisingly, these early travel routes, whether by water or by land, often followed a path later adopted by the railways. In striking a balance between that which is cheapest to build in terms of cost of engineering and that which is cheapest to use in terms of time and distance, all modes of land transport normally select a route that is physiographically easy. In the Kootenays the choice was frequently not very great; hence the tendency for considerable coincidence in communication routes despite differences in date and in mode.

By 1880 the Kootenays were served by a number of important trails and riverboat routes, although traffic was intermittent and irregular, there being almost no mining activity at all in some years. The majority of these transport routes ran north-south across the border (See Map 2), and Kootenay minerals were transported to smelters in Montana and Idaho before being shipped to the eastern United States. To counter this trend towards north-south traffic and interaction across the international boundary, the Dewdney Trail was constructed in 1865 from the Pacific Coast to the Kootenays, north of and parallel to the border (See Map 2). Nevertheless, traffic continued to cross the international boundary despite Canadian attempts to provide east-west links in order to change the direction of dominant flows both into and out of the Kootenays. This contrast and competition between north-south and east-west transportation routes into the region gives a spatial dimension to the theme of cross-border rivalry and will be noted frequently throughout this thesis.
Transcontinental Railways

The Pacific Northwest was traversed by two transcontinental railways within two years of each other, the Northern Pacific and the Canadian Pacific. Essentially, both were concerned at the time of construction only with reaching the Pacific coast by the easiest route. Nonetheless, by virtue of their location, they could not help but have a significant effect upon the Kootenays and adjacent United States.

Specifically, the Northern Pacific Railway was completed in 1883 from Minneapolis and St. Paul in the east, to Portland in the west, through Helena, Sand Point, and Spokane. The Canadian Pacific Railway was completed in 1885 from Montreal in the east to Port Moody in the west, through Calgary, Golden, and Revelstoke (See Map 3). Neither railway actually traversed the area of real concern in this thesis, although both skirted it, one to the south and one to the north.

The immediate result of the completion of these lines was a greatly increased accessibility to the Kootenays, from both the east and west. Both transcontinental railways, like the border to which they were parallel, crossed the grain of the topography and a number of navigable waterways. What resulted was a transportation network in which east-west movement to the area was by rail, and north-south movement within the area was by river, lake, or trail, at least until further railways were constructed. Water transport in the area was definitely stimulated by the completion of the transcontinental railways.
The Importance of Water Transport

After the completion of the transcontinental railways, rail developments consisted largely of short branch lines and "portage" lines between different waterways, further stimulating the use of water transport. The combination of rail and water transport gave far easier access into the area than before. In effect, rail and water routes must be seen as parts of an integrated network. The railways relied upon water services as the only means by which to reach otherwise disconnected branch lines, often establishing their own steamboat and rail ferry services along such routes. The most important of these water transport routes were the following:

1) The Columbia River (a) south from the Canadian Pacific Railway at Revelstoke to points on the Arrow Lakes, and (b) north from the Northern Pacific Railway to the same points.

2) The lower Kootenay River from the United States across the international boundary to various points on Kootenay Lake.

3) The upper Columbia River south from the Canadian Pacific Railway at Golden.

4) The upper Kootenay River from the United States across the international boundary to various points in the East Kootenays.

These four major waterways, along with others which were less significant, are depicted on Map 4. Regular service was provided by numerous navigation companies from the mid 1880's on the first three of these routes, and from the early 1890's on the fourth. All steamboat services connected with at least one of the transcontinental railways, either directly or by means of branch lines, and in some cases served as links between two or more such lines.
THE KOOTENAYS
MAJOR WATERWAYS
IN THE
1880s-1890s
The Development of Railways in the Study Area

The actual pattern and sequence of railway developments in the Kootenay area is detailed and complex. Because of this, it is believed that the most meaningful presentation of railway evolution would be by means of a number of stages. The dates selected are each representative of a somewhat different phase in the evolution of the railnet. Four dates were chosen: 1895, 1900, 1912, and 1968. For each period or stage there will follow a brief description of the railways constructed and abandoned.

The 1895 Railway Network

By 1895, ten years after the completion of the second of the two transcontinental railways noted above, a number of new railway developments had occurred, as can be seen from Map 5. The first two railways to be built in the Kootenays served the mining centre of Nelson, providing the town with connections to two transcontinental railways. In 1892 the Columbia and Kootenay Railway was completed from Robson on the Columbia River along the unnavigable stretch of the Kootenay River to Nelson. This provided a link with the main line of the Canadian Pacific via the water route along the Columbia River-Arrow Lakes from Robson to Revelstoke (See Map 5). In the following year, 1893, the Nelson and Fort Sheppard Railway reached Nelson, connecting at the United States border with the Spokane Falls and Northern Railway. The latter line ran from the Northern Pacific at Spokane, Washington, to the international boundary, having been completed to Colville, Washington by 1889, and to Northport, just south of the border, by 1892. The following year it reached the border where it connected with the Nelson and Fort Sheppard Railway.
THE KOOTENAYS

RAILWAYS
1895

EXISTING LINES (1885)
WATERWAYS
LINES BUILT SINCE 1885:
COLUMBIA & KOOTENAY
SPOKANE FALLS & NORTHERN
NELSON & FORT SHEPPARD
GREAT NORTHERN
NAKUSP & SLOCAN
KASLO & SLOCAN
Nelson thus acquired two railways within a year, an occurrence that was to be repeated elsewhere.

The year 1893 also saw the completion of a third transcontinental railway through the Pacific Northwest, the Great Northern Railway. Built through Jennings, Montana and Bonners Ferry, Idaho, on its route from the Great Lakes in the east to Everett, Washington in the west, it was roughly parallel to but more northerly than the Northern Pacific. Due largely to its greater proximity to the international boundary, it was to have considerably more effect on the Kootenays than its earlier rival, even though its transcontinental main line, like that of the Northern Pacific, did not enter the study area.

A repetition of the kind of railway development noted at Nelson occurred somewhat further north in 1895, when two railway projects reached the mining camp of Sandon in the heart of the Slocan country. From the west the Nakusp and Slocan Railway was built in from Nakusp on Upper Arrow Lake through New Denver on Slocan Lake. Like the Columbia and Kootenay Railway at Nelson, it was an outlet to Revelstoke and the Canadian Pacific Railway, via water transport along the Columbia River-Arrow Lakes. From the east the Kaslo and Slocan Railway was built into Sandon from Kaslo on Kootenay Lake and served as a link, via Kootenay Lake and River, to the Great Northern Railway at Bonners Ferry in the United States. Thus both new lines were dependent upon steamboat services operating on the rivers and lakes. By 1895 these operations served all the major waterways of the Kootenays.
This, then, was the rail and water transportation pattern of the Kootenays in 1895. A number of routes had penetrated hitherto inaccessible areas. Access to the region was now possible from either north or south. It was still impossible, however, to travel through the area by rail alone. Water transport links were essential.

**The 1900 Railway Network**

From even a cursory visual comparison of Maps 5 and 6, it is apparent that the railway network became much denser and more complex in the 1895-1900 period. In 1896 a branch line was constructed along the Columbia River from Revelstoke on the Canadian Pacific main line to Arrowhead on Upper Arrow Lake, thus shortening the water distance between the transcontinental line and such points as Nakusp and Robson (See Map 6).

In the same year the occurrence first noted at Nelson was repeated at Rossland. The Red Mountain Railway from Rossland to the international boundary, and its United States counterpart, the Columbia and Red Mountain Railway from the border to Northport, linked the Kootenay centre with the Spokane Falls and Northern Railway, and thus with the Northern Pacific and Great Northern Railways at Spokane. The narrow (later standard) gauge Columbia and Western Railway provided Rossland with a second outlet to the Columbia River at Trail. In the following year, 1897, the Columbia and Western was extended along the Columbia River north to Castlegar and West Robson, directly across the river from the Robson terminus of the Columbia and Kootenay Railway (See Map 6).
Another branch line of the Canadian Pacific Railway was built in 1897. This ran from South Slocan on the Columbia and Kootenay Railway north to Slocan City on Slocan Lake, connecting via steamboat service on the lake to New Denver on the Nakusp and Slocan Railway.

The years 1898-1899 saw much new railway construction in the Kootenays. The Columbia and Western Railway was extended west to Midway through Grand Forks and the Boundary country during this time. To the east the British Columbia Southern Railway was completed from Lethbridge, Alberta (already linked to the Canadian Pacific main line) through the Crowsnest Pass and the towns of Fernie and Cranbrook to the steamboat dock at Kootenay Landing at the south end of Kootenay Lake (See Map 6).

In 1900 another railway reached Kootenay Landing. The Bedlington and Nelson Railway, connecting with the Great Northern, crossed the international boundary at Rykerts and extended north through Kootenay Landing to another steamboat connection on Kootenay Lake at Kuskonook.

In the same year the Canadian Pacific constructed two more short branch lines. One extended east from Nelson and the Columbia and Kootenay Railway along the west arm of Kootenay Lake to Procter, thus further shortening the water transport route on the Kootenay River system. The other was a branch of the British Columbia Southern Railway from Cranbrook north to Kimberley.

Other short rail lines constructed in 1900 included two Columbia and Western spurs in the Boundary area to the camps of Deadwood and Phoenix. In the East Kootenays the Canadian Pacific
Railway also constructed a short line from Fernie to Coal Creek on behalf of the Morrissey, Fernie, and Michel Railway.

In total, then, it can be seen that the railnet had expanded considerably in the five years after 1895. Many new areas, inland and distant from navigable waterways, had been penetrated for the first time. Railways were beginning to replace water transport, particularly where they paralleled rivers. In the West Kootenay all water transport routes except for those on the lakes had been rendered superfluous by railway construction. Only in the East Kootenay were river routes still an important link in the now predominantly rail oriented network. Access to much of the area had improved markedly.

The 1912 Railway Network

The railway network in 1912 represented the peak in railway evolution. Very few railways were to be constructed after this date, and no railway abandonments had yet taken place. Throughout North America, and elsewhere for that matter, the year 1912 was one of the years of peak importance in railway transportation. The Kootenays were simply representative in this respect. In the Kootenays, the twelve year period 1900-1912 saw the construction of numerous small branch lines and the penetration of many areas by new routes, as well as the arrival of additional rail links to points already served by rail. Within this period, the year 1902 was the first in which considerable construction activity occurred.

One of the important links to be constructed in 1902 was a railway bridge across the Columbia River at Robson, joining the
Columbia and Western Railway at West Robson with the Columbia and Kootenay Railway at Robson, and replacing the rail ferry service. Another new railway built in 1902 was the Kootenay and Arrowhead Railway between Larderau at the north end of Kootenay Lake, and Gerrard on Trout Lake (See Map 7). Lake boats connected with the new railway on both north and south ends.

At Grand Forks two additional railway lines were constructed during the same year. The Spokane and British Columbia Railway connected Republic, Washington with Grand Forks. A branch of the Vancouver, Victoria, and Eastern Railway (a company with rail lines in the Lower Fraser Valley and elsewhere) followed the Kettle River from Marcus, Washington north to the international boundary at Cascade, then extended west to Grand Forks and south to Republic, paralleling the Spokane and British Columbia Railway line between the two last named towns.

Another railway connecting with the Great Northern Railway in the United States, the Crows Nest Southern was built north across the border through Newgate, Elko, and Fernie to Natal and Michel in the East Kootenays. Reaching Swinton, south of Fernie, in 1902, it was not extended to Fernie until 1904, nor to Michel until 1908 (See Map 7). Also in the Fernie area, the Morrissey, Fernie, and Michel Railway extended operations in 1904. A second spur was built, from Swinton to Carbonado. The two lines were connected by British Columbia Southern and Crows Nest Southern trackage between Swinton and Fernie, not by the company's own lines (See Map 7).

In 1906 a much longer piece of construction, the Spokane International Railway (one of Wallace's examples of "bridge lines"
THE KOOTENAYS
RAILWAYS
1912

EXISTING LINES (1900)

WATERWAYS

LINES BUILT SINCE 1900:

KOOTENAY & ARROWHEAD
SPOKANE & BRITISH COLUMBIA (KETTLE VALLEY)
VANCOUVER, VICTORIA, & EASTERN
CROW'S NEST SOUTHERN
MORRISSEY, FERNIE, & MICHEL
SPOKANE INTERNATIONAL
EASTERN BRITISH COLUMBIA
CANADIAN PACIFIC WALDO BRANCH
KOOTENAY CENTRAL
GREAT NORTHERN (RELOCATED MAIN LINE)
[1965] was completed between Spokane and Yahk. Between Spokane and Bonners Ferry it closely paralleled portions of the Northern Pacific and Great Northern.

In 1909 another short spur line in the East Kootenays, the Eastern British Columbia Railway, was built south from the British Columbia Southern Railway at a point east of Michel to the town of Corbin. In the Boundary-Grand Forks area, a number of short branch lines were built in the 1900-1910 period by all three railways serving the region (Columbia and Western, Spokane and British Columbia, and Vancouver, Victoria, and Eastern) as can be seen from Map 7.

All of the remaining railway construction in the Kootenay area up to 1912 was undertaken by the Canadian Pacific Railway. Projects included a short branch line from Caithness, on the British Columbia Southern south of Cranbrook, to the community of Waldo, completed in 1912. A more ambitious project was the Kootenay Central Railway, between Golden on the transcontinental main line and Colvalli on the British Columbia Southern line, an all rail north-south link through the East Kootenay along the upper reaches of the Columbia and Kootenay Rivers. Work began on this project in 1910 and its progress by 1912 can be noted on Map 7. With its completion, the last important water transport route in the Kootenays would be paralleled by rail.

Such, then, was the extent of the railnet in 1912 at the peak of its development. More and more river valleys had been followed by railways, further diminishing the scope and importance of water transport. The Kootenays had now become very accessible by rail and entry from many directions, with a wide choice of different routes,
was now possible.

The 1968 Railway Network

The Kootenay railway network of today is like a skeleton of the 1912 network. It illustrates very little in the way of new construction, but much in the way of abandonment. New construction included the completion of the Kootenay Central Railway, referred to above, in 1915. Fifteen years later, in 1930, the Canadian Pacific constructed a line between Kootenay Landing and Procter along the west side of Kootenay Lake, thereby eliminating the need for a rail ferry service which had been in operation since the early 1890’s (See Map 8). Completion of the Kettle Valley Railway in 1916 outside of the study area, to the west of Midway, linked the Kootenays with Vancouver by a second rail line. To the east a line linked the Kootenays with Lethbridge and points east as early as 1899. In effect, then, this southern route, comprised of numerous railway fragments like the Columbia and Kootenay and the Columbia and Western Railways, had become equivalent to the other transcontinental lines spanning the area with its final rendering into an all rail route.

The only other new construction is under way at the time of writing. This is a line from Natal north to the Fording River being undertaken by the Canadian Pacific Railway, or as it is now known, CP Rail.

Railway Abandonments

Despite the construction of these lines, the theme of Kootenay railway evolution since 1912 has been abandonment. During the past fifty-odd years, the importance of the railway as a univer-
sal means of transport has been drastically reduced as the motor vehicle and airplane have taken over much of what previously travelled by rail. Railway abandonment has been the result all over the world as railway companies have fought to compete by streamlining operations and removing unprofitable branch lines. This has also been the case in the Kootenays.

The first Kootenay railway to be abandoned permanently was the Bedlington and Nelson Railway line between the United States border at Rykerts and Kuskonook on Kootenay Lake in 1913-1914, only thirteen years after its construction. It was followed in 1921 by the Red Mountain Railway and the Columbia and Red Mountain Railway between Northport and Rossland. In 1919 the Vancouver, Victoria, and Eastern Railway from Grand Forks to Phoenix was closed down, and so, in the following years up to 1935, were other branches of that line as well as branches of the Columbia and Western and the Spokane and British Columbia Railway in its entirety. In 1935 the rail pattern in the Boundary district became as it is today.

In the East Kootenay, the Waldo branch of the Canadian Pacific, south from Caithness, was abandoned in 1928; the Crows Nest Southern Railway was closed down in two sections: from Michel to Elko in 1926; and from Elko to Rexford, Montana, in 1936. The Eastern British Columbia Railway ceased to operate in 1934. Other lines to be abandoned included the Kootenay and Arrowhead Railway from Lardeau to Gerrard, in 1942; the Kaslo and Slocan Railway

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1 The Kaslo and Slocan Railway (narrow gauge) had been abandoned in 1910 and rebuilt (standard gauge) in 1914.
from Kaslo to New Denver, in 1955; and the Morrissey, Fernie, and Michel Railway, in 1958. The earliest line of the Columbia and Western Railway, between Rossland and Trail was closed down in 1966, and the Revelstoke to Arrowhead branch of the Canadian Pacific was abandoned in 1968. All of these abandonments are indicated on Map 9. As can also be seen from Map 8, the importance of water transport for links in the rail network had diminished to the service on Slocan Lake between Slocan City and New Denver.

This, then, describes the railways built and abandoned between 1912 and the present. The two new lines completed during the period were both links in major branch lines. Most of the railways abandoned, however, were either branch lines from the United States or short local feeder lines, most of them built in the 1900-1912 period.

Projected Railways

It is possible to portray cartographically, from the list of railways chartered in Canada (Dorman, 1938), the lines projected but never built, and to compare these with the much smaller number of lines which actually were constructed. In this way a visual contrast of some sort can be made between the objectives and the results of decision makers collectively. Such a map of projected routes was provided by Meinig (1962, p. 413) to illustrate the multitude of possible locations and thus location decisions faced by only one railway company, the Northern Pacific, in a relatively small area, the Columbia Basin. In this study Map 10 depicts the total pattern of projected routes for all the railways chartered
THE KOOTENAYS
PROJECTED RAILWAYS
WITH CHARTERS
1870-1930

NOTE: Detailed information only available for Canada
in the Kootenays. Since many of these were never surveyed or even accurately mapped, only an approximate location can be shown. However, for the purposes of this thesis, it is the general location of routes within the region, rather than their local siting, which is of interest.

**A Model of Railnet Evolution Based on the Kootenay Pattern**

This detailed description of railway evolution in the Kootenays can be simplified and summarized in the form of a stage model. Such a model can provide a better understanding of the process of Kootenay railnet evolution, as well as a more useful basis by which to consider the similarity of Kootenay railway evolution to that elsewhere. In the style of the model of network development in underdeveloped countries presented by Taaffe, Morrill, and Gould (1963), the model to be presented here is geometrically descriptive rather than quantitative.

In the above description it was apparent that each railway constructed in the Kootenays provided improved connections either with other parts of Canada or with the United States. It is thus possible to classify all Kootenay railways as either American or Canadian oriented. Accordingly, Figure 1 presents a schematic simplification of the actual stages of Kootenay railnet evolution, differentiating between Canadian and American lines.

**Stage I - 1885 - Transcontinental Routeways.** As shown in the first stage of Figure 1, the two political units, economically undeveloped, are separated by a straight international boundary. In the interests of national development transcontinental lines
SCHEMATIC SIMPLIFICATION
OF RAILWAY DEVELOPMENT
IN THE KOOTENAYS

RAILWAYS
WATERWAYS

CANADIAN
AMERICAN

Miles

1885
1896
1912
1968

* TRAFFIC GENERATING POINTS
are constructed parallel to the border. The area between these main lines is the area of interest. Both these transcontinental routes are built before there is detailed knowledge of natural resources or other potential traffic generating features in the area of interest which might affect their location.

**Stage II - 1896 - The Initial Development of Routes in the Study Area.** With the discovery of natural resource sites or the growth of other kinds of traffic-generating centres in the study area, rival tributary transportation routes are constructed to them from both the transcontinental lines, despite the presence of the international boundary which must be crossed by a number of these feeder lines. Thus each major traffic generating centre in the area will be served by two competing transportation routes.

**Stage III - 1912 - Protection of National Interests.** With the continued invasion of each political area by tributary routes of a foreign transportation system, there is a move not only to protect the interests of each political area, but also to provide a better front from which to invade the other country. Such a move is the provision of routes parallel with the international boundary and closer to it than the first transcontinental lines. They are constructed through both existing and potential traffic centres on their own side of the border unlike the earlier transcontinental lines which were built without regard for local traffic potential. In particular, they are constructed through traffic centres already raided by foreign lines in an attempt to divert traffic which had been crossing the international boundary. They also permit more effective invasion across the boundary into the other country since
their feeder lines would be shorter. In each case, of course, this advantage is counteracted by the presence of a similar, parallel route on the opposite side of the border. Accordingly, new invasion routes tend to be shorter than earlier ones.

**Stage IV - 1968 - Consolidation and Abandonment.** With the completion of the two parallel routes close to the border, invasion of foreign territory beyond these routes has become less economically attractive. The point has been reached where each half of the border area has become much more closely integrated with the rest of its national territory than with the area across the boundary. Each railway network expands and consolidates its position on its own side of the border. Short feeder lines are built, and both the area and its transport network become more closely knit together with the construction of new links and development lines. Although a few lines may still cross the boundary, most foreign lines in both countries will be abandoned as soon as they lose their economic viability. This process may be hastened by a steadily increasing importance of the boundary as a political, economic, and social divide.

The above attempt to identify the essential features of Kootenay railnet evolution, although greatly simplified, may help to demonstrate how difficult it would be to make conclusions of general applicability from the Kootenay experience. If the model represents a reasonable interpretation, similar network development could be expected in other areas only when certain basic conditions are fulfilled. In particular, there are a number of variables which
should be approximately equivalent on both sides of the border, as appears to have been the case in the Kootenays. For example, both sides of the border would have to be similarly attractive to exploitation and development through the provision of transportation routes. The difficulty of route construction would have to be about equal on both sides of the border, and the barrier effect (or lack of it) of the boundary should be the same for movement in both directions. Both sides of the border should be approximately equidistant from major trading centres and the ocean (for overseas trade) in their respective nations. There should also be equivalent perception and reaction by the decision making rivals on both sides of the boundary; there should be no delay by interests in one nation in keeping pace with the other for lack of any kind of resources, whether perceptive, economic, or entrepreneurial. From the start, both areas should be at an equivalent stage of development. Such a balancing of conditions on two sides of a border is rarely found in real world situations, and the transferability of our model of Kootenay railnet evolution in its totality is probably very limited, therefore.
The purpose of this chapter is to demonstrate that railway evolution in the Kootenays can be explained with a minimum of reference to the international boundary as a barrier. In fact, it is intended to show that railnet development can be largely explained in terms of two major elements, natural resources and rival railway interests.

National Expansion and Transcontinental Strategy

In many national and sub-national political units, the provision of a transportation system spanning great distances within the political entity has been of great importance in helping to unify that area. Railways, historically, were often the transport mode most significant in this regard. In North America this has been particularly true. Numerous writers, including Innis (1923), Riegel (1926), Glazebrook (1938), and Holbrook (1947), have noted the role of the first transcontinental railways in contributing towards national consolidation in both the United States and Canada.

The first transcontinental railways in both nations (Union Pacific in the United States, 1869; Canadian Pacific in Canada, 1885) were an explicit part of the national policy of westward expansion. Railway networks had developed extensively in the
eastern United States by 1860, and in eastern Canada by 1880, and with interest directed westward, railways were perceived as the obvious means of linking the western and eastern parts of the continent together. In both nations there was a parallel interest in westward expansion and political consolidation, the major difference being a time lag on the part of Canada. Because of the intensive study of the Canadian Pacific Railway by authors such as Innis (1923), it is sufficient here to point out briefly that this first Canadian transcontinental railway was constructed largely in competition with American interests in order to maintain Canadian (or British) sovereignty north of the 49th parallel from the Great Lakes to the Pacific Coast. Constructed over a decade later than the first American transcontinental, the Canadian Pacific was built concurrently with a rival American transcontinental, the Northern Pacific Railway. As Irwin (1939) has demonstrated, there was significant political rivalry between the backers of the Canadian Pacific and Northern Pacific Railways.

It is important to realize at this point that this first expression of railway rivalry was manifested on a continental scale. The study area of concern in this thesis was only indirectly affected by this rivalry. The Kootenays were not traversed by these early transcontinentals, and at the time of construction the region had little significance or effect on their location. Vance (1961) has called attention to the early lack of concern with local traffic generating possibilities in location decisions at the time of construction of the Union Pacific Railway. Later transcontinental railways were often built in a similar fashion. Much of the
North American west and in particular the Cordillera, was simply perceived as an empty and difficult area which had to be crossed to reach the Pacific Coast. This is borne out, for example, in Fleming's early surveys of Western Canada on behalf of the Canadian Pacific Railway (1877).

Regional Resource Development and the Evolution of Transportation Routes

The completion of the transcontinental railways made entry into the interior of the Pacific Northwest much easier. The "Inland Empire", a term coined in 1862 when the area had become famous for a series of gold rushes (Lavender, 1958, p. 347), comprised eastern Washington, northern Idaho, northeastern Oregon, western Montana, and southeastern British Columbia. It became the scene of "the mining frontier which spread from California eastward and northward" (Howay, Sage, Angus, 1942, p. 264). The area had first become known in the 1860's after a series of gold discoveries on both sides of the international boundary resulted in a rapid influx of American miners from the south and east. Entry into the British Columbia Kootenays to such discoveries as the Big Bend and Wild Horse Creek in 1863-1864 was made via the Columbia and Kootenay River valleys. The Dewdney Trail, constructed in 1865, was the first attempt to provide an all Canadian means of access to the Kootenays and to divert the trade and traffic away from the United States (Rossland Miner, May 23, 1896). As an attempt to compete with the American trails it failed, largely because the rushes were nearly over by the time the trail was completed. The north-
south river and trail transportation routes used by the Americans had succeeded in almost completely monopolizing the area's trade. Nevertheless this early attempt to connect the Kootenays with other parts of Canada by a route parallel to the border in competition with American routes which crossed it is significant as a preview of what was to follow during the period of railway construction in the region.

The Importance of Spokane

With the construction of the Northern Pacific Railway, the entry of a resident population, and the discovery of more and more mineral deposits the city of Spokane grew rapidly (population 1880, 350; 1888, 7000; 1890, 20,000). Soon after the completion of the Northern Pacific, a number of branch line railways began to radiate outwards from Spokane to the west, east, and south to such areas as the Palouse, the Big Bend, and the Coeur d'Alene. Resource exploitation and regional development in these areas depended on the provision of dependable transportation facilities. By 1888 many of these particularly resource rich areas had been linked to Spokane by independent rail lines (the Spokane and Palouse, the Washington Central, the Seattle, Lake Shore and Eastern, the Spokane Falls and Idaho, and the Coeur d'Alene Railway and Navigation--see Map 11). The net effect was one in which traffic into and out of a great part of the Inland Empire was channeled through Spokane. Why Spokane in particular? The site seems to have been nothing out of the ordinary, and one writer suggests that "it enjoyed less natural attraction than several of its neighbours" (Fahey, 1965, p. 4). More important appear to be situational factors (its location on the transcontinent-
tal railway linking it directly with the east and its general centrality within the area) and the decisions, or results of decisions, of various railway promoters together with the aggressive efforts of the city itself. Once the city of Spokane recognized its debt to the railways in existence by 1888 and experienced the tangible benefits of the increased traffic they brought, it "burned with railroading fever" (Fahey, 1965, p. 63). The Spokane Falls Review noted how the development of the Coeur d'Alene area had contributed to the city's growth and went on to point out that during 1887 and 1888, not only had the different lines originated and terminated more than 20,000 tons of freight monthly, but also that "fully 5000 people reached Spokane Falls by the various lines every month" (Jan. 1, 1889).

The Spokane Falls and Northern Railway

With the city's success in generating traffic east, west, and south by 1888, it was not surprising that Spokane promoters looked to the north as another area in the Inland Empire which could supply traffic and profit to the city and its entrepreneurs. The proposed railway was called the Spokane Falls and Northern. It was intended to extend to the Columbia River in order to connect with the Canadian Pacific Railway via a fleet of steamboats (Durham, 1912, p. 425; Fahey, 1965, p. 63).

The rationale behind this railway to the north does not seem unusual when seen in context. It was the last of railroads depicted on Map 11 to develop and obtain the trade of a sector of the potential hinterland of Spokane not yet effectively linked to
the city. Although even from the start it had been projected to tap the Kootenays, the Colville area of northern Washington was also seen as potentially significant in increasing the prosperity of Spokane after completion of the railroad (Spokane Falls Review, April 18, 1888). Such a railway would, indeed, approach four of the seven mining areas in the Inland Empire tributary to Spokane: the Kootenay, the Metaline, the Colville, and the Okanogan districts.

The Growth of Mining and Railway Rivalry

Many railways in the Kootenays were built almost entirely to tap the mineral resources of the region. Mining was the key-word in the economic development of the area. While the mines, ore bodies, and mining camps were the *raison d'être* for interest and competition in the Kootenays, access to the various centres of mining activity was essential. Thus there was both a competition for the rich ores between mining companies over mineral claims and smelters, and a rivalry for the remunerative traffic in ores and supplies between transportation companies over charters and route location. At first, before the railway network had begun to take shape, this transportation rivalry between companies and routes applied mainly to the steamboat operations on the lakes and rivers which were tributary to the major transcontinental railways. As railways became more and more important, they in turn became the chief rivals for transportation serving the mining industry.

Rivalry to Nelson

The first example of railway rivalry in the Kootenays came
right at the outset—with the construction of the first railways to enter the region. These, the Columbia and Kootenay Railway and the Nelson and Fort Sheppard Railway, were both constructed to the town of Nelson. The discovery of rich silver and copper deposits five miles from Nelson on Toad Mountain in 1886 was, in the words of some of British Columbia's most famous historians, "the 'find' that really made Kootenay" (Howay, Sage, Angus, 1942, p. 270). A rush to the Kootenays followed in which most of the prospectors were American and many of the promoters were Spokane businessmen. Although transportation in the area was difficult at first, some ore was shipped out in relatively small quantities by pack horse and riverboat to smelters in Montana. In the context of this real need for improved transportation facilities in the area (Fahey, 1965, p. 96-97), it is understandable that railway lines were soon constructed. Both of the railways built to Nelson, then, must be explained in terms of supplying a demand for transport by the mining industry.

Even at the outset of railway construction in the Kootenay region, cross-border rivalry was strong. The first promoters of the Columbia and Kootenay Railway were American (British Columbia Statutes, 1888), and although a provincial charter was obtained as early as 1883, the project was disallowed by the federal government because it "would in all probability become a feeder to the Northern Pacific Railway" (British Columbia Sessional Papers, 1884, p. 175). As Roy has pointed out (1963, p. 68-69), "if this line secured business during the Canadian Pacific's construction period, the federal cabinet contended, American traders would establish themselves in
the area and would be difficult to dislodge." It was not until
the project's promoters became Canadians and included a superin-
tendent of the Canadian Pacific Railway that the charter was grant-
ed. At the time of the original application by American steamboat
operators for the charter for such a railway between the Columbia
and Kootenay river systems, such an operation was seen as only a
simple "portage" line in a predominantly water transportation
network oriented southwards to the United States. In fact, the
original name of the project in full was the Columbia and Kootenay
Railway and Transportation Company, and this became the Columbia
and Kootenay Railway and Navigation Company (Dorman, 1938, p. 169-
170).

By the time Canadian interests and the Canadian Pacific
Railway had become involved in the project in 1887-1890, however,
two important new developments had occurred. One was the discovery
of ore on Toad Mountain in 1886 as already noted, the other was
the attempt of the Spokane Falls and Northern Railway to extend
into the area from Spokane (Fahey, 1965, p. 93). These develop-
ments meant that the Canadian backed Columbia and Kootenay Railway
would be considerably more than a "portage" line. It would now
be a branch line of the Canadian Pacific from Revelstoke. The
Annual Report of that company for 1889 clearly states that the
Columbia and Kootenay charter was secured "to prevent the in-
vasion by foreign lines of the Kootenay District, in British
Columbia--a district rich in precious metals and other natural
resources" (p. 18).
The American railway competing with the Canadian Pacific's Columbia and Kootenay Railway was the Nelson and Fort Sheppard, a subsidiary of the Spokane Falls and Northern, with which it connected at the border. The Spokane Falls and Northern's attempt to enter the Kootenays was not made easy for Canadians were well aware of what the proposed railway meant—the diverting to the south of wealth that should remain in Canada. The first application for a charter to Nelson was unsuccessful, but the Spokane Falls and Northern was extended north from Colville towards the border in any case, and steamboat connections with the Canadian Pacific at Revelstoke, via the Columbia River-Arrow Lakes, were made as planned. Largely due to the great demand for improved transportation in the Kootenays the proposed railway received the support of various groups in the province, and despite opposition a charter was obtained on its behalf by a group of British Columbians (Fahey, 1965, p. 123f). After further delays from Ottawa a charter from the federal government was also granted. Thus the first American railway into the Kootenays, the Nelson and Fort Sheppard, was completed in 1893. Despite its initial charter by Canadians, it owed its construction to American interests in Spokane.

For both of the railways built to Nelson mining traffic had provided the main incentive, but cross-border intercompany rivalry had brought about the evolution of two railways both at the same time. Since these lines were the first to be built and because later railways often followed a similar pattern, they have been examined in greater detail than subsequent developments will be.
By 1893 when both these railways had been constructed to Nelson, considerable mining activity had shifted to other areas in the Kootenays such as the Slocan and Rossland.

Rivalry to the Slocan

It was a significant testimony to the richness of the ores of the Slocan district that, within four years of the first discovery of minerals, mines were in production and the area was served by two railways, the Nakusp and Slocan and the Kaslo and Slocan. Both railways were rivals for the ore traffic of the mines in the area centred at Sandon, and both were constructed during the year 1894. The Nakusp and Slocan was promoted by Canadians who wanted to retain the traffic in Canada; the Kaslo and Slocan, on the other hand, was constructed and financed by the Great Northern Railway in the United States. The Canadian line was supported by the provincial government which realized that without it, the Kootenay trade "otherwise would be diverted to the south, and lost to British Columbia" (Davie, 1894, p. 3). The provincial Attorney-General was able to persuade the Canadian Pacific, with provincial backing, to construct and operate the line. Rivalry between the two companies was fierce; it even came to the point of open hostility when at one point employees of the Kaslo and Slocan tore down a station of the Nakusp and Slocan (Affleck, 1958, p. 29). It is quite clear that the rationale for both these railways was essentially the considerable mineral traffic of the Slocan (Corley, 1967, p. 1; Canadian Pacific Railway, Annual Report, 1893, p. 13-14). Both railways were short feeders to the transcontinental main lines.
of the parent railroads, the Canadian Pacific and the Great Northern. They were both "portage" lines insofar as they were isolated from all other rail trackage in the region and relied on connections via the steamboat services on Arrow and Kootenay Lakes.

The rationale for the construction of two other lines by the Canadian Pacific can also be seen in the mining importance of the Slocan. Both of these other railways were constructed to shorten the distance and problems of water transport along rivers or varying navigability. The first of these was the branch line south from Revelstoke to the head of Upper Arrow Lake which, by making transportation along that route much easier and dependable on a year round basis, was intended to stimulate and divert the trade of the Kootenays via Revelstoke and the Canadian Pacific main line (Roy, 1963, p. 31; Canadian Pacific Railway, Annual Report, 1892, p. 11). It did, of course, shorten transport by water from Robson and other points on the Columbia River system as well as from Nakusp and the Slocan, an important factor in the rivalry with American lines in the Kootenays.

The second of the new lines was the Slocan branch built north from the Canadian Pacific's Columbia and Kootenay Railway to Slocan Lake. Once again the Slocan mining traffic was the main reason for construction (Canadian Pacific Railway, Annual Report, 1897, p. 8). This meant that in its attempt to rival the Great Northern and American interests in the Slocan the Canadian Pacific had, along with the Nakusp and Slocan Railway, "another entrance to the Slocan" (Howay, Sage, Angus, 1942, p. 254).
Rivalry to Rossland

"One of the richest mines the world has ever seen" (Whit-taker, 1949, p. 2) was discovered on Red Mountain at Rossland in 1890. With the discovery of other mines and the commencement of gold and copper shipments in the following years, the area had come into real prominence by 1893. Mules, wagons, and riverboats were all used to ship ore to the nearest point on the Spokane Falls and Northern Railway, but costs of this kind of transportation were prohibitive (Whittaker, 1949, p. 7). Once again railways were required, and two companies began construction. Competition was intense, each line attempting to block the other from reaching the town (Fahey, 1965, p. 155). Despite the fact that both companies were promoted by Americans, they had opposite orientations, one Canadian and the other American. Of the two lines, the Columbia and Western Railway was provided to transport ore to a newly constructed smelter at Trail; the Red Mountain Railway, on the other hand, was built to move ore to smelters in the United States. The Columbia and Western not only retained the mining traffic in Canada but also in 1897, the year following its first construction, was extended north to West Robson to connect with the Columbia and Kootenay Railway and thus with the Canadian Pacific system. It would seem, in fact, that the Canadian Pacific was at least partly behind (morally if not financially) the Columbia and Western from the outset (Fahey, 1965, p. 172-173). Even at the time the Columbia and Western was seen as an important factor in maintaining Canadian connections with Rossland and in preventing the town from being "at the complete mercy" of the American interests behind
the Red Mountain Railway (Rossland Miner, Sept. 23, 1897). In 1898 the Columbia and Western was purchased outright by the Canadian Pacific Railway and thus further competition between the two railways at Rossland was truly Canadian versus American. The Canadian Pacific explained the rationale for this move as follows: "Rossland having become the principal mining centre in British Columbia, it was necessary either to build an independent line to that place or acquire the Columbia and Western Railway, and the latter was clearly the wiser choice" (Annual Report, 1897, p. 8).

The Red Mountain Railway, chartered in 1893, followed the most direct route between Rossland and the Spokane Falls and Northern Railway, of which it was another subsidiary, and thus to Spokane. As the Nelson and Fort Sheppard had done earlier at Nelson, the Red Mountain line (and its United States counterpart the Columbia and Red Mountain Railway) tied the Kootenay mines at Rossland with the entire American railroad system, eliminating transhipment problems which were still present on the rival Canadian lines in the Kootenays. A link with Spokane also appears logical since many of the companies responsible for mining development at Rossland were American owned and originated in Spokane (Church, 1961, p. 86). In fact "at the beginning of 1896, all the major claims of Rossland were owned by Americans, most of whom were from Spokane" (Fahey, 1965, p. 158). As in the case of the Nelson and Fort Sheppard, the presence of a Canadian oriented line stimulated American competition and helped to explain the rapid construction of the Red Mountain line.
Rivalry on the Waterways

As noted in Chapter 2, the water transport routes of the Kootenays must be considered as part of the railnet of the region. Originally the major water routes along the Columbia and Kootenay river systems were served by both Canadian and American navigation companies unaffiliated with any railway companies. All railways were served equally. The largest of these companies, the Canadian owned Columbia and Kootenay Steam Navigation Company, operated on almost all the waterways in the Kootenays by 1896. As Affleck put it (1958, p. 27), this company was "in a highly desirable position." It served the Canadian Pacific, Columbia and Kootenay, and Nakusp and Slocan connections on the Columbia River and Arrow Lakes. At Trail it also served the Columbia and Western Railway with connections to the Canadian Pacific. It also connected with the Spokane Falls and Northern Railway at Northport and with its subsidiary, the Nelson and Fort Sheppard, at Nelson (Affleck, 1958, p. 27). It brought traffic to the Great Northern Railway at Bonners Ferry on the Kootenay River in Idaho from the Kaslo and Slocan at Kaslo and from other points.

As the mining traffic increased, however, the capacity of these navigation companies came to be considered inadequate (Canadian Pacific Railway, Annual Report, 1896, p. 9). What followed, therefore, was predictable; the two giant international rival transcontinentals, the Canadian Pacific and the Great Northern, carried their rivalry in rail transport over to the arena of water transport. The Canadian Pacific acted first by acquiring the Columbia and Kootenay Steam Navigation Company. As the Canadian
Pacific stated at the time, "The Company has been at a great disadvantage in reaching the traffic of the mining districts of Southern British Columbia in having to depend upon steamboat connections controlled by other parties. The rapid growth of the traffic, the high rates exacted, and the inadequate service performed" thus led to the purchase of the steamboat company and the putting under construction of three additional steamers (Canadian Pacific Railway, Annual Report, 1896, p. 9).

The immediate result was the curtailing of steamboat service by the Canadian Pacific to the Great Northern at Bonners Ferry and the Nelson and Fort Sheppard at Nelson. Kuskonook became the terminus for water transport service on Kootenay Lake. This led to the construction of new railways by the Great Northern and the acquisition by that company of a somewhat smaller steamboat operation, the International Navigation and Trading Company, on Kootenay Lake. For over a decade intercompany rivalry between the Canadian Pacific and Great Northern Railways was also expressed in energetic competition between their water transport services in the area.

Rivalry to the Crowsnest and Kootenay Lake

Despite the moves of the Canadian Pacific to compete with American oriented railways, Canadian attempts to retain the Kootenay mining trade for Canada were relatively unsuccessful. Access from United States centres to the south was relatively easy; access to the Kootenays from Canadian centres to both the east and west was relatively more difficult due to the topographic grain of the region; and access from the north, via the Canadian Pacific main line, was
long, circuitous, and involved a number of transhipments between rail and water. At the same time, no Canadian centres comparable to Spokane were as near the region as the American town. The mileage by rail to most points in the Kootenays from Spokane was of the order of 200-250 miles. The mileage to the same points from Vancouver was 500-600 miles, from Calgary was 350-450 miles, and for both necessitated changing from rail to water, and to some points, back to rail again (McCulloch, 1938, p. 2-3). In terms of time, Vancouver was seven times as far away from the Kootenays as Spokane in the 1890's, Calgary about four or five times as far (Roy, 1963, p. 37).

The result was, as has been noted, a tendency for the region to be tributary to Spokane. This tendency was perpetuated by the fact that, at this time, most entrepreneurs and individuals exploiting the region had entered via Spokane and thought, for the most part, only in terms of interchange with and through that centre. The net of American railways which served the Kootenays areally portrays this fact in the sense that they all led to Spokane, almost as spokes to the hub of a wheel, and this pattern was to continue with further construction of American lines into the area.

Canadian interests were well aware of the problem of Kootenay trade being diverted southwards. As early as the 1860's the Dewdney Trail was built in an attempt to alter the direction of trade flows. Some such as Sproat, who visited the area on behalf of the provincial government in 1884, thought that the construction of the transcontinental main line of the Canadian
Pacific Railway would be sufficient to change the orientation of the area (British Columbia Sessional Papers, 1884, p. 310,323). That this did not happen has already been made clear. The Kootenay region was, in fact, after the completion of the Canadian Pacific main line, "the last important area in Canada which was cut off from the rest of the national economy" (McDougall, 1968, p. 73).

The subsequent construction and acquisition of short branches and "portage" lines by the Canadian Pacific, namely the Columbia and Kootenay, Nakusp and Spokane, and Columbia and Western, were relatively unsuccessful in comparison with the direct all rail routes constructed north from the United States.

In order to keep the Kootenay trade in Canada, another attempt similar to the Dewdney Trail was necessary. From surveys conducted it had been established that a line from Alberta to the east, through the Crowsnest Pass, was more feasible than a direct link with the Pacific Coast. It was well known that the Hope Mountains would be difficult to penetrate with a railway (Roy, 1963, p. 40). A railway through the Crowsnest Pass, on the other hand, had been proposed and chartered as early as 1888 (Dorman, 1938, p. 57), and the Canadian Pacific had hoped to construct such a line as early as 1891 "to protect the Company's interests in southern British Columbia, including the Kootenay district which is now assuming great importance owing to its remarkable mineral developments" (Canadian Pacific Railway, Annual Report, 1891, p. 12). Finally in 1897 the Canadian Pacific reasserted its interest in such a line, emphasizing that any further delay would be "extremely dangerous", and stated that steps had been
taken towards "commencement of the work" (Canadian Pacific Railway, Annual Report, 1896, p. 10). Concern was expressed at the same time "that unless your Company occupies the ground, others will, the demand for shipping and travelling facilities being most urgent" (Canadian Pacific Railway, Annual Report, 1896, p. 10). The Canadian Pacific was aware, for instance, that the Great Northern was intending to construct a branch north across the border to Kuskonook, near the projected terminus of the Crowsnest line (Affleck, 1958, p. 32). Without such a line through the Crowsnest, the Canadian Pacific "would continue at a disadvantage in competing with the American lines (which have already reached Nelson, Rossland, and other important centres in these districts) until it shall have direct railway connections of its own. Until then the greater part of the mining traffic will be beyond its reach, and will continue to be, as at present, carried by the American lines southward" (Canadian Pacific Railway, Annual Report, 1896, p. 10). And, as the report went on to conclude, "the interest of the country at large is so much concerned in this question that your Directors confidently expect reasonable assistance at the hands of the Dominion Government." Nevertheless construction of the line was delayed. With the financial depression of the mid 1890's the Canadian Pacific was unable to obtain government assistance for several years, despite the confident expectations voiced above (McDougall, 1963, p. 78-79).

Although the need to compete for the mining traffic of the Kootenays appears to have been the most significant aspect of the rationale for the Crowsnest Pass Railway, there were other reasons as well. The federal government wanted to link the area with the
rest of the Canadian economy (Macpherson, 1959, III, p. 373). Such a line could also be used by the Canadian Pacific on a broader, continental scale along with the Soo Line Railway, an American subsidiary of the Canadian Pacific in the United States midwest, as part of a through route to Chicago from the Pacific Coast in competition with such American lines as the Great Northern and Northern Pacific. It could also serve as an alternative to the main line to the north, and as a means of tapping the traffic of Spokane (Vaughan, 1920, p. 222), a development that was to occur later. The federal subsidy and provincial land grants were an additional incentive. The major attractions of course were the rich metal ores of the Kootenays and the rich, untouched coal fields of the Crowsnest Pass area. With the construction of the railway, development of the coal began immediately and a branch line to the rich lead-silver-zinc ores of the Kimberley area was also constructed.

With the completion of the Crowsnest Pass Railway (under the charter of the British Columbia Southern Railway) in 1898, it might appear that the Canadian Pacific had finally captured the Kootenay mining trade for Canada. Not only was the location of this line strategic, there had also been the almost simultaneous acquisition of the Columbia and Western Railway and the Columbia and Kootenay Steam Navigation Company. Such a victory did not occur in fact, and there followed a concentrated effort by the Great Northern to improve still further its means of access to the Kootenays through acquisition and construction of new railway routes. It acquired the International Trading and Navigation Company in 1898 (see p. 51), and in the same year purchased the
controlling interest in the Spokane Falls and Northern, with its subsidiaries into the Kootenays, the Nelson and Fort Sheppard and the Red Mountain Railways. The Bedlington and Nelson Railway was constructed north to Kuskonook to compete with the newly completed Crowsnest Pass line. The threat of this railway, chartered in 1897, was in fact another stimulant to the construction of the Canadian line (Affleck, 1958, p. 32). With the termini of both these railways in close proximity to each other near the south end of Kootenay Lake at Kootenay Landing-Kuskonook, the site became an important transhipment centre for ores from the Nelson, Slocan, and Kootenay Lake mining camps transported south along the lake by steamboat. The Canadian Pacific's attempt to intercept water traffic bound for Bonners Ferry and the Great Northern main line was thus countered by the Great Northern shortening the water route, and extending a branch line in its stead to the new Canadian transshipment site. Intercompany rivalry was leading not only to the evolution of new transportation routes, but also to the replacement of the slower and less satisfactory water transport system by rail lines. Further evidence of this in the same area was provided in the construction, under the British Columbia Southern charter, by the Canadian Pacific in 1900 of a rail extension from Nelson east to Proctor. This shortened the water distance between Nelson and Kootenay Landing as well as (and more importantly) by-passing the often frozen and thus impassable western arm of Kootenay Lake (Affleck, 1958, p. 13).

Another counterthrust by the Great Northern into Canadian Pacific territory was the Crows Nest Southern Railway built into
the East Kootenays. The rationale for this line was rivalry over the coal fields already reached by the Canadian Pacific. The Crows Nest Pass Coal Company, the major coal mining company in the area, was a Great Northern Railway subsidiary and the Morrissey, Fernie, and Michel Railway with its branch lines to the coal mines, was owned by the coal company and hence also a part of the Great Northern system (Corley, 1967, p. 3). With this investment in the area, it was only to be expected that the American railway would construct a line connecting it with its main line, at the same time competing with the Crowsnest branch of the Canadian Pacific.

Despite the action taken by Canadian interests to provide a direct all rail line into the area, the Great Northern was thus able to tap the traffic potential of the line in two places, linking the Kootenays even more closely and effectively with the adjacent United States. This was done simply by constructing two new short feeder lines north across the border from the Great Northern main line. As in the cases of earlier American rail invasions of the Kootenays, the boundary did not prevent the southwards flow of the valuable heavy tonnages of ore and concentrates to the United States.

Rivalry to the Boundary

The next scene of mining activity in the Kootenay district was the Boundary country in the west. Rich copper ores had been discovered here as early as 1891, with development beginning two or three years later, shipments being made in "trains" of pack animals (Howay, Sage, Angus, 1942, p. 284).
The first railway to obtain a charter to enter the Boundary area was the Columbia and Western in 1896, and this was an additional reason for which the Canadian Pacific found it desirable to acquire that company. Extension of this railway to Midway by early 1900 was achieved not only to tap the mining traffic of the Boundary (Canadian Pacific Railway, Annual Report, 1898, p. 6), but also as with the Crowsnest branch, to provide a further link in the Canadian Pacific's "south line" through British Columbia (McCulloch, 1938, p. 4; Roy, 1963, p. 42). At the same time as the Columbia and Western reached Midway, two spurs were built to mines at Deadwood and Phoenix.

Although the first to supply rail service to the Boundary mining area, the Canadian Pacific was not to remain unchallenged for long. Two competing railways were also serving the Boundary by 1902. The first of these, the Spokane and British Columbia Railway, was an independent Canadian enterprise "to bring ores from the mines at Republic (Washington) to the Granby smelter at Grand Forks" (Corley, 1967, p. 5). For the first time a Canadian railway had crossed the international boundary in order to tap resources in the United States. While this mine traffic operation south from Grand Forks was the primary raison d'etre for the railway, its charter also permitted it to extend north along the Kettle River and west to Midway and Hope.

The third railway into the Boundary district, the Vancouver, Victoria, and Eastern, was another attempt of the Great Northern to compete with Canadian interests generally and the Canadian Pacific specifically. Originally a Canadian enterprise to build a railway from Vancouver through southern British Columbia to Ross-
land (Roy, 1963, p. 47-48), the Vancouver, Victoria, and Eastern was subsequently taken over by the Great Northern and its charter was used to construct future Great Northern extensions into southern British Columbia between the Boundary district and the Lower Fraser Valley. By linking the Boundary area with the east and providing a second outlet for Republic ores, the Great Northern had, in one move, provided effective competition for both the Columbia and Western and the independent Spokane and British Columbia. Both Canadian lines attempted to prevent the Great Northern's subsidiary from crossing their lines where necessary but such actions only delayed the American railway a short time. In the following years the Great Northern pushed further westward, reaching Midway by 1906 in its construction of a "third main line" (third after the first line to Everett, the second to Portland—see Map 12) to the Pacific Coast at Vancouver. Such a through east-west route was in direct rivalry with the Canadian Pacific's proposed "south line" through British Columbia. Although they extend beyond the region of study in this thesis, both of these lines were to extend, parallel, to Vancouver through the Okanagan, the Similkameen, and the Lower Fraser Valley. As can be seen from Map 12, the Canadian Pacific line evolved entirely in Canada, whereas the Great Northern proceeded westward with little concern for the international border, crossing it and re-crossing it wherever the easiest route or some traffic generating point dictated. It is of interest to note that where the Hope Mountains rendered it impossible to the two railways to run parallel to each other, they were forced to co-operate and operate jointly one stretch of railway (See Map 12). Once again
SOUTH LINE OF THE CANADIAN PACIFIC AND THREE MAIN LINES OF THE GREAT NORTHERN IN 1916
intercompany rivalry had influence railway evolution in southern British Columbia.

With further developments in the Boundary area the Spokane and British Columbia Railway, or the Kettle Valley Railway as it became known, was first backed and later leased by the Canadian Pacific for more effective service in competition with the Great Northern. By 1931 it lost its separate identity and was completely absorbed into the Canadian Pacific Railway system (Corley, 1967, p. 5). Once again a small independent line had disappeared in the face of rivalry between the two giant transcontinentals.

Rivalry to the Lardeau

Another scene of intercompany railway rivalry in the Kootenays was the Lardeau district to the north of Kootenay Lake. In 1898 the Great Northern announced that an extension would be built north from its terminus at Kuskonook along the east side of Kootenay Lake to the Trout Lake area in the Lardeau. The Canadian Pacific countered with a proposed railway extension from Arrowhead to Kootenay Lake through the Lardeau (Affleck, 1938, p. 34). Indeed, all Canadian Pacific Railway maps of the period show such a proposed extension. The Great Northern obtained a charter for the Kaslo and Lardo-Duncan Railway and in 1901 both companies began constructing parallel lines north from the upper end of Kootenay Lake. The Canadian Pacific was able to delay Great Northern construction over a legal matter for a time, and since the area's mining boom turned out to be relatively small and short-lived, the American railway abandoned the project before rails were ever laid.
Only the Canadian Pacific's Arrowhead and Kootenay Railway was built, and only to Gerrard; the extension to Arrowhead was never constructed. Intercompany rivalry over potential mining traffic had again led to new railway construction. Like other lines built in the Kootenays, the Arrowhead and Kootenay Railway was entirely dependent on steamboat connections.

A Counterthrust to Spokane: Canadian Retaliation

The rationale for the Spokane International Railway is more complex than that for many of the railways in the Kootenays. It was, essentially, constructed as a link between Spokane and the Canadian Pacific Railway, but at whose instigation is not completely certain. Some authorities (e.g. Moir, 1940, p. 6) suggest that the Canadian Pacific was responsible; others (e.g. Graham, 1963, p. 117), that Spokane interests promoted the railway. It would appear that both parties were involved and wanted the link for different reasons (See Chapter 4). As it was, the Spokane International proper only ran from Spokane to the border. The Canadian Pacific constructed the link between the boundary and its Crowsnest branch. For both parties competition with the American transcontinentals, the Great Northern and the Northern Pacific, was of central importance. Spokane interests desired lower freight rates on eastbound shipments than either of the two American railways would give (Fahey, 1965, p. 210-211). By linking the city with the Canadian Pacific, Spokane would, in effect, be situated on a third transcontinental railway and one that, by virtue of the Crows Nest Pass Agreement alone, would provide lower rates.
From the beginning the Canadian Pacific also displayed an interest in the project. Not only did it find it necessary to finance the project in part from the outset, it also obtained an option for control, brought about an agreement by which no other transcontinental would be permitted to obtain control for a period of fifty years (Durham, 1912, p. 528), and in 1916 finally purchased a controlling interest in the company. The Canadian railway's interest in such a line appears to have been primarily motivated by competition with the Great Northern. In retaliation for the most recent Great Northern thrusts into Canadian, and thus Canadian Pacific, territory in the Boundary district, the Canadian company invaded the American railway's hinterland. As Fahey (1965, p. 210) has noted, it "could have entered Spokane anytime in the past ten years but stayed out of Hill's (the Great Northern's president) territory until he invaded theirs." Again intercompany rivalry was stimulating railway construction, for without the Canadian Pacific's interest in the Spokane International it is doubtful that it would ever have been constructed (Wallace, 1965, p. 12).

Later Railway Developments

In the years following 1906 the only railways affected by active rivalry were spur lines constructed in the Boundary district and lines built between that area and Hope, outside the study area. Both cases, again involving the Canadian Pacific and the Great Northern, have been referred to earlier (See p. 59).

Other railway construction in the area was not extensive but falls into two general categories; short spur lines, and consolidation
lines of the Canadian Pacific. The short spurs constructed were not numerous. American interests from Spokane built the Eastern British Columbia Railway in order to ship out coal from property they owned. The Canadian Pacific constructed a short line from Caithness on the Crowsnest branch to Waldo, already served by the Great Northern's Crows Nest Southern, in order to compete for local forest and agricultural traffic. Neither of these lines was very long-lived, and both were built to exploit local resources.

More significant in terms of mileage and the degree of permanency were the two lines constructed by the Canadian Pacific in a move to strengthen and consolidate its position in the Kootenays. The first of these railways was the Kootenay Central, a line intended to link the Crowsnest branch with the transcontinental main line, just as the earlier acquired steamboat company had linked the various scattered lines of the Canadian Pacific with the main line over the Columbia River system. A long term project begun in 1910 and completed in 1915, the Kootenay Central was not regarded as urgent (in the manner which lines built to compete with American railways had been). At the same time it was looked on as a means of encouraging long term settlement and development in the East Kootenays, and this in turn would generate traffic (Canadian Pacific Railway, Annual Report, 1910, p. 8).

The second consolidation line of the Canadian Pacific was the railway along the west side of Kootenay Lake completed in 1930. The rationale for this project was the elimination of the transhipment problems, inconvenience, and delay which resulted previously with the continuous loading and unloading of railway cars, freight,
and passengers on barges and ferries. With its completion, the Canadian Pacific had finally made its "south line" across British Columbia an all rail route from the Pacific Coast to the Crowsnest.

From this investigation of later railway developments it can be seen that intercompany rivalry was no longer as significant in the Kootenays. The Great Northern was beginning to retreat from the area and the Canadian Pacific was strengthening its network and its position there.

Renewed Rivalry: Rediscovery of the Crowsnest

Surprisingly enough considering the numerous abandonments of railways and the relative decline in the importance of rail transport generally, cross-border intercompany railway rivalry between the same two companies was renewed in the area during 1968. The development of large new coal reserves in the Natal-Michel area by Kaiser Steel for Japanese interests was the occasion. Both railway companies were anxious to obtain a share of the traffic. While the Canadian Pacific's Crowsnest branch still traversed the area, the Great Northern's old Crows Nest Southern line had long been abandoned and its right of way occupied by roads and other obstacles to rebuilding. A new charter had to be obtained to permit the Great Northern to re-enter the area and accordingly, the Kootenay and Elk Railway was incorporated jointly by the Great Northern and Crows Nest Industries, the American owned company which held the rights to the coal reserves. The 70 mile route between the coal fields and the Great Northern was surveyed, and the American railway announced that its coal rates would be lower than those published
by the Canadian Pacific. There followed considerable verbal rivalry between the two railways and their supporters (Vancouver Sun, Jan.-March, 1968). The Canadian Pacific was forced to match the lower rates and convince the federal government that to charter a link with the Great Northern would be against Canadian interests. It would appear that this was successful insofar as the Great Northern has, to date, not been permitted to enter the Kootenays again. The Canadian Pacific, on the other hand, obtained a charter for a 34 mile branch line to coal reserves of its own near the Fording River north of Michel. Once again, this time in the present day, rivalry over mineral resources in the Kootenays has led to new railway developments. In view of the hypothesis central to this thesis, it would appear that the boundary has gradually become more effective as a barrier to American railways.

The Rationale for Railway Abandonments

The pattern and nature of railway abandonments in the Kootenays is closely related to their development. Just as rivalry influenced their growth, so the aftermath of that rivalry was reflected in their decline. The obvious reason for most railway abandonments or for that matter, the discontinuance of any mode of transport is the loss of its economic viability. This, as Patmore discusses (1965, p. 75-76), may occur for three different reasons: a) competition by road or other transport mode, b) loss or modification of original traffic flows, or c) overduplication as a result of competition during construction. It is interesting to relate this to the pattern of abandonments in the Kootenays.
For the most part Kootenay railway abandonment occurred early, most of it before 1920, almost all of it before 1930, when intermodal competition was relatively insignificant. Patmore's second factor is much more relevant. Railways were built into the Kootenays essentially to serve the mining traffic; when the mines were depleted or became uneconomic the rationale for many railways was also gone, and like the mines they began to disappear. This was the case in the Boundary mining area by 1920, when much of the railnet there had been abandoned. It was also true to a greater or lesser extent at the other mining centres at different times: at Rossland, in the Crowsnest, and in the Slocan. In a number of cases, such as the Canadian Pacific's Columbia and Western at Rossland, removed in 1966, the trackage had remained long after the mine traffic had disappeared and served as a means to transport general freight until it finally succumbed to road competition in the 1960's (McDonald, n.d., p. 5). In both the Slocan and the Lardeau Canadian Pacific abandonments resulted from a similar diminishing in the volume of general traffic shipped by rail (Currie, 1959, p. 388-389). Abandonment of the Arrowhead branch was hastened in 1968 by the rising waters resulting from the construction of new hydro-electric dams on the Columbia River system.

It is the third factor noted by Patmore that is most relevant to the themes of this thesis and the spatial pattern of abandoned railways in the Kootenays. Overduplication of railways undoubtedly occurred during the development of the railnet when both Canadian and American companies attempted to serve every mining area in the region. In most areas one railway could probably have
provided adequate service (it would be difficult to verify this), but with the arrival of two there resulted a more competitive situation with lower rates and better service. There was even overduplication of lines constructed by the same company. The Canadian Pacific, for example, constructed lines into the Slocan from both the west and the south. Another example is the Great Northern's Bedlington and Nelson Railway to Kuskonook which "drew traffic from the GNR's Nelson-Northport-Spokane route", the earlier Nelson and Fort Sheppard-Spokane Falls and Northern Railways (Affleck, 1958, p. 41). The two rail routes were generally parallel and one of them was clearly unnecessary insofar as they both tapped the Nelson, Slocan, and Kootenay Lake mining areas on behalf of the Great Northern. The newer and more direct of the two lines, the Bedlington and Nelson, bypassed the city of Nelson in favour of Kaslo. In the face of Nelson's opposition however, the Great Northern was unable to have the Nelson and Fort Sheppard Railway "rubbed off the map" (Affleck, 1958, p. 41), and so the Bedlington and Nelson line was abandoned instead. Not only was it the first line to be completely abandoned in the Kootenays, it was also the shortest lived, being in existence a period of only 13 years. It provides the best example of Kootenay rail abandonment as a result of overduplication.

The spatial pattern of abandoned railways in the Kootenays is particularly distinctive (See Map 9). All but three abandoned lines are located in close proximity to the international boundary, and on closer examination of these lines near the border, it should be noted that all but three were "foreign", constructed to tap resources across the border (seven American lines in Canada, one
Canadian line in the United States). With the general decline in traffic volume in the area, it became uneconomic to have two railways serving each centre. As the areas on each side of the boundary became more closely consolidated and the east-west rail lines close to and parallel with the border became more effective in integrating the border areas with their respective national economies, the "foreign" north-south feeder lines tapping resources in both countries were abandoned. The decline in traffic alone does not explain this pattern of abandonment since in most areas there was still enough traffic to support one railway. The lines to be abandoned in each case where overduplication existed were the foreign feeder lines and this occurred consistently and comprehensively, leaving very few foreign owned lines on either side of the border in the study area. This is another interesting consequence, with spatial expression, of the particular nature of overduplication resulting from cross-border railway rivalry during the period of evolution. In most cases, lines pushed across the boundary by foreign interests were simply regarded as short term feeders useful in tapping a lucrative traffic. Long term regional development and the consolidation of transportation interests by the railways was only carried out on their own respective sides of the border. Directly or indirectly, then, the boundary was gradually becoming more meaningful as a barrier in the period following the era of greatest railway construction.

Railway Rivalry in the Kootenays--An Overview

Such, then, is the detailed examination of the rationale for the evolution of railways in the Kootenays. A number of
interesting generalizations can be made about this rationale. First and most important, it appears that intercompany cross-border rivalry between American and Canadian interests in the area was indeed significant. In almost all of the various scenes of railway construction in the Kootenays, both American and Canadian transportation services were competing for traffic within a short period of time. The fact that this same development occurred repeatedly in different areas at different times serves to emphasize the importance of rivalry in bringing about the spatial pattern of the railnet. The same type of development occurred at Nelson, in the Slocan, at Rossland, on the lakes and rivers, in the Boundary, in the Crowsnest, and even at Spokane.

Another interesting general aspect of railway evolution in the Kootenays is the fact that almost all rail lines in the area were either constructed or taken over by one of two major railway companies, either the Canadian transcontinental (Canadian Pacific), or the American transcontinental (Great Northern). No railway of any significance in the Kootenays was to evolve that was not directly owned by or closely affiliated with either of these two operations. Each of the two railway systems was, in fact, an independent operation with a minimum of interchange traffic between them. Functionally, therefore, the railnet of the Kootenays should not be considered a single network, but rather two separate treelike networks each with its own system of flows. In other words, it can be extremely misleading to make inferences about a network from its appearance on a map. Although it may appear to be a single graph, functionally it may actually be two separate graphs, each with its own flows.
As Map 13 illustrates, there was a minimum of overlap in routes between the two Kootenay systems. Rather, the two subgraphs, both very treelike, interlaced each other usually meeting only at points of traffic generation.

A further generalization that can be made about the rationale for railway construction in the Kootenays is that the traffic generating centres which stimulated cross-border rivalry and attracted the development of transportation routes by interests from both sides of the border were mineral resource sites. Although figures on traffic flows are not available, there is little doubt that mining traffic outweighed all other traffic in the early period of the region's development. Most of the branch lines and feeders were built to facilitate mineral resource exploitation, to profit from the transportation of ore from mines and concentrators to smelters, and of supplies and passengers into the area from outside. In this context it is necessary to compare railways to other existing forms of transport.

Transportation posed a problem even in permitting access to the Kootenays by miners and prospectors in the early period. Riverboats and trails were built and complemented each other. Mining discoveries were made despite the difficulties of access even before the Northern Pacific and Canadian Pacific main lines were completed. Water transport developed to aid Canadian Pacific construction, and with the completion of both railroads mining camp settlement developed. Some form of transportation was essential for mining development and early mines depended on shipments by riverboat, pack horse, and wagon. The evidence
THE KOOTENAYS

RAILWAY AFFILIATIONS WITH THE GREAT NORTHERN AND CANADIAN PACIFIC

RAILWAYS:
- GREAT NORTHERN
- CANADIAN PACIFIC

WATERWAYS:
- GREAT NORTHERN
- CANADIAN PACIFIC

NOTE: Not all these lines existed simultaneously.
clearly indicates that railways were not prerequisites for development, but that their construction stimulated it in several ways. Although lower transport costs were the most apparent advantage, concentrators and smelters were also means by which transport costs could be lowered (by reducing the volume of shipments), and railways were usually the only practicable way by which the heavy machinery, limestone, and coal required by such plants could be transported. More important for numerous mine promoters, the arrival of railways meant that larger quantities and lower grades of ore could be shipped. In some cases water transport was unable to ship Kootenay ores as fast as they were mined (Fahey, 1965, p. 148). Railways also meant that those mines furthest from water routes and previously at the greatest disadvantage could be served equally well. In the Boundary area, for example, "until the advent of railroads, ... vast bodies of ore lay undeveloped, or at any rate, remained non shippers" (Howay, 1914, p. 479). Until the lower costs of railway transportation had been provided many areas were handicapped (Innis, 1937, p. 277f).

Although water transport accounted for most of the transportation in the Kootenays before the advent of railways and continued to be important afterwards, its greatest disadvantage was the number of transhipments required between water, rail, and trail. This problem continued to some extent even after the introduction of railways for some lines were "portages" between water bodies or depended on water transport for connections with other railways. As more and more railways were constructed, however, the number of intermodal transhipments required tended to decrease. Gradually
railways replaced water transport entirely along many routes in the area, as has already been noted, and the heavy volume of mine traffic was able to flow more smoothly and more cheaply as transhipments disappeared.

Additional evidence indicating that mining was the major motive behind cross-border railway rivalry and construction may be provided by the correlation of the sequences of dates in Table 1.

<table>
<thead>
<tr>
<th>MINING CENTRE</th>
<th>DATE OF ORE DISCOVERY</th>
<th>DATE OF INITIAL MINE PRODUCTION</th>
<th>DATE OF RAILWAY CHARTER CANADIAN</th>
<th>DATE OF RAILWAY COMPLETION CANADIAN</th>
</tr>
</thead>
<tbody>
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<td>1888</td>
<td>1889</td>
<td>1891</td>
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<tr>
<td>Slocan</td>
<td>1891</td>
<td>1892</td>
<td>1893</td>
<td>1892</td>
</tr>
<tr>
<td>Rossland</td>
<td>1890</td>
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<td>Crowsnest</td>
<td>1887</td>
<td>1898</td>
<td>1888</td>
<td>1901</td>
</tr>
<tr>
<td>Boundary</td>
<td>1891</td>
<td>1893</td>
<td>1896</td>
<td>1897</td>
</tr>
</tbody>
</table>

The sequence in which railways were chartered and completed to the various mining camps correlates quite closely with both the dates of ore discovery and the dates of initial production in the five major mining areas of the Kootenays. The greatest discrepancy in the pattern, the delay between mineral discovery and development in the Crowsnest, is probably best explained by the different nature of the mineral found there--coal. All the other mining camps produced lode metals and concentrates--lead, silver, zinc, copper, and gold--whose greater value per unit weight or volume than coal
would result in development relatively sooner after initial discovery. The Crowsnest coal fields were not exploited until demand increased, particularly from the Kootenays' smelters and the railways.

In total, there is little doubt that mineral resources stimulated most cross-border railway rivalry in the Kootenay region. Innis has examined this subject in detail. (For a more specific examination of the interrelationships between mining and railways in the study area than can be given here, together with a number of conclusions about such interrelationships in general, reference should be made to Innis, *Settlement and the Mining Frontier*, 1937, Chapters V and VI.) He notes that large scale mining development was dependent on railways (p. 316) which in turn deliberately encourage mining in order to increase traffic "in relatively non-remunerative, high cost of construction, operation, and maintenance territory" and to obtain "important long haul westbound transcontinental traffic in the form of machinery and passengers from the industrial east" (p. 313). As noted in Chapter 2, the transcontinental lines had been located with little regard for local resources and traffic. Hence it was necessary in the 1890-1920 period to encourage resource development in general and the mining industry, the major traffic generating activity, in particular in order to profit on otherwise expensive and non-remunerative sections of the main line. Both Canadian and American transcontinentals followed such a procedure and in so doing became rivals in providing competitive service and routes to the same mineral traffic generating centres. Also of significance is the fact that all four of the
major railway interests in the region, namely the Spokane Falls and Northern, the Columbia and Western, the Great Northern, and the Canadian Pacific, also became actively involved with investment in the mining industry.

Although most of the railway projects built in the study area were constructed to serve the mining industry, this is not true of all. Some lines, such as the Waldo branch of the Canadian Pacific, were built to exploit other resources; others, such as the Kootenay Central, were built to promote settlement and to consolidate the railway network in the area; while still others, such as the Spokane International, were retaliatory attempts to compete for general traffic.

In retrospect then, it appears that Kootenay railnet evolution can be explained with very little reference to the international boundary. Essentially it seems that railways evolved as a result of intercompany cross-border rivalry for mineral resources, almost as a network might have evolved if there had been rivalry between two railway interests in an area with no international border, as will be investigated below. Only with the abandonment of rail lines did the border's presence appear to be significant as a barrier. Although the border did not function as a barrier to railways, there did appear to have been nationalistic elements in the intercompany rivalry examined on the part of Canadian interests. For instance, competition with American interests seeking to tap the area was provided by the Canadian Pacific which was able in so doing to acquire special aid from both provincial and federal governments. This was particularly evident in the Crows
Nest Agreement. Such nationalistic elements would not have existed had there been no international boundary, had the area been one political entity. The border's presence seems to have been acknowledged in other ways as well. It would appear, for example, particularly to Canadian interests, that the boundary was important in defining the area which was being "invaded". With the passage of time this awareness of the border may have increased, although not to the point where American lines were greatly hindered from crossing it. In a number of ways, therefore, the boundary did appear to have had an indirect effect on railway evolution even if it did not function as a significant barrier to lines attempting to cross it.

An Analogy to Kootenay Railnet Evolution

In this section it is hoped to show the similarity of railnet evolution in a region not spanned by an international boundary to that of the Kootenays. In this way it should be possible to demonstrate further the lack of importance of the 49th parallel border as a barrier to Kootenay railnet evolution. For purposes of comparison the region selected should be as similar to the Kootenays as possible in terms of the elements influencing railway evolution, the major exception being of course the absence of an international boundary. Accordingly it was decided to select the Arizona-New Mexico region of the United States lying between the main lines of the Atchison, Topeka, and Santa Fe (henceforth to be referred to simply as the Santa Fe) and the Southern Pacific Railways (See Map 14). This region would appear to be like the Kootenays in terms of the two major elements hypothesized to have had an important influence on railway evolution in the Kootenays, namely (a) rich natural resources, and
(b) the presence of two highly competitive railway companies. The Arizona-New Mexico region will be considered in terms of both of these elements.

Rich Natural Resources

Like the Kootenays, the Arizona-New Mexico area is rich in natural resources. Not only are these mineral resources, they are virtually the same minerals that are of importance in the Kootenays—gold, copper, silver, lead, and zinc. While scattered throughout the area, these minerals tend to be concentrated in a belt across the southern half of both states. This zone generally coincides with the area between the Southern Pacific and Santa Fe Railways, just as the mineralized area of the Kootenays lay between the main lines of the Canadian Pacific and Great Northern Railways. Like the northern transcontinentals, the main lines of the southern transcontinentals were located before mineral discoveries and with little concern for local traffic potential; their main goal was the Pacific Coast.

Rival Railway Companies

As was the case in the Kootenays, railway evolution in the Arizona-New Mexico area was dominated by rivalry between two major transcontinental railway companies. Although a number of small independent lines existed they tended to be functionally related to either of the transcontinentals as branch line feeders, or else soon became subsidiaries of one or the other major company.

The Southern Pacific Railway (under the early name Central Pacific) joined with the Union Pacific to form the first American transcontinental railway, through California, Nevada, Utah, and
Wyoming in 1869. Holding a monopoly on California railway connections with the rest of the United States, the Southern Pacific built eastward through key passes in the continental divide in order to prevent other would-be transcontinental railways from using them to reach California and the Pacific Coast. One such Southern Pacific line was completed from California through Yuma and Tucson, Arizona to El Paso, Texas by 1881 (See Map 14).

During this same period the Santa Fe Railway, having constructed a network in Kansas and Colorado, began building a line to the southwest in an attempt to reach the Pacific Coast. It met the Southern Pacific at Deming, New Mexico in 1881. Through manipulation of rates and flows, however, the Southern Pacific was able to route almost all through traffic away from the Santa Fe, rendering the connection useless. Only with its own connections directly to the coast would the Santa Fe be able to obtain a share of the transcontinental traffic. In another attempt to reach the coast, then, the Santa Fe constructed a line from Albuquerque west across New Mexico and Arizona. The Southern Pacific again countered the move, constructing east across California to meet the Santa Fe at Needles, California in 1883 (See Map 14). "Once again linking lines with the Southern Pacific meant substantially nothing. The Southern Pacific consistently routed traffic over other lines" (Waters, 1950, p. 130). In desperation the Santa Fe began constructing a line parallel with the Southern Pacific's east through California. If completed to Needles this would render the Southern Pacific line valueless, so the two companies came to terms and the line west
from Needles was sold to the Santa Fe, finally permitting that company to become a transcontinental in 1885. As in the Kootenays two parallel transcontinental lines spanned the Arizona-New Mexico region, competing for through traffic between the Pacific Coast and eastern points.

Subsequent railway developments in the area between the two main lines was similar to railnet evolution in the Kootenays. The city of Phoenix, Arizona was the centre of an important copper mining region. The Southern Pacific had reached the town first through construction of a subsidiary, the Maricopa and Phoenix Railway, in 1887. The Santa Fe attempted to reach the same area from the north but was blocked by Southern Pacific interests at every turn (Waters, 1950, p. 349). From 1886 until 1895 the Santa Fe, Prescott, and Phoenix Railway, as the line south from the Santa Fe was called, was under construction facing many delays and setbacks. Although originally an independent company the project had Santa Fe backing and was purchased outright by that company in 1901.

Further intercompany rivalry in the region occurred to the east of Phoenix. In 1901 the Santa Fe organized the Phoenix and Eastern Railway to extend from Phoenix south and east into an important mining area. In order to block this project the Southern Pacific incorporated the Arizona Eastern Railway in 1904 to extend into the same area. Fierce physical and legal battles ensued as backers of each project tried to hinder the other. Finally the Santa Fe sold out to the Southern Pacific the portion of the line which had been completed.
As a glance at Map 14 will reveal, there was further construction by both railway companies in the region between their main lines. The Southern Pacific acquired more direct routes to the Phoenix and the Globe-Miami mining areas of Arizona. The Santa Fe built a line to the Silver City mining region of New Mexico in close proximity to the Southern Pacific main line. Other less important branch lines were added by both companies.

Although the frequency and duration of intercompany rivalry between the Santa Fe and the Southern Pacific railways in Arizona-New Mexico may not have been the same as that between the Canadian Pacific and Great Northern railways in the Kootenays, there were important basic similarities. The general structure of both railnets is similar; branch lines were sent out into the region between two parallel main lines. The scale of the networks is also similar; in both regions the parallel main lines were approximately 150-200 miles apart. The intensity of rivalry was also similar; legal battles and physical violence resulted from the competition of the rival companies over natural resources. From this analogy, then, appears further evidence that Kootenay railnet evolution might well have proceeded much as it did even if there had been no international boundary.
CHAPTER 4

THE DECISION MAKERS

In the previous chapter Kootenay railway evolution was examined in terms of resources and rival interests, the two major elements influencing that development. In this chapter it is intended to probe more deeply into the decision making which lay behind much of the railway rivalry. The remaining two elements noted in Chapter 1, the private and government decision makers, will thus be examined next. At the decision making level, it is also hoped to show that the border was not a significant barrier affecting railway evolution in the Kootenays.

The Identity of the Decision Makers

Although it may be true that a number of individuals not directly affiliated with either governments or railway companies had a slight influence in the making of decisions whether to construct or where to locate railways, this is rarely documented and they were hardly significant. All major decisions were taken by those in position in either governments or railway companies, and particularly the latter. It was the age when important economic decisions were usually made by individuals—the "copper kings", the "manufacturing giants", and others. It was no exception in the case of the "railroad barons", as they were called. Decisions which might have considerable impact on large numbers of people,
on whole regions of the country, for many years to come, could be and were made by a handful of influential individuals while governments often stood by. For this reason it is necessary to investigate the identity and relative significance of the various governments and railway promoters responsible for the nature of transport evolution in the Kootenay region.

Governments

Both the federal government in Ottawa and the provincial government in Victoria were interested in and became involved with railway developments in the Kootenays of British Columbia. American governments, on the other hand, were not in any way out of the ordinary concerned with railway projects in the particular area under study.

The Dominion Government

Volumes can be written about the railway policies and decision making of the federal government of Canada from the point of view of geographic significance. Volumes have already been written about federal railway policy by historians (e.g. Hedge, 1934). Little has been done with regard to the effect of federal railway policy on the Kootenays even though both general and specific elements of that policy were of direct relevance to the area. At the turn of the century, railways were considered desirable for their own sake alone almost everywhere. The general belief, as Glazebrook has pointed out (1964, II, p. 92) was that "Canada could progress only if an adequate transportation system was built up." And transportation "to most men of the day meant railways" (Glazebrook, 1964, II, p. 26). The result of this was a benevolent attitude and generous assistance
to any and all railways by government decision makers at all levels.

The federal government of Canada was particularly lavish with encouragement to railways for many years. Its aid to the "nation building" Intercolonial and Canadian Pacific Railways was only the beginning. In 1882, for example, it introduced a subsidy policy of granting $3200 a mile for which most railways were able to qualify (Skelton, 1916, p. 170). Apart from this, land grants, special subsidies, and other forms of aid were available to numerous railways in the Dominion. Such a policy could, and often did, lead "to the construction of lines for which there was no economic justification whatever" (Skelton, 1916, p. 170).

A number of railways in the Kootenays, both Canadian and American, were able to qualify for, and received the federal subsidy of $3200 for every mile constructed. It is apparent that the theoretical national objective of projecting and encouraging only Canadian lines to foster Canadian patterns of development in the nation, particularly in peripheral areas such as the Kootenays, was not consistently maintained. The working philosophy of most federal decision makers at the time was often that any railway is better than no railway, and that two railways are better than one, regardless of their nationality or spatial orientation. This occurred despite an early earnest dedication to an "all-Canadian" transcontinental from the east to the Pacific Coast which resulted in the construction of the Canadian Pacific main line. In 1884, before any railways had been constructed in the Kootenays, an American project with a British Columbia charter, the Columbia and Kootenay Railway and Transportation Company, had planned to link the Columbia and Kootenay Rivers
by rail and serve the rivers with steamboats from the United States. The "federal government disallowed the act of incorporation, the Minister of Railways stressing that the company consisted almost entirely of American capitalists, and that 'the road...would in all probability become a feeder to the Northern Pacific Railway'" (Roy, 1963, p. 68, quoting British Columbia, *Sessional Papers*, 1884, p. 175). As Roy adds (1963, p. 68-69), "if this line secured business during the Canadian Pacific's construction period, the federal government contended, American traders would establish themselves in the area and be difficult to dislodge."

By taking such action federal decision makers had demonstrated the ability to influence directly the nature and orientation of transportation routes. Theoretically this was straightforward and simple, for every railway that crossed the international boundary required a federal charter. Yet opposition to American lines appears to have occurred again on only one or two occasions and even at these times it only served to delay, rather than to prohibit, railway projects oriented towards the United States. In 1890, for example, the federal government disallowed the incorporation of the Spokane Falls and Northern from the border to Nelson and the British Columbia Southern which would connect with it, because they "would transfer the whole traffic from the rich Kootenay district to the United States" (Fahey, 1965, p. 104). Somewhat surprisingly, the former of these two projects was chartered by the same government, under the name Nelson and Fort Shepard, three years later. Federal decision makers, at first in opposition to American lines entering the area, soon seemed to
have altered their attitude. The situation became so detrimental that in 1898 the provincial government took steps to urge the federal government not to charter lines that would divert traffic to the United States (British Columbia, Legislature, Journals, Mar. 23, 1898, p. 76). As a result, the federal government disallowed the American backed proposed Kettle River Valley Railway in the same year, but a similar project was chartered three years later. The provincial action seems to have had no further effect upon the federal attitude towards American backed lines, for the Crows Nest Southern, the Bedlington and Nelson, and the Vancouver, Victoria, and Eastern, all subsidiaries of the Great Northern, were able to expand operations in the 1900-1915 period with almost no regard for the international boundary.

By allowing American lines to enter Canada, Dominion government decision makers permitted the development of a transportation network in the Kootenays which had a distinctive spatial arrangement and orientation. Social and economic ties in the Kootenays were to the south across the border and Canadian political control and ties were weak.

Apart from its general attitude of benevolence to almost all railway schemes, the federal government took a special interest in the construction of certain railway projects. This was evidenced earlier by the politically oriented Intercolonial and Canadian Pacific Railways, both important as "nation-builders" (Wolfe, 1962, p. 183). Federal decision makers took a direct interest in only one railway project in the Kootenay area, although this was probably the single most important line built into the region. This railway, the Crows-
nest branch of the Canadian Pacific, provided the first "direct access to the Kootenays" by rail from the rest of Canada (Howay, Sage, Angus, 1942, p. 256). An agreement was made with the Canadian Pacific Railway by which the company, for building the line, would receive a special subsidy of $11,000 a mile from the federal government "which was most anxious to preserve the Kootenay for Canada" (Roy, 1963, p. 42). In return for this aid, the railway company had also to lower freight rates. Among the most important reasons for federal government participation in the Crowsnest Agreement were the integration and development of the Kootenays with the rest of Canada (Macpherson, III, 1959, p. 373). By thus taking an active role in influencing selected railway development in the area, federal government decision makers were able to influence directly the orientation of the transportation network. It would appear that this was an attempt to compensate somewhat for the earlier decisions which had permitted American railway invasion in the first place.

Both directly and indirectly, then, federal government decision makers influenced and affected the nature of Kootenay rail-net evolution. In particular, it was they who were largely responsible for failing to enforce the border as a barrier in the first place.

The Provincial Government

Decision making by governments varies over time with changing administrations and the arrival of new policy makers. Despite numerous changes in federal administration, however, Dominion railway policy, insofar as it was relevant to the Kootenays, was in no way as prone to change as was British Columbia provincial railway
policy. In an unstable political situation, provincial policy as well as administrations changed frequently. Nonetheless, in the period 1883-1896 provincial railway policy, like that of the Dominion government, was generally benevolent towards all railway projects. In 1883 the provincial government began to encourage railway construction by granting large tracts of public land. (Land was far more plentiful than money at the time.) At first this policy was applied indiscriminately and land was potentially available to all those who asked for it (Cail, 1956, p. 261-262). An example of a railway which qualified and was promised such aid with construction was the American backed Columbia and Kootenay Railway and Transportation Company which was disallowed by the federal government.

With a change in government leadership in 1889 the generosity of provincial railway policy became more discriminating. A land subsidy bonus of up to 20,000 acres a mile for a number of Canadian oriented railway projects was made available "in an attempt to forestall American interests" (Cail, 1956, p. 263). As can be seen from Map 15, most of these projected lines were in the Kootenays, but none of them were constructed for a number of years, nor were any built as a result of provincial policy. Nevertheless, this does indicate the extent to which provincial decision makers attempted to influence the nature of Kootenay railnet evolution.

However opposed to American railways provincial decision makers would appear from this scheme, the same government showed a surprising reversal when it received "favourably" proposals by the Spokane Falls and Northern Railway to construct a line north to Nelson and an east-west line across southern British Columbia
between the Kettle River and Vancouver (British Columbia, Sessional Papers, 1890, p. 397). "The construction of these lines would form one continuous line of railway from the south end of Kootenay Lake to the Coast, with a short detour in American territory, rendered necessary by the difficulty of penetrating the chain of mountains on the west bank of the Columbia River" (British Columbia, Sessional Papers, 1890, p. 395). A later change resulted in an expansion of the proposed project to include a line from Crowsnest Pass to Kootenay Lake as well. Although such a line would provide a direct Coast-Kootenay connection, it would obviously be American oriented. Thus, as noted on page 86, it was opposed and rejected by the federal government of the time.

In the same year, 1890, the provincial government provided 200,000 acres as an incentive to the Canadian Pacific's Columbia and Kootenay project to link the Columbia and Kootenay river systems to each other and to the rest of Canada via the Canadian Pacific main line. According to McDougall (1968, p. 77), the transcontinental railway company was under pressure from both Dominion and provincial governments to build the line. "The British Columbia government had promised that if (it) did so, the charters asked for in the interest of American lines would not be granted. But before it was completed they went back on their word and chartered the Nelson and Fort Sheppard" (McDougall, 1968, p. 77).

In following years provincial government decision makers tended to be indiscriminately benevolent to any and all railway projects. American backed lines, such as the Nelson and Fort Sheppard, Kaslo and Slocan, Red Mountain, and the Columbia and Western,
all obtained provincial charters. Of all these, only the Red Mountain was exceptional in not receiving government aid of any kind (Fahey, 1965, p. 147). The other three railways received the then standard provincial land subsidy of 10,240 acres a mile, and when completed, added to the diversion of trade and resources south to the United States.

In an attempt to counteract this trend, which was largely assisted by the nature of its own policy, the provincial government actively promoted the Nakusp and Slocan Railway. In 1893 ores were "carried to Kaslo and shipped over the Nelson and Fort Sheppard" from the Slocan to the United States (Davie, 1894, p. 3). As a result, the provincial government made an agreement with the Canadian Pacific whereby the province would finance the construction of the line at $17,500 a mile if the Canadian railway would construct, lease, and operate the line on behalf of the province (Davie, 1894, p. 5). (Subsequently the line was considered as part of the Canadian Pacific system and was, in fact, acquired by the company at a later date.) In this case provincial government decision makers directly influenced the evolution of the rail network by sponsoring a line to promote a Canadian orientation of development and traffic patterns, in competition to the American orientation in this part of the province.

Although such measures were needed in order to counter the generous railway policy which permitted American lines to penetrate the region, they occurred infrequently. In fact, during the period after 1893, James J. Hill of the Great Northern Railway was able to obtain some influence with the provincial governments in order "to divert the wealth of the Kootenay and Boundary towards Tacoma"
(Ormsby, 1958, p. 314, 316). This, together with the federal willingness to give additional charters to the various Canadian subsidiaries of the Great Northern already noted, permitted other American railways to extend across the border into the Kootenays.

At times provincial government policy appeared to favour and discourage American backed lines almost simultaneously. For example, during the same period that the lines of the Great Northern were granted charters, the provincial charter of the Columbia and Western Railway forbade the railway to locate any line within 100 yards of the international boundary, to prevent the line from taking away Kootenay business by crossing the border (Roy, 1963, p. 45). Yet in the following year, the Great Northern's Bedlington and Nelson was freely able to obtain a provincial charter.

In 1898 the provincial legislature passed a resolution urging the federal government to deny any future charter "having for its object the diversion of traffic from the Province to the United States of America" (British Columbia, Legislature, Journals, Mar. 23, 1898, p. 76). This forestalled an American railway attempt, the Kettle River Valley Railway, backed by the Spokane Falls and Northern, to link the Boundary district with Spokane. As a result the federal charter was not granted and once again provincial decision makers had affected the sequence and pattern of railway evolution in the area. Nevertheless, in 1900, the Grand Forks and Kettle River Railway received a provincial charter even though it was "the Kettle River Valley Railway under another name" (Roy, 1963, p. 52). The provincial government, in granting a charter to a line which it had taken steps to prevent from receiving a charter two years earlier,
was "apparently forgetting its fear of American lines tapping the area" (Roy, 1963, p. 52). And in the following year, yet another Great Northern subsidiary, the Vancouver, Victoria, and Eastern, was able to obtain a provincial charter, although this time it was well camouflaged by a front of Canadian interests.

After the turn of the century provincial interest in and encouragement to railways in the Kootenays declined. Canadian railways competing with the American lines were given no special subsidies or encouragement by the provincial government. During the period in which provincial government decision makers had influenced the growth of railways in the Kootenays, however, they had both negative and positive effects. At times American lines were directly disallowed and Canadian lines were actively encouraged; and at other times, almost simultaneously in some cases, American lines were permitted entry and even subsidized as well. Throughout the period 1880-1900, provincial decision makers had a significant effect on the spatial orientation of the railnet. As a deterrent, they did little more than delay the entry of most of the American lines which attempted to tap the region's resources. Like the federal government, they failed to enforce the border as a barrier with any consistency.

Private Railway Interests

The individuals directly involved with the construction and expansion of railway systems were the decision makers who had the greatest influence on the development of the Kootenay network. While governments may have either permitted or prevented charters,
either provided aid or no aid to railways, theirs was essentially a passive role. It was those men who stood to lose or to gain most at the failure or success of their projects, who were most active in making location decisions which significantly influenced, if not determined, much of the nature of the sequence, the pattern, and the orientation of the railnet in the Kootenays. Typical of many areas in the period, the era of rapid railway expansion in numerous parts of the world, a small number of entrepreneurs could make decisions which affected large areas and populations. In the case of the Kootenays, the responsibility for entrepreneurial railway decision making can be clearly assigned to four major interests and a handful of individuals associated with them. For much of the period of greatest railway building activity, only two of these interests were involved and decision making was the responsibility of only two individuals. Those responsible for decision making and the four major railway interests with which they were associated are as follows:

1) Daniel C. Corbin of the Spokane Falls and Northern,
2) Frederick A. Heinze of the Columbia and Western,
3) James J. Hill of the Great Northern, and

The role of decision making of each of these must be considered in turn.

D.C. Corbin of the Spokane Falls and Northern

Daniel C. Corbin was responsible for the first successful
American railway invasion of the Kootenays, the Nelson and Fort Sheppard. A New York entrepreneur who moved to Spokane, Corbin was particularly significant as the decision maker first able to give the study area's transport network a distinctive north-south bias, an orientation that was to last until well after the peak of the railway building era. Almost from the outset of his career as a railway builder in the Pacific Northwest, he began constructing lines directed towards the resources of the Kootenays. His first project, the Spokane Falls and Idaho--Coeur d'Alene Railway and Navigation Company system, linked Spokane with the Coeur d'Alene mining area by 1887 (See Map 11). His next project, the Spokane Falls and Northern, had been proposed as early as 1884 but was unable to get underway until its Spokane promoters approached Corbin and he took it over. Corbin realized not only the potential value of its proposed connection with the Canadian Pacific, but also that such a railway could develop the north just as the earlier lines (including his) had developed the east, south, and west. To add an element of urgency to decision making, at least three other groups were also showing an interest in extending rail lines to the same area--the city of Goldendale, the Northern Pacific, and the Canadian Pacific (Fahey, 1965, p. 67-68).

Although the Spokane Falls and Northern was unable to enter Canada, Corbin made his first attempt to invade the Kootenays in 1889. Not until later, with Canadian backing, were his subsidiary companies, the Nelson and Fort Sheppard in 1893 and the Red Mountain in 1896, able to tap the Kootenays. A later project of Corbin's, the Kettle River Valley Railway, a proposed third Canadian feeder for
the Spokane Falls and Northern into the Boundary district, was de­layed and he lost interest.

Corbin's decision making in the projection of all his rail­ways which attempted to enter the Kootenays, whether successful or not, follows a similar pattern. Although the personal profit motive was uppermost, he was also regarded as an agent working on behalf of Spokane's economic growth since the effect of each of his railways was the increase of trade and prosperity of that city. In the words of its editor, the Spokane Spokesman-Review noted in September 1893, "I desire to say that Spokane owes to Mr. D.C. Cor­bin an enduring obligation...He is doing more today to develop the wilderness and strengthen Spokane than any other man..." In a similar vein, the Spokane Falls Board of Trade Annual Report for 1889 was able to state:

Next spring communication by steamboat will be opened between the S.F. & N. and the Canadian Pacific and Mr. Corbin has already taken steps to make an extension of his system which will ultimately end in giving to Spokane Falls direct railroad connection with the Canadian Pacific and in opening up the immense mining regions which lie to the east, north, and west of this important artery of our growth. This road has long been the hope and aspiration of our citizens.

Corbin himself made magnanimous statements to the effect that what he did was largely to benefit Spokane and may have actually considered this an important factor in his decision making. As early as 1893 he stated that he intended to extend his railways "into all the region north that should be tributary to Spokane" (Fahey, 1965, p. 131).

At a later date Corbin became interested in one final rail­way project between the Kootenays and Spokane, the Spokane Inter­national Railway. Although it was to become a Canadian Pacific
subsidiary, Corbin was partly responsible for successfully organizing the project and in attracting the interest of both Spokane and the Canadian Pacific. In respect to this project, Corbin again emphasized his interest in serving the city of Spokane: "I had no thought at that time of engaging in further railroad construction, but in 1904 I was strongly impressed with the belief that connection with the Canadian Pacific railroad system would be of very great benefit to Spokane, and proceeded with a few friends to finance the enterprise" (Corbin, 1907, p. 46).

As a decision maker, then, Corbin had goals which were essentially and consistently economic. Apart from his own motive of personal profit, his policy is of interest for his special desire to develop the hinterland of Spokane. His decisions to build to the Nelson, Rossland, and Boundary mining centres as each was developing indicate his goal of tapping Kootenay resources. To Corbin, the international boundary was hardly a real barrier; it only functioned as a source of delay, preventing him from reaching his planned destinations as rapidly as possible.

As a rival to the Columbia and Western and the Canadian Pacific in the Kootenays, Corbin was a significant figure. At almost every attempt to enter the region he was made well aware of Canadian opposition. From his first application for a charter to enter Canada in 1889 to his attempt to charter the Kettle River Valley Railway in 1898, the Canadian Pacific worked to prevent Corbin from invading the region (Fahey, 1965, p. 104f, 187f). This ranged from "running special trains to carry members (of Parliament) from their Easter vacations to the session if they
promised to vote against Corbin" (Fahey, 1965, p. 108), to legally preventing the Nelson and Fort Sheppard from entering the town of Nelson proper, forcing it to terminate at a point five miles from town. At one time Corbin reputedly stated that the Canadian Pacific "used all its resources to defeat me" (Spokane Spokesman-Review, April 21, 1898). Despite this opposition, however, Corbin was the decision maker who initiated the north-south spatial orientation by rail across the international boundary with the United States. Without his persistence and endurance in the face of setbacks, the development of transportation patterns in the area might have been quite different.

F.A. Heinze of the Columbia and Western

Although Frederick A. Heinze was responsible for only one railway project in the Kootenays, both its location and the time at which it was constructed had strategic importance in relation to the other three major railway interests in the area. Heinze's decision making was direct and straightforward; he was out for maximum profit from the mining industry. A successful mining entrepreneur from Montana, Heinze saw the potential gain to be had from railways and smelters in the Kootenay district of British Columbia.

By 1896 Heinze had built both a smelter at Trail and a narrow gauge railway, the Columbia and Western, from the mines at Rossland to his smelter at Trail. This line was built in direct competition and opposition to Corbin's Red Mountain Railway which had been built to transport Rossland ores to smelters in the United States. In fact, as Fahey states (1965, p. 148), from
1895 "Heinze was to compete with D.C. Corbin over command of the Kootenay for the next three years." Heinze not only sought to rival Corbin by deciding to attempt to monopolize the mining trade of Rossland, he openly challenged him. Corbin retaliated by legally barring Heinze's right of way, at least temporarily. Even so, Heinze's Canadian oriented, east-west railway reached Rossland six months before Corbin's American oriented, north-south line.

With the promising mining discoveries in the Boundary district beginning to attract attention, Heinze made the decision to extend his railway into that region. He had foreseen this area's potential from the start and had accordingly applied to construct the Columbia and Western as far west as Penticton in his original charter. Heinze himself stated, in fact, that the Columbia and Western project was based principally "upon the opening up of the natural resources of Boundary Creek" (Victoria Colonist, Mar. 14, 1896). As a result of Corbin's success in obtaining most of the Rossland ore traffic, Heinze decided the time had come to build west to the Boundary in search of other sources of mineral traffic (Fahey, 1965, p. 172f). Such a route, which could be extended to the coast as well, was also a rival to Corbin's proposed lines to the Boundary district and the coast. Besides this, the project was strategically located and the time coincided with plans of both the Canadian Pacific and the Great Northern to construct lines close to the border through to the Boundary and the coast. Heinze realized the strategic value of his chartered line in the plans of these, the two major railway rivals (Whittaker, 1949, p. 50-51; McDonald,
Rivalry between Heinze and Corbin over railways, resources, and mining traffic was evident in their decision making and in the results of those decisions, the railways which they constructed. Heinze took advantage of the competitive situation by posing as the champion of Canadian interests. He stated, for example, that British Columbia trade could virtually be independent "if transportation facilities equal to those from the United States are afforded" (Victoria Colonist, March 14, 1896). Heinze continued to take advantage of Canadian sentiment in getting support for his projects. As the Rossland Miner noted on Sept. 23, 1897, "During its short existence the Columbia and Western has manifested remarkable enterprise. Without it Rossland would have been at the complete mercy of...Mr. D.C. Corbin." At a later date Heinze stated "I have done more for this part of the country than all the others put together. I have never been sparing of money when development demanded" (Turnbull, 1964, p. 31). Corbin, with his regional interest lying in Spokane, could make no such statements.

As a decision maker Heinze was nevertheless motivated to making personal profit. Significantly, he provided an early railway project that was spatially oriented to preserving Canadian interest in areas threatened and tapped by American oriented lines. Aware of the situation in which he found himself, he took advantage of it by enlisting Canadian moral and financial support in his very real rivalry with Corbin and other American interests.
In any examination of Canadian railway development, particularly that along the international boundary, there must be some consideration of the decision making which resulted from the personal rivalry between James J. Hill, the Canadian in charge of the Great Northern Railway in the United States, and William Van Horne and Thomas G. Shaughnessy, the Americans in charge of the Canadian Pacific Railway in Canada. The rivalry which existed between these two large transcontinental railway companies during the period of their development was very closely related to the personal rivalry between their presidents. The resulting pattern of these two competitive railway systems was an overlapping of networks between the Pacific Coast and the Great Lakes, as Map 16 illustrates. Both companies operated subsidiaries in the other's country with little regard for the location of the international boundary. It was a "battle for the economic fealty of the border country" between the Canadian Pacific and the Great Northern (Wolfe, 1962, p. 183). It should be realized, therefore, that the Kootenays was only one of several regions on the continent which experienced their active competition.

The rivalry between Hill and Van Horne was made all the more intense since Hill had been one of the original partners of the Canadian Pacific in the period 1880-1883 and had actually recommended Van Horne as general manager for the Canadian syndicate in 1881. Upon leaving the Canadian Pacific, Hill began building up his own transcontinental line, the Great Northern, and from the 1890's to the First World War, there was an almost continuous and enduring rivalry, both personal and financial, between the two presidents.
OVERLAPPING NETWORKS
OF THE
CANADIAN PACIFIC AND GREAT NORTHERN RAILWAYS
BUILT BETWEEN 1880 - 1940

NOTE: Not all these lines existed simultaneously.
This rivalry influenced their decision making and thus the location and orientation of the rail lines for which they were responsible. When the Kootenay district became their "battleground" it is not surprising that all smaller railway interests in the area disappeared. Heinze was bought out by the Canadian Pacific and Corbin was bought out by the Great Northern, both in 1898. From then on, almost all railway construction in the Kootenays was undertaken or backed by one of these two systems, so that virtually every mile of track in the region was financially controlled by, as well as spatially oriented to, either the Canadian Pacific or the Great Northern.

As a railway decision maker with significant influence on the nature of railway evolution in the Kootenays (and elsewhere), Hill was primarily motivated by personal profit, the desire to build "his" transcontinental railway into a viable system, and his enduring rivalry with the Canadian Pacific and Van Horne. His major railway policy, once the transcontinental line had been completed, was to extend branch line feeders anywhere which would develop additional traffic and be profitable. His official biographer accords Hill with stating "I think our policy should be to build only such branches or new lines as we are sure will prove good" (Pyle, 1916, II, p. 390). Similarly, he openly declared that his main objective was to secure profitable feeders for his Great Northern main line and would continue to build such lines into British Columbia across the border (Vancouver Province, Jan. 8, 1903). Pyle has noted that his railway "built up the country as it grew, occupied strategically the whole region through which it passed and which it expected to serve, following its supreme purpose as a prime factor in the industrial

As a rival to the Canadian Pacific, Hill had been bitter ever since Van Horne had refused to incorporate Hill's line south of Lake Superior into the Canadian transcontinental, and instead had preferred to locate to the north in order to remain in Canada. "I'll get even with him even if I have to go to hell for it and shovel coal" Hill is quoted as saying of Van Horne, and as it turned out, he chose British Columbia and the Kootenays in particular as the arena for retaliation (Vaughan, 1920, p. 220f). He had already decided to locate his main line between the international boundary and the Northern Pacific, the hitherto northernmost American transcontinental, in order to cut that railway off from Canada (Graham, 1963, p. 165), and to result in shorter branch lines to the border for his own line's rivalry with the Canadian Pacific. Such lines had already been constructed in the prairies where Hill had tapped parts of Manitoba, and to the west where numerous branches ran north to terminate at the border (See Map 16). Other actions taken in rivalry with the Canadian Pacific in the prairies included policies regarding traffic arrangements and direct opposition to the Soo Line, an American subsidiary of the Canadian Pacific.

It was in the Kootenays, however, that Hill chose to concentrate his efforts against Van Horne and the Canadian Pacific. Large-ly because of the region's valuable mineral deposits, Hill decided to construct or purchase (as in the case of Corbin's railways) lines
into every mining camp as well as organizing his own steamboat service on Kootenay Lake and acquiring interest in Crowsnest Pass coal mines and Boundary copper smelters in order to ensure traffic routings over his lines (Howay, Sage, Angus, 1942, p. 257-258).

Subsidiary lines of the Great Northern ran to the Slocan, the Crowsnest, Nelson, Kuskonook, Rossland, and to the Boundary. One of these new lines, the Bedlington and Nelson to Kuskonook, largely duplicated the Nelson and Fort Sheppard acquired from Corbin. Hill considered this latter line to be "jerry-built" and his new line was intended to replace it (Affleck, 1958, p. 41), regardless of the interests of the town of Nelson which would then be by-passed by the Great Northern. Hill's decision making obviously ignored such considerations for the area he served. After several months of unrest, however, Hill was forced to return the service.

As a result of Hill's decision making, virtually every attempt by the Canadian Pacific and other Canadian interests, including governments, to preserve the Kootenay trade for Canada by providing routes spatially oriented to Canadian trading patterns was rendered of less value by Great Northern counterthrusts. Even the joint Dominion government-Canadian Pacific decision to build a "south line" across British Columbia from the Crowsnest Pass, through the southern Kootenays, the Boundary, and the south Okanagan to the coast, in order to counteract American railways oriented towards the south, was in turn countered by Hill. This began in 1905 when Hill decided to construct his "third main line" from Spokane west to the coast. This line, in combination with the other two "main lines" to the coast at Portland and Everett,
"would then enable the Great Northern to gather traffic from all parts of the Pacific Northwest" (Corley, 1967, p. 1). It would also counter future Canadian invasions of Great Northern territory.

Just as Hill had decided to invade the Kootenays in search of profit as a rival to the Canadian Pacific, he decided to abandon his lines there as soon as they became unprofitable. From 1910 onwards each Great Northern line was abandoned until in 1936 only two lines remained, both of which are still in existence. Interestingly enough, one of these is the old Corbin line, the Nelson and Fort Sheppard, which Hill had thought inadequate. The first American railway ever to tap the Kootenays is one of the last ones remaining.

Largely as a result of Hill's decision making, then, the Kootenays were tapped by American railway lines providing a comprehensive southwards spatial orientation for the whole region. Aware of the attractiveness of the area, Hill tapped it wherever profitable in the short run, in active competition with the Canadian Pacific. His enduring personal rivalry with Van Horne and Shaughnessy, together with his policy of developing only profitable branch lines led, as the Vancouver Province complained (Dec. 28, 1901), to his rendering "the Kootenay country, industrially and commercially, tributary to the cities and states immediately south of the boundary, in which his great interests are centred."

William Van Horne and Thomas Shaughnessy of the Canadian Pacific

As can be seen from Map 13, the Canadian Pacific was responsible for by far the greatest mileage of railways in the Kootenays. Of all the four railway interests with trackage in the area, it
operated on the largest scale and provided the most comprehensive network to serve the area, a network which for the most part remains to the present day. The point of view of Canadian Pacific decision makers was also different insofar as they tended to perceive the area as "theirs". Most of the area between the Canadian Pacific main line and the international boundary west of the Great Lakes had been reserved by federal agreement for the railway, but the Kootenays in particular it "considered its own domain" (Stephen Jones, 1937, p. 442; Vaughan, 1920, p. 221). It was also the area in which, as a result of the Great Northern's incursions, the Canadian Pacific "decided to challenge Hill" (Roy, 1963, p. 39).

As presidents of the Canadian Pacific Railway, Van Horne (in the period 1888-1899) and Shaughnessy (in the period 1899-1918) were each in turn almost completely responsible for the final decisions to construct new lines. Both became rivals of Hill and the Great Northern, and both were motivated by similar goals. Profitable expansion of the railway system came first, of course. This was combined with (and obviously related to) a goal of national and regional economic development which would result in increased traffic and income. (See Innis, 1923 and McDougall, 1968 for detailed discussions of this.) In attempting to carry out these goals, the Canadian Pacific tended to become somewhat monopolistic in its attitudes, and this was particularly so in the Kootenay region. As a result of Great Northern invasions of the area, Van Horne and Shaughnessy became bitter rivals of Hill. This rivalry affected and influenced the evolution of nearly all Canadian Pacific developments in the region.
At the same time, Canadian Pacific interests were also forced to compensate for the ineffectiveness of the international boundary as a barrier to American railways. In order to maintain Canadian interest and participation in the area in the face of federal and provincial willingness to charter American railways, Van Horne and Shaughnessy realized the need to construct lines into the region to counter and to forestall these United States interests, particularly the Great Northern. This was combined with a reluctance on the part of the Canadian Pacific to take action too soon or on too large a scale. This seems to be due, at least at first, to a general cautiousness and to a lack of financial resources (McDougall, 1968, p. 75-76). These generalizations are illustrated in the following examples of Van Horne's early policy in the Kootenays.

As a decision maker, Van Horne was determined to rival Hill and the Great Northern as vigorously as possible. Upon noting the series of Great Northern branches approaching Canada, he is quoted as exclaiming "Look at these...like hungry hounds ready to jump in!" (Gibbon, 1935, p. 339). Hearing that Hill actually intended to invade Canada, the "domain of the Canadian Pacific", he is also credited with vowing, "Well, if he does, I'll tear the guts out of his road" (Vaughan, 1920, p. 229).

Van Horne's railway policy was accordingly one of consistent attempts to maintain the trading patterns of the Kootenays along east-west lines within Canada. As early as 1889, when the Canadian Pacific backed the first railway project in the area, Van Horne stated that his policy was "to prevent the invasion
by foreign lines of the Kootenay District, in British Columbia—a district rich in precious metals and other natural resources" (Canadian Pacific Railway, Annual Report, 1889, p. 18). He also informed the Board of Directors that its "construction will doubtless result in great activity in the development of that part of the country, and in a large addition to the traffic of your railway" (Canadian Pacific Railway, Annual Report, 1889, p. 19).

Even so, Van Horne apparently had doubts about this first project of his in the Kootenays, for on visiting the area at the time he is reputed to have said something to the effect that "the Kootenays are the last place for profitable railway construction" (Smyth, 1942, p. 66-67). Another source states that he frankly regarded this first line as "a railroad from nowhere to nowhere" (Kamloops Inland Sentinel, April 5, 1890).

Despite this early uncertainty, Van Horne continued to build lines to improve Canadian Pacific access to the area, often managing to obtain both federal and provincial land and cash subsidies at the same time. Lines were built to bypass navigation hazards and the largest navigation company in the area was acquired. There followed a deliberate policy of refusing service to Corbin's and Hill's railways. The acquisition of Heinze's interests and the construction of other lines followed in further attempts to forestall the Great Northern. Regarding the Crowsnest branch, Shaughnessy, as vice-President, wrote to the federal government in 1896 that if it was intended "to preserve for Canada the business incident to the mining of the precious metals, copper and coal in that section of Canada by building up smelting enterprises and
smelting towns, it is essential that the railway be an integral part of the Canadian system without any interest South of the international Boundary" (Roy, 1963, p. 39, citing the Laurier and British Columbia Papers).

Decision making by both Van Horne and Shaughnessy was oriented to obtaining Canadian support by stressing the need for Canadian transportation spatially oriented to Canada. At the same time they wanted to reach the area, and its rich traffic potential, by the easiest route possible (Roy, 1963, p. 42), and be subsidized for doing it (Dafoe, 1931, p. 146). At a later date, in a similar vein, Van Horne wrote, "Some say that the question I have raised concerning Mr. Hill's plans is merely one between the railways...I say that it does matter very much to you whether your traffic is carried within or without your own country..." (Vaughan, 1920, p. 321). Accordingly Van Horne and Shaughnessy made decisions to construct routes to every mining area, big or small, in the Kootenays in order to preserve the area for Canada and the Canadian Pacific. As early as 1891 Van Horne foresaw the need for planning a through route, the "south line" from the Crowsnest to the coast (Roy, 1963, p. 39). By acquiring the British Columbia Southern and the Columbia and Western charters, Van Horne had pushed the line through from Macleod, Alberta, to Midway by 1899 with only one interruption, the water gap of Kootenay Lake. Following this lead when he became president, Shaughnessy decided to continue the "south line" through to the coast in order to forestall Hill in the south Okanagan and Similkameen regions, and thus acquired the Kettle Valley Railway (McCulloch, 1938, p. 4f). Cross-border rivalry between the Great
Northern and Canadian Pacific thus also influenced the evolution of railways to the west of the study area, although in a much less complex fashion.

Like Hill, Van Horne and Shaughnessy believed that the best form of defence was offence (Glazebrook, 1964, II, p. 117). Accordingly, upon hearing of further Great Northern plans for invasion of the Boundary district in 1902, Shaughnessy decided to invade the United States, first by helping to finance, and later by taking over complete operation of, the Spokane International. "Competition motivated the CPR... (for) the Canadian road could have entered Spokane anytime in the past ten years but stayed out of Hill's territory until he invaded theirs" (Fahey, 1965, p. 210). A similar, smaller scale invasion was that of the Kettle Valley-Spokane and British Columbia Railway (to become also backed by Canadian Pacific interests) running south into the mining area of Republic, Washington.

In general, then, Canadian Pacific decision makers were dedicated to promoting a Canadian orientation in transportation development, and extremely active in attempting to rival and oppose American advances into the area, apart from being concerned with the basic economic profit motive. The result of this was the development of a comprehensive network of routes serving the entire area with a characteristic east-west spatial orientation towards Canada, in contrast to the characteristic north-south spatial orientation of American lines extending across the border, with which they were in competition in a struggle for the trade and resources of the region.
Just as the situation of cross-border rivalry for resources influenced the evolution of the railnet, as examined in Chapter 3, so then did those making the decisions. Whereas the net effect of government decision makers was to ensure that the border remained a relatively insignificant barrier to railway evolution, private decision makers refused to consider the border a barrier and made decisions to cross it as if it did not exist even though, in some cases, they may have perceived such action as "invasion". Had the border been reinforced as a barrier, had personal rivalry between the decision making individuals not existed, cross-border railway rivalry and construction may never have occurred to the same extent, and Kootenay railnet evolution might have been quite different.
The Need for Integration: An Overview

Each chapter of this thesis has provided a different focus on the problem of "the border as barrier" to railway evolution in the Kootenays. Chapter 1 provided a brief introduction to the problem, setting it in the context of both the region and the literature of the discipline. In Chapter 2 the actual location and chronology of railway evolution was described, together with a schematic simplification (or "model") of that evolution. Chapter 3 comprised a discussion and explanation of the rationale for Kootenay railways, specifically in terms of intercompany rivalry over mineral resources. Here it was discovered that little reference to the border was required, and a comparison was made of the area with one lacking an international boundary, but which was similar in other respects. Finally, Chapter 4 investigated the role of decision makers as related to the border's lack of a barrier effect on railways. It becomes necessary, at this stage, to summarize and integrate the findings of the previous chapters in order to come to some general conclusions regarding the validity of the central hypothesis. Each of the major elements influencing railway development will be considered in turn.

The Presence of Resources--The Incentive

The stimulus to growth of any transportation network can be the presence of any traffic generating feature, either developed or
potential. It might take the form of an active industry or be simply the presence of rich natural resources. In this study, it has been demonstrated that the Kootenay region was particularly rich in a variety of mineral resources, resources which were essentially undeveloped before the arrival of railways. Mining was the obvious attraction for railway construction in the Kootenays, as has been discussed in detail. Without such a strong incentive to attract intercompany railway rivalry, it is unlikely that the same sort of railnet would have developed, or that the same number of border crossings would have occurred.

**Intercompany Rivalry**

Throughout Chapter 3 it was demonstrated that intercompany rivalry largely explained the distinctive areal pattern of railway development in the Kootenay region, and a comparison was made with the Arizona-New Mexico region where a similar situation of intercompany railway rivalry existed. If either of the two railway company rivals had been considerably handicapped or lagging behind the other, the development of such a network would most likely not have occurred. Instead, there would have been the development of a network by only one company's efforts.

In the Kootenay region, it would also appear that, as far as Canadian interests were concerned, a strong element in the rivalry was that transport routes (i.e. railways) were required to compensate for the ineffectiveness of the international boundary as a barrier to American railway invasion, by protecting a national interest in natural resources. Since by far the greatest concentration of rich mineral resources was located on the Canadian side of the
border, Canadian railway interests (particularly the Canadian Pacific Railway) were forced to take some action towards providing rail service in competition with American railways (particularly the Great Northern Railway), apart from the fact that they wanted a share of the profit to be realized from serving the mining industry. Due to the political nature of the situation, the Canadian Pacific in particular was frequently able to obtain additional government assistance for building lines in competition with American lines. 

Intercompany rivalry was significant on the local scale, in the development of individual projects to the various mining camps. It was also important on the regional scale through the study area, where there occurred a showdown of railway interests providing service to key points from both sides of the border. And it was equally important on the national scale, with the development of trans-continentals and the later provision by these systems of lines invading each other's national territory. The great majority of railway projects constructed and by far the greatest percentage of miles of track laid, were stimulated by intercompany rivalry over resources and traffic.

The Decision Makers

Throughout Chapter 4 it was noted that a handful of decision makers were directly responsible for policy which affected the nature of railnet evolution. Governments in Canada either wittingly or unwittingly continually made decisions which lessened the effectiveness of the international boundary as a barrier and permitted American railways to enter the Kootenays. This alone was very sig-
significant in fostering a situation favorable for the expression of rivalry between Canadian and American railway interests.

The nature of decision making by different railway entrepreneurs was also found to be significant. American railway interests were aggressive and motivated by the desire to tap the resources of southeastern British Columbia as part of the hinterland of the system of lines and centres of their railnets in the United States, persisted in making attempts to reduce the effectiveness of the border. Canadian railway decision makers, particularly those of the Canadian Pacific, tended to be more cautious and continually attempted to obtain government aid and widespread support for the cause of preserving Canadian resources for Canada before constructing lines to compete with American railways.

Another important aspect of decision making in the study area was the deep-seated personal and corporate rivalry between the presidents of the Canadian Pacific and Great Northern Railways during the period of most rail construction. The result of this was collective decision making which did not permit one of these to serve a centre or obtain traffic from any point in the region without the other offering opposition, competition, and duplicate service with a different spatial orientation.

The Role of the International Boundary

To repeat the central hypothesis of this study, it suggests that railways evolved in the Kootenays with little regard for the international boundary as a barrier. Throughout this thesis, evidence has been provided to indicate that in the study area this situation held true. If the border were an almost complete barrier,
or even provided a partial barrier effect, as in the case of the banking hinterland of El Paso across an international boundary (Losch, 1954, p. 448), the hypothesis would have to be rejected as it stands. In a number of ways, however, it has been shown that the border was not a significant barrier. It was noted in Chapter 3 that lines radiated as far from Spokane to the north, across the boundary, as they did to the west, south, and east. "Foreign" lines were able to proceed to all traffic generating centres which promised potential profit and were never more than temporarily delayed from reaching such points by the border. In fact, it was shown that railway evolution in the region could be explained with very little reference to the border. It was also demonstrated that Kootenay railnet evolution was very similar to the pattern which developed in an area where there was no international boundary.

In conclusion, then, it would appear that the central hypothesis can be accepted. The 49th parallel boundary did not function as a barrier to the development of railways. Nevertheless, the border did become increasingly important with the passage of time. This was reflected particularly by the nature of railway abandonments, in which cross-border lines were greatly reduced in number. In the present day it appears unlikely that the recently projected American line to the Crowsnest will be realized. There were also the nationalistic elements which were added to intercompany rivalry in Canada, elements which would not have existed had there been no boundary, particularly where expressed in the form of special government assistance to Canadian railway projects. The boundary also tended to become an increasingly perceptible feature of the area, for it was
quite apparent that decision makers whose policy it was to cross the boundary became more and more aware that they were "invading" another country, even though this did not appear to restrict their efforts.

It would also appear that the major elements which were hypothesized to be the major influences on railway evolution, namely the resource endowment, the rival railway companies, and the government and individual decision makers were, in fact, the essential elements which it is necessary to understand in order to explain Kootenay railnet evolution.

Had the international boundary been a significant barrier to railnet development, a pattern like that noted by Losch (1954, p. 447) and Wolfe (1962, p. 183-184), where the Canada-United States border in the prairies clearly disrupts the railway network, would probably have evolved. With this in mind, we can suggest that there are three situations possible where a railnet is evolving:

1) Where there is no international boundary, railways would evolve freely, according to the principles of economic demand, complementarity, intervening opportunity, and transferability (Ullman, 1956, p. 867-868).

2) Where there is an international boundary with a strong barrier effect on cross-border movement in either direction, national transportation systems would evolve independently, and with a restricted number of border crossings (Wolfe, 1962, p. 183-184).

3) Where there is an international boundary with a weak barrier effect, as in the case examined in this study, the result will be a combination of situations 1 and 2 above. There may be the evolution of national transportation systems, but this will not
occur completely independently; a situation of cross-border rivalry may develop in which each stimulates and competes with the other, as outlined in the model presented in Chapter 2. Again it should be noted that a considerable number of variables must be nearly equivalent on both sides of the boundary if a pattern like that of the Kootenays is to develop. This type of situation occurs infrequently; in most parts of the world, international boundaries have tended to be strong barriers to this kind of foreign invasion. The period of major railnet evolution has tended to be the period in which massive economic development occurs, when national governments are focussed inwards and are hostile to the idea of such obvious economic invasion of transport routes carrying away natural resources, trade, and commerce.
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