Connecting Canada:
a History of the Railway through Rogers Pass from 1865 to 1916

By: Jennifer Cleveland and Brittany Dewar

December 18, 2010

Instructor: Dan Smith
Department of Geography
University of Victoria, BC
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1.0 Introduction

The construction of a transcontinental railway became of crucial importance to the Government of Canada in the late nineteenth century (Anon. 1968). The area within the Selkirk Mountain Range was highlighted as the ideal location for Canadian Pacific Railway’s (CPR) rail route for reasons, including securing sovereignty within South-eastern British Columbia and profiting from the picturesque scenery as a draw for tourism (McDonald 1997). However, the Roger Pass region was the most formidable barrier the CPR would face. From early expeditions to locate a Pass, through the construction and operation phase ending in 1916, the CPR dealt with numerous challenges within the mountainous avalanche riddled area (Woods 1983).

This study focused on the time period between 1865, the year of the first expedition into the pass, and 1916, the year the Connaught Tunnel was completed and the above ground railway was abandoned (Woods 1983). Three important themes of this time period were discussed: expeditions into the region in search of a pass; the communities established during railway construction and operation; and the challenges the CPR faced while operating through Rogers Pass. These themes were further illustrated through the creation of three maps. The aim of this research and mapping exercise was to provide a greater understanding of the Rogers Pass area and its importance in Canadian history, and hopefully illuminate the reader as to the reasons and consequences of the decision to build the railroad through Rogers Pass.

2.0 Study Area and Data

This study focused on the area of the CPR rail line between the present-day town of Revelstoke in the west and the junction of the Beaver and the Columbia Rivers to the east, including Rogers Pass. Rogers Pass is a narrow valley, situated within the Selkirk Mountain Range, located within Glacier National Park. It is renowned for its steep mountain terrain, picturesque scenery and heavy snow fall (highest annual snowfall in Canada 12 metres (40 feet) (Parks Canada. 2009). Rogers Pass summit at 1,330 m in elevation is located between Revelstoke (480 m) and Golden (800m) in the south-eastern corner of British Columbia (Parks Canada. 2009).
The data used to complete this study and create maps was collected from a variety of different sources; electronic, web-based and print. Print sources include Parks Canada, Downs (1968), McDonald (1997), and Woods (1983). The web-based sources were gathered from GeoBase and GoogleEarth. The datasets from GeoBase were in vector format; projected in Lambert Conformal Conic, and GRS 1980 coordinate system. Datasets retrieved from GeoBase included; a hydrological network dataset, a geographic names dataset, and ortho-photos (GeoBase 2010). Spot satellite imagery and a railway layer were gathered from GoogleEarth. Snowshed coordinates were supplied by Parks Canada (Reisenleiter & Zielinski 1993). A historical CPR plan of Rogers Pass and an associated spatial referencing point were provided by Mount Revelstoke and Glacier National Parks.

![Map of Rogers Pass](image)

*Figure 1. Location of Rogers Pass is represented by the red star.*

3.0 Methods

Maps displaying the three important historical themes discussed in this study were created. The map themes were expeditions into the pass, the community life in the Pass and avalanche occurrences. The following maps illustrate and emphasize these themes:

1. *Finding the Pass: Exploration Routes from 1865-1882*
2. *Avalanche Occurrences in Rogers Pass 1885-1910*
3. *Rogers Pass Community 1909*
Data was gathered from multiple sources and in many forms as discussed in the Study Area and Data section. The sources primarily used to make the maps were written historical accounts and spatial data. Two software programs were used for map creation; ArcGIS and CorelDraw. ArcGIS was used to create, edit, spatially align and provide scale for the data and CorelDraw graphics software was used for cartographic purposes. All maps were made using a Lambert Conformal Conic projection and the GRS 1980 coordinate system. The methods used to create each individual map are discussed below.

Finding the Pass: Exploration Routes from 1865-1882

To display the approximate routes taken by the three men who had a hand in discovering Rogers pass, a location map was generated. Written accounts by Downs (1968) and Woods (1983) were the main sources used to map the expeditions. Ortho-photos, and a hydrology dataset from GeoBase were used as base layers and to trace the routes in ArcGIS. The expedition routes, and major rivers were then exported to CorelDraw with a set spatial reference and scale. In CorelDraw, the expedition lines were generalized because a highly detailed route would have misrepresented the level of accuracy of the data. Nominal symbology was created to help differentiate the routes temporally and by explorer. A mosaic of ortho-photos was used as the background to display the study area.

Rogers Pass Community 1909

A second location map was produced to show the community of Rogers Pass Station as it was in 1909. A weathered copy of an original Canadian Pacific Railway plan was spatially located in ArcGIS using a known benchmark location, and the railway and buildings in the plan were traced, although the buildings may not be properly scaled. The data was then exported to CorelDraw. The buildings were labelled using information provided on the CPR plan and from written accounts of the community at the time (Downs 1968; McDonald 1997; Mount Revelstoke and Glacier National Parks).
Avalanche Occurrences in Rogers Pass 1885-1910

A third thematic map was created to display avalanche locations and resulting fatalities between 1885 and 1910. The area of interest was the stretch of railroad between the junction of the Beaver and Columbia Rivers to the east, and the junction of the Illecillewaet and Columbia Rivers to the west. Once again, most of the data on avalanches was found in written accounts, and all occurrences with location and/or fatality information were compiled and mapped (Downs 1968; McDonald 1997; Woods 1983). The map does not give a complete account of the avalanches that likely occurred in the study area at this time, but rather shows only those that have been documented from the sources listed above.

For this map, two ancillary spatial components were created: a railroad layer, and a snowshed layer. The snowshed coordinates were entered into a spreadsheet and imported into ArcGIS as point data. The accuracy of these locations was +/- 100 meters. Four ortho-photos from GeoBase were used in conjunction with a GoogleEarth airphoto and a GoogleEarth railway layer to trace the route of the original railway through the Pass. Once the track was traced, the snowshed locations were spatially adjusted to line-up with the track; this was done manually and at the discretion of the map creator. At this point, the avalanche locations were manually placed on the map using the written descriptions, and references made to landmarks. Landmarks included snowsheds, settlements and surrounding mountains (for which the ortho-photo and a GeoBase Geographic Names point layer were used). This method does not lend a high degree of accuracy to the locations and, therefore they are only approximations of where the actual avalanches occurred.

The avalanche, snowshed and railway vector data were exported to CorelDraw to create symbology, and produce a final product. The snowshed symbology was created using the Canadian Pacific Railway before 1916 map found in Snow Wars as a general guide for snowshed size, however, the snowsheds were not made accurately to scale (Woods 1983). Proportional symbols were created for each of the documented avalanche occurrences. These symbols represent the number of fatalities associated with each occurrence, and were scaled using the formula shown in Appendix B. These final layers were overlaid on the ortho-photos.
All three maps were created for qualitative purposes and to visually augment the historical themes of this paper. They should not be used for any quantitative assessments.

4.0 Historical Themes and Map

4.1 Expeditions

The discovery of Rogers Pass was the collective effort of three men: Walter Moberly, Albert Perry and A.B. Rogers. All three men embarked on expeditions in the hope of finding a route through the Selkirks. Though A.B. Rogers is credited with finding the pass that was subsequently named after him, all three men contributed to the eventual discovery of Rogers Pass.

Walter Moberly, was first commissioned by the Government of British Columbia to find a railway pass through the Rocky Mountains in 1865. Moberly was continuing his rail mapping expedition from the Interior, where he had “located” Eagle Pass, through the Monashees (Downs 1968). In the fall he arrived at the junction of the Illecillewaet and Columbia Rivers. His next task lay before him to the east within the Selkirk Mountain range.

Moberly’s first expedition into the Selkirks set out on September 17, 1865 up the Illecillewaet River, from the junction at the Columbia River. Moberly’s crew followed the Illecillewaet River until they reached the junction. From there they took the northern fork up the Tangier River, and after some exploring, the Tangier was deemed unsuitable as a railway pass. The crew returned to the junction, with the intention of setting up the southern fork, however Moberly had been warned by his First Nation guide of “massive snows which leapt from the mountain sides upon the unwary traveler” (Downs 1968). Further ventures by Moberly into the Selkirks would be delayed until the following spring (Anon. 1968; Downs. 1968).

Together with Albert Perry in the spring of 1866, Moberly ventured once again up the Illecillewaet. Moberly again tried to make his way up the Tangier with the same end result. This route was unsuitable for a rail line. Perry, on the other hand, took the southern branch of the Illecillewaet. He ventured far enough to determine that a pass did exist, however it is unclear
whether he actually reached the pass and in what direction it lay in Moberly’s Report (Anon. 1968).

After Moberly’s two expeditions, interest in finding a pass through the Selkirks waned for several years. It was not until fifteen years later, when a private company “The Syndicate” took over railway construction, that another expedition was sent out in search of a pass (Anon. 1968).

A.B. Rogers, a railway engineer, was hired to once again seek out a possible rail route through the Selkirks. In May of 1881, Rogers, with guides from the Shuswap First Nation, set out on his first expedition (McDonald 1997), and followed Perry’s optimistic route up the southern branch of the Illecillewaet. Rogers and his crew reached a second fork where the river was now a small stream, possibly the meeting of the Asulkan and Illecillewaet, where they skirted around Mt. Sir Donald. At some point they reached a drainage divide with waters flowing in both directions. They climbed a nearby mountain to get a better view, and confirmed that this was in fact the summit of the pass through the Selkirks (Anon. 1968; Downs, 1968).

Conditions were difficult on these expeditions. As a result of their spring start, Rogers’ crew faced a massive snow pack from the previous winter. Rogers, aware of the dangers these massive snow packs presented, had his crew travelling early in the morning and in the late afternoons, avoiding the melting hours of the day (Downs. 1968). Rogers report to CPR manager James Ross emphasized that “work in the Selkirks will be very heavy and expensive”.

In 1882, Rogers again set out into the Selkirks, this time from the east, making his way up the Beaver River, eventually reaching the source of the Illecillewaet. At this point, Roger was able to confirm that a route would be viable through the Selkirks. Man would finally conquer the Selkirks (Anon. 1968; Downs 1968).

The map shown in Figure 3 provides visual insight into the approximate expedition routes of Moberly, Perry and Rogers, which lead to the locating of a route through the Selkirks at Rogers Pass.
Figure 2. The five expedition routes taken by Walter Moberly, Albert Perry and A.B. Rogers are shown in this map.
4.2 Community

Years of remoteness came to an end in Rogers Pass in the spring of 1884. Four-thousand men had been hired by the CPR to construct an essential section of the transcontinental railway through the Selkirk Mountains (Downs 1968). As the construction of the rail line progressed, numerous communities were established through Rogers Pass 1885-1916. However short term some of these communities were, places such as Donald, Beaver Creek and Summit City, gave an insight into surviving winters in the avalanche riddled Pass. Envisioned at one time by Van Horne as a prosperous tourism destination, this astonishing region through the Pass proved to be a barrier too great for the CPR to overcome (McDonald 1997). Today, these historic rail communities have long since been abandoned along with CPR operation through Rogers Pass.

At the time, the frontier communities in Rogers Pass were described as, “dirty noisy, profane, reckless western town(s)” by a passing reporter for the Calgary Herald (Anon. 1968). The rail communities had a ‘work hard’, ‘play hard’ mentality which supported the whiskey bootlegging industry. As a result, communities had many saloons and restaurants, while a sparse scattering of other businesses provided mainly the essentials (Anon. 1968). Beaver Creek, prominently made up of Swedes, had only four stores: a Barber Shop, a shoe maker and two general stores. All other businesses in Beaver Creek served up what its clients demanded (Anon 1968; Downs 1968).

Entertainment, which accompanied whisky drinking, included gambling games such as Seven-up and Stud poker. Dancing was also central to the lifestyle; popular live music at the time was composed with fiddle and accordion. And, no frontier town would be complete without local call girls: Nina Dow, Nellie and Ellen Swift, Emma Stewart, Maud Lewis, Agnes Morris and Nellie Goodrich were better known as the “Fallen Angels” amongst locals (Anon 1968; Downs 1968).

Although a CPR law made alcohol illegal within twenty miles of the line, this contradicted BC law which allowed for the sale of alcohol in licensed establishments (Downs 1968). Thus, the Pass was the scene of a constant battle of wits between those seeking to provide entertainment and the authorities (Anon 1968; Downs 1968).
Segregation by ethnicity was common in these communities; most settlements would have Swedish, French and Italian quarters. Work crews and saloons were also segregated by ethnicity. A popular Italian saloon was located in a 12 by 16 hut, and the barkeeper was a woman “but what a woman!” (Downs 1968).

Not only had the drawn out construction of the rail line taken its toll on employees of the CPR, but also the CPR itself, was in a debt-ridden situation (Anon 1968; Downs 1968). In April of 1885, after months of not receiving pay, roughly 1 200 construction workers went on strike, setting up camp in the rugged frontier town of Beaver Creek. With the addition of these irritated strikers, Beaver Creek was the scene of one of the few violent situations during the CPR’s occupancy of the Selkirks. Sam Steele, a commanding officer, described the group of strikers as “unsavoury” (Anon 1968). Trouble soon followed after the strikers congregated. The situation escalated and resulted in Sam Steele ordering his constable, Kerr, to arrest those responsible by any means necessary. “Take your revolvers and shoot anyone who tries to interfere with the arrest”, which Kerr did when he shot a construction worker, Behan, in the shoulder (Anon 1968; Downs 1968). The heated situation came to a close within a week when the strikers received their months of back pay and willingly returned to work. Construction of the rail line would continue without any other major labour disputes (Anon 1968; Downs 1968).

As construction of the rail line through Rogers Pass came to completion, new communities were established, while construction camps were abandoned. Established communities were primarily centered around stations, such as Rogers Pass Station and Glacier House Station. In addition, there were also a handful of other small settlements made up primarily of lookout points along bridges and other hazardous areas. The first Rogers Pass Station lay at the base of Mount MacDonald and Mount Tupper, three kilometres northeast of the summit. Avalanches hit this station on two separate occasions: the second one in 1899 led to the relocation of Rogers Station. It is unknown why the CPR chose this hazardous location for its operational headquarter (McDonald 1997).

The people of the community of Rogers Pass Station included the snow shovel gang, and community leaders such as CD Morris, owner of the General Store. Morris had come to the Pass in 1899 with his family (wife and two children) and set up his first store in a tent (Anon. 1968).
He followed Rogers Pass Station when it relocated 1.6 kilometres north of the Summit. Morris’ property at the new station contained several buildings, one of which served as the community hall (Anon 1968; Downs 1968). During the March 4, 1910 avalanche, Morris took it upon himself to aid the stranded CPR passengers, having forty of his pigs slaughtered to feed the passengers. His facilities were also used to hold victims of the 1910 slide in the time of distress (McDonald 1997).

The map created for this study of the 1909 Rogers Pass community displays an overview of the second Rogers Pass Station. This historic station community, located 1.6 kilometres north of the Summit, now serves as Parks Canada’s operations headquarters. The tracks shown at the station were located where the highway now lies.

The headquarters for the Canadian Alpine Club were stationed out of Glacier House as early as 1883 (Anon. 1968). The resort was also used as a dinning stop for passing trains because the rail line gradient through the pass was too steep to push the heavy dining cart. Thus, the resort community was made up of hospitality staff; including cooks, hotel staff and Swiss guides offering their services free of charge to guests seeking a mountain adventure. Glacier House Hotel was not able to sustain itself for long without the CPR customers, and it was forced to close in 1925; nine years after CPR operations had ceased (McDonald 1997).

The two station communities of Rogers Pass and Glacier House had very different make-ups and atmospheres. While Glacier station was focused on the hospitality and adventure tourism aspect of the CPR, Rogers Pass Station was accountable for the more daunting task of ensuring the wellbeing of CPR staff and its customers. Rogers Pass Station, the central operations headquarters, included a main dispatch office, repair facility (composed of a turntable and blacksmith facility), and the engines and coal shed (Mount Revelstoke and Glacier National Parks 1909). In contrast, Glacier House Station was the tourist destination Van Horne had envisioned in the Selkirks. These differing operation roles of the two stations, no doubt shaped the atmosphere and mentality of the people living in these communities.

Outsiders were sparse, other than a few miners, who set foot in these communities. Hence, it was the CPR employees who shaped the human landscape within the Selkirk Mountain from 1884-1916. Like many frontier towns in Western Canada in the late 1800’s,
communities were made up of people with diverse backgrounds. Although the time frame was short for Rogers Pass settlements, these communities are great examples of Canadian history and the characters that lived through that time.

Figure 3. The community of second Rogers Pass Station as it appeared in 1909, showing the location of the railway and buildings. This map was created from an original CPR Plan of the community.
4.3 Challenges to Operation of the Railway through Rogers Pass

In the spring of 1885, the TransCanada Railway began its ascent into Rogers Pass (Woods 1983). Railway construction was never easy work, but the stretch through the mountain ranges of Eastern British Columbia and Western Alberta were some of the most difficult faced by Canadian Pacific in their attempt to connect Canada from coast to coast (Lavallée 1974). In particular, Rogers Pass posed many difficulties to railway construction, both in terms of technical challenges and natural hazards. Construction crews had to deal with threats ranging from equipment malfunctions to forest fires, but the most significant threat to railway and life was the frequent avalanches that occurred in the pass.

Life was hard and accidents were frequent during the year of construction and the subsequent years of operation. The tenuous nature of the work did not go unnoticed by the construction crews as is evident by a letter sent from James Ross, the Construction Manager in the Pass, to William Van Horne. Ross tells Van Horne that they were facing conditions that they were not prepared for and the “the great trouble we are labouring under... is that the men are frightened” (Lavallée 1974). Deaths due to Mountain Fever, falling rocks, errant dynamite expositions and even murders were commonplace occurrences (Anon. 1968). In order to avoid scaring off new recruits, accidents were often concealed (Anon. 1968). However, the bigger threats to life and property came from natural forces.

During the summer months, forest fires were a significant threat. Forest fires may have started naturally, but the presences of the railway also offered many opportunities for fire ignition; sparks from the track or burnt out stack screens from the original wood burning locomotives posed severe fire hazards. The year after construction in the Pass, 1886, was a particularly dry year. On July 8th, the second Atlantic Express of the season caught fire east of Rogers Pass. Three cars were destroyed but no lives were lost. The fire continued to spread and threaten many of the trestle bridges and snowsheds, but thanks to the efforts of fire crews, none were lost (McDonald 1997). While fire was a main issue in the summer, the true terror of the Selkirks came with the cold and snows of winter.

The early months of 1885 were plagued by bad conditions. Despite the warnings by those such as Moberly’s First Nations guides, the CPR did not seem prepared for these
conditions (Downs 1968). The lack of preparation is made evident by the following quote taken from a letter written from James Ross to William Van Horne:

“I find that the snow-slides on the Selkirks are much more serious than I anticipated, and I think are quite beyond your ideas of their magnitude and of the danger to the line.” (Lavallée 1974)

The winter of 1885 started off with three huge slides on February 8th; they occurred at Mackenzie Camp, MacDermot Camp and the Summit. In total, four men were killed (Anon. 1968). However, this was just the beginning of the troubles in Rogers pass. Construction continued and the railway was complete in the summer of 1885. After the inaugural passage in November, the railway was closed for the winter (Woods 1983). This gave the railway crew an opportunity to study the avalanche patterns so that snowsheds could be positioned in the most appropriate spots (McDonald 1997). This study was the first avalanche survey conducted in North America (Woods 1983). The snowsheds, wooden structures built over the track, were positioned to afford passive protection to the track at the locations estimated to be most vulnerable to avalanches (Woods 1983). Construction of these structures began in 1886; at this time thirty-one sheds totalling 6.5 kilometres were built at a cost of over $1,000,000 (McDonald 1997, Woods 1983). By 1904, there were fifty-four sheds totalling a length of 9.4 kilometres (Woods 1983). Van Horne insured that an additional set of summer tracks were built alongside the snowshed track to allow tourists to see the Selkirk vistas (Anon. 1968; McDonald 1997).

Though snowshed construction offered some passive protection to the railway, avalanches continued to claim the lives of the hardworking men and women living in construction camps and settlements. A slide in February of 1886 buried and killed 16 men at Cascade Camp and closed the line for several weeks (McDonald 1997). This was the second highest fatalities due to a slide found by this research. Another fatal slide in 1899 took out the first Rogers Pass Station, located at the base of the Tuppers and killed seven people, among which was Albert Cator, the stationmaster, his family and three other railway employees (Downs 1968).

The most infamous Avalanche to occur in the pass happened on March 4, 1910. During this year, ideal avalanche conditions were created by huge snowfalls and then periods of frost and thaw (Downs 1968). On March 4th, the first slide came down off Cheops Mountain on to
Rogers Pass Summit, burying the previously abandoned Snowshed #17 and the exposed operational track in six metres of snow. No one was reported hurt, but plows and work crews were sent in to clear the track. That evening, at 11:30 pm, a second slide came off Avalanche Mountain, opposite Cheops Mountain, burying the work crew (Woods 1983). A rescue crew of 200 was dispatched from Revelstoke, and at one point, this grew to over 600 as nearby mining and logging crews were called in (Downs 1968). Despite the heroic efforts of the rescue crew, sixty-two men died and there was only one survivor (Downs 1968; Woods 1983). The majority of those killed from the slide were from a Japanese Work Gang (Woods 1983). Over the next two years, avalanches continued to plague the railway with over 100 counted in the Pass (Downs 1968).

The map in Figure 3, illustrates the dispersion, frequency and fatal impact of the slides that occurred in Rogers Pass between 1885 and 1910. From 1885 to 1911 over 200 deaths were attributed to avalanches. This map only accounts for ninety-six of these deaths, and there were likely many more avalanches and deaths that occurred in the pass in those years (Woods 1983). A listing of all the avalanches found by this research is included in Appendix A. This is not an complete account due to the fact that many incidents were likely concealed and a continuous avalanche account did not exist until 1909 (Anon.1968; Fitzharris 1972).

There were many challenges faced during the thirty years that the railway was operational in the Pass. Natural hazards and the tragedies that resulted went hand in hand with the rugged nature of this region. By 1913, the increasing cost of operation had taken its toll, and the CPR retreated from the Pass and started construction on an underground tunnel.
Figure 4. This map displays some of the avalanches that occurred along the railway through Rogers Pass from 1885-1910.
5.0 Discussion and Conclusion

The discussion of this historical research will focus on the purpose of and difficulties associated with making the historical maps; and historical insights about Rogers Pass and Canada in general, including community dynamics and the reasons and consequences for building the railway in this area.

5.1 Mapping: Purpose and Difficulties

Three historical maps were made for this study. The purpose of these maps was to aid in the understanding of the three research themes: expeditions, community and avalanche occurrences (as a subsection of ‘challenges’). Maps act as visual forms of communication, and can often shed light on new aspects of a theme that would go otherwise un-noted when viewing the same data in written or tabular forms (Crampton 2001). With a map, spatial relationships between two things that may have seemed previously unrelated are made apparent (Crampton 2001). Using GIS to map the data collected on Rogers Pass allowed for this aspect of Canadian history to be represented in a new way. The maps were not created for any qualitative analysis but simply to look at the data through a different perspective. However, converting the historical documentation into maps was not an easy task.

The making of the historical maps proved to be a difficult undertaking. One of the key issues was tracking down historical data that could be used to make the maps. The Canadian Pacific Archives were not available at the time this study was conducted. This would likely have been a useful source and may have filled in some of the gaps that remain in this study. The next issue was taking this primarily written data and converting it into a spatial representation.

The expedition map proved the easiest to find data for. Written accounts exist describing the routes taken by the explorers. However, these accounts do not give exact locations and some guesswork was involved in turning them into a map. In particular, the second exploration of Rogers was unclear as to how far he followed the Beaver River and if he, in fact, followed the route that the railway would eventually be built on.

When looking into the community side of things, a lot of information was missing. It was not possible to get railway employment records from this time period, and census data on the communities and their inhabitants was also scarce. This may be a result of the temporary
nature of the railway towns and camps that were dismantled as quickly as they were built during this time (Downs 1968). As a result, the community map could not be augmented with other, more meaningful data.

Finding avalanche accounts with enough detail to be able to produce a comprehensive map was also difficult. Rogers Pass has the longest continuous avalanche record in Western Canada but this record did not start until 1910. Only scattered written accounts were kept prior to 1910 (Fitzharris 1981). Also some discrepancies exist between sources. For instance, the number of fatalities due to the 1899 avalanche at the first Rogers Pass Station is listed as seven and eight in two different accounts and it is also listed as occurring on January 30 or 31 (Downs 1968; Woods 1983). The historical accounts are likely not complete because it was common practice to conceal accidents that occurred (Downs 1968).

5.2 Historical Insights: Community

The research conducted in this study gave insight into some aspects of Canadian history at this time. The structure and dynamics of the communities in and around Rogers Pass were typical of communities that popped up as the railway progressed across Canada. Community segregation by ethnic group exemplified the discriminatory policies and practices of the Canadian Pacific Railway and of the greater society at the time (Anon. 1968). Reasons given for this segregation were to reduce conflict amongst the groups (Polster 2010). The employment of primarily immigrant labour for the very dangerous jobs associated with railway construction was also common (Wu 2009). This was exemplified by the use of Japanese workers to clear the avalanche track on March 4th, 1910. These workers paid a high price; thirty-two of them were killed (Woods 1983). The construction of the Canadian Pacific Railway resulted in the loss of many lives, primarily immigrants, and Rogers Pass was no different.

5.3 Historical Insights: Reasons and Consequences of building the Railway through Rogers Pass

Another question answered by this research was why Rogers Pass was chosen for the railway and what the consequences of this choice were. The Pass was chosen for both political and economic reasons. The main political drivers were to secure sovereignty in Southern British Columbia and make good on the Confederation promise to British Columbia that they
would be connected to the rest of Canada via railway within ten years of joining confederation (1871) (Woods 1983). An economic driver was the tourism draw of the spectacular vistas of the Selkirks, which was seen as an excellent opportunity by Van Horne (McDonald 1997). So with time constraints to meet the railway deadline, the promise of protecting Canada’s southern border and possible economic benefits for the CPR, Rogers Pass was chosen as the route for the railway. However, in seems evident that the CPR was not prepared for all the difficulties that would come with this decision.

It is likely that the CPR may have been hasty in their decision to push the railway through because of time and cost constraints. They were already behind their completion deadline of 1881 (Woods 1983). Also, the CPR seemed to be experiencing financial difficulties and was behind on its payroll (Anon. 1968). These factors suggest that the decision to build through Rogers Pass was made in haste and that they were not prepared for the consequences of this decision.

This research did not find any evidence as to whether a tunnel was considered initially, but this is not likely since it would have taken considerably longer and would have robbed Van Horne of the tourist revenue from the Pass. However, as already outlined in the Challenges section and the Avalanche Occurrences in Rogers Pass 1885-1910 map (Figure 4), the conditions through Rogers Pass were worse than expected by the CPR. The loss of life and damage to the railway during construction and operation was great. The CPR had to deal with mounting costs from unforeseen expenses, such as the snowsheds (Anon 1968). In the end, it still took twenty-eight years and many lives for the CPR to backtrack and abandon their route through the pass and begin construction on a tunnel. The natural hazards of the Pass proved to be a force that could not be controlled or taken lightly. Construction of the Connaught Tunnel began in 1913 and it was completed in 1916 (McDonald 1997). This stretch of tunnel by-passed the most dangerous section of the Pass and lowered the gradient of the line. Once again, man had been turned back by the Pass and it would remain this way until the TransCanada highway was built in 1962 (Downs 1968). The incredible costs and lives lost should have provided insight to the TransCanada highway through this same Pass. The highway now faces many of the same issues, albeit with more active avalanche control measures. Today the highway is subject to
many closures due to accidents, debris flow and avalanches cutting off the major cross Canada route.

In conclusion, this study gave a historical look at the building of the railway through Rogers Pass by focusing on three main themes: expeditions, community and challenges to railway operation in the Pass. These themes were portrayed in three maps with the intent of shedding new light and understanding on these themes. Finally, historical insights, specifically railway community dynamics and the underlying reasons and consequences of choosing this route for the railway, were discussed. These insights are still relevant today especially with regard to the TransCanada highway, which follows the same route through Rogers Pass.

6.0 Acknowledgements

We would like to thank the following people for their help with this project:

- Dr. Dan Smith, Dr. James Gardner, and Kara Pitman
- Ken Josephson from the UVic community Mapping
- Ron Larsen and Alan Polster from Mount Revelstoke and Glacier National Park
7.0 References


Polster, Alan. *Personal Interview*. 15 September 2010


Appendix A: Timeline of Avalanches occurring in Rogers Pass from 1885 to 1912 as found by this research.

February 8 1885 McKenzie Camp
- Located 9.5 kilometres west of the Summit. Camp cook, Robert Miller, was killed. (Anon. 1968)

February 8 1885 McDermot Camp
- Located 13 kilometres west of the Summit. Three men were killed. (Anon. 1968)

February 8 1885 Summit
- Store owned by man named Hill is undamaged. No one else harmed or injured. (Downs 1968)

February 1885 (end of) Summit
- Hill’s store is wiped out. (Downs 1968)

February 1885 (end of) Short distance from Summit
- Six men were killed and over $65 000 of contract supplies were destroyed. (Downs 1968)

February 27 1886 Cascade Camp
- Sixteen men killed when avalanche buried the plow train. Line was closed until March 24th. (McDonald 1997)

May 6th 1886 Cascade Creek
- Two avalanches occur. (McDonald 1997)

January 30 1899 First Rogers Pass Station
- Seven people killed: Albert Cator (Station Master) and family, a telegraph operator, Ridley (Section Foreman), and two workers in the roundhouse. (Downs 1968)

January 20 1899 Snowshed near Summit
- One Italian worker was killed. (Downs 1968)

March 2 1910 Location not known
- Huge slide holds up passengers in Revelstoke and Calgary. (Downs 1968)

March 4 1910 Snowshed 17 at Summit
- Avalanche of Cheops Mountain followed by a second off Avalanche Mountain. Killed 62 members of the crew sent in to clear the first slide. (Downs 1968, Woods 1983)

March 5 1910 Snowshed 14
- Two kilometres of track buried east of station. No on hurt. (Woods 1983)

1911-1912
- Over 100 avalanches occur in the area mostly in the eight kilometer stretch of ‘Loops’.
Appendix B: Proportional Symbol Scale Formula

\[ r_i = (V_i / V_l)^{0.5} \times r_l \]

- \( r_i \): radius of symbol
- \( V_i \): value of observed occurrence
- \( V_l \): value of largest occurrence
- \( r_l \): radius of largest occurrence