

Connecting the Islands: Pool's Island Bailey Bridge

Samantha Batstone

Memorial University of Newfoundland
St. John's, NL, A1B 3X5, Canada
sbatstone@mun.ca

ABSTRACT

New-Wes-Valley is a small community on the northern end of Bonavista Bay. The municipality is composed of eight original villages, and spans a 15 kilometre stretch of the coast. The area's history dates back to the 18th century, with settlers living on many of the small islands in the area. Permanent settlements began in the early 19th century. In the 20th century, resettlement to the mainland began, with further island resettlement occurring as late as 1953.

Pool's Island was first settled as a village on the route to the Labrador seal fishery. Some say it was the settlement of Pool's Island, and its expanding population, that led to the development of the nearby communities of Badger's Quay and Valleyfield. It was not until 1953 however, that a single-lane Bailey bridge was constructed to connect Pool's Island and Badger's Quay.

Current day settlements in New-Wes-Valley are fully accessible by roads, but still span at least eleven islands, in addition to the mainland portion of the community. While each of these islands are now connected by bridge or by causeway, it was not until 1981 that the coastline was fully connected, and most roads were paved.

This case study will look at the social and economic impacts of connecting communities by roads. The bridge to Pool's Island will be studied specifically, and a discussion of connecting other inhabited islands around the province's coast will be presented.

1 INTRODUCTION

Historically, Pool's Island is noted as the starting point for settlement in the New-Wes-Valley area. The island was known as Fool's Island until the late 1850's, and was first visited in the 1700's, with settlement by land based seal fishermen and inshore cod fishermen occurring by about 1800. The first families of Pool's Island came via Bonavista, located directly across the bay [1]. The map below highlights these locations.



Figure 1: Location of Pool's Island (via Google Maps)

As the population continued to grow, Pool's Island could no longer accommodate its population, and this growth led to the settlement of the nearby communities Badger's Quay and Valleyfield. Census data indicates settlements in these communities as early as 1891, and in this Census, Valleyfield was recorded as Northwest Arm [1].

In the 1930's, Southwest Island and Tinker's Island (part of Badger's Quay) were connected to mainland Badger's Quay via bridges [1]. It was not until 1953 that a bridge was constructed to connect Pool's Island with Badger's Quay.

The information presented below is significantly based on an interview held with Pool's Island resident Mr. Gerald Starks, who was one of the workers on the Bailey bridge. Any other references will be cited as used. Additionally, it should be noted that while "Bailey" is the dictionary spelling associated with the Bailey bridge, and is the spelling used throughout this paper, almost all articles mentioning the Pool's Island bridge use the spelling "Baillie."

2 CONNECTING THE ISLAND

In 1953, a “double-single Bailey bridge” was built across the tickle between Pool’s Island and Badger’s Quay (double-single referring to the stacking of side panels in some section of the bridge) [2]. The bridge had a span of 282 feet, and was built by the residents of Pool’s Island, under the supervision of Mr. James Gail, veteran bridge builder [3]. The engineer responsible for the bridge was Sgt. T. Williams, and construction was funded by the federal government.

2.1 Actions to get the Bridge

While there were initial plans from government regarding construction of the bridge, it was likely the actions of island residents that made the bridge a reality. Two residents, Mr. Lewellen Starks and Mr. William Wicks, organized a petition to get the bridge, collecting signatures from residents of the island and nearby Northwest Arm. There was resounding support for the bridge, with only a single resident, Mr. Daniel Kean, signing against the bridge. Mr. Kean’s reasoning is unknown.

Mr. Spencer was the MHA during the time of the petition, and helped in making the bridge become a reality. When it did seem as though politics could potentially cause some delay, Mr. Harry Bourne, a very active and well spoken member of the community, became involved to ensure that the bridge came through in a timely manner. This was the only noted slow down in getting the bridge.

2.2 Getting the Materials

The bridge was shipped to Pool’s Island in pieces, where it would be assembled and launched. When the bridge arrived, residents recall that there were no spare pieces; they had only the exact number of each part. The parts of the bridge, as recalled and sketched by Mr. Starks, can be seen in Figure 2. The complete set of parts for a Bailey bridge can be seen in Figure 3, taken from [4].

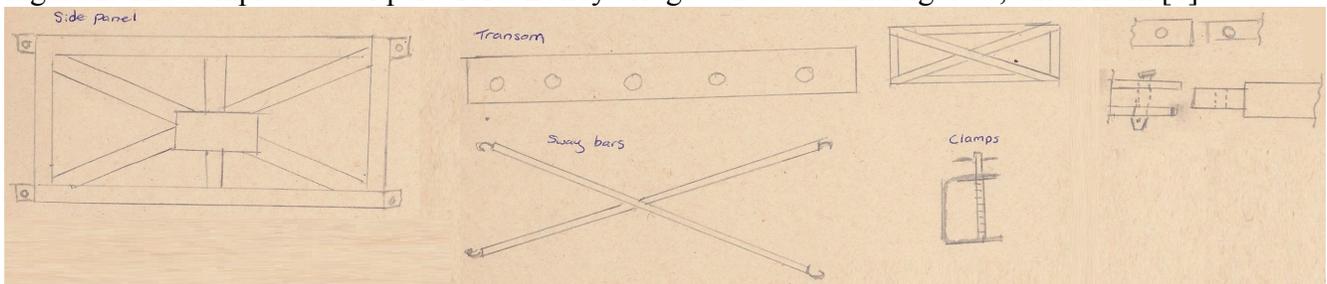


Figure 2: Mr. Starks' Sketch of the Parts of a Bailey bridge

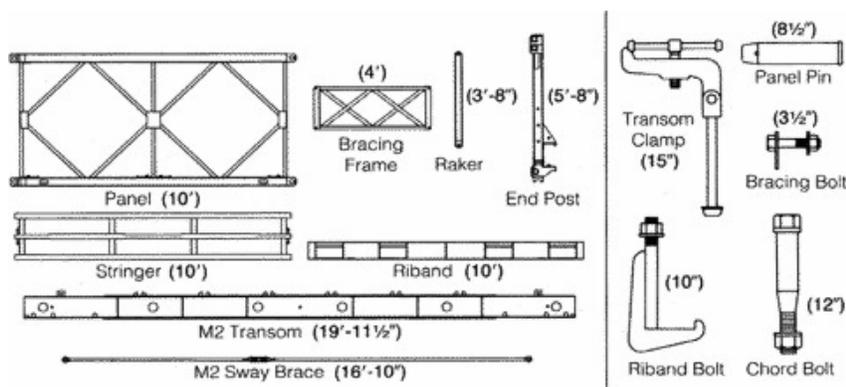


Figure 3: Parts of a Bailey Bridge

The parts of the bridge included transoms, which ran across the bridge; stringers, which ran between the transoms; side panels, which provided the bridges strength; and ribands, which supported the wooden plank decking [5]. Additionally, sway bars were used to help restrict movement of the bridge.

The other materials, such as stone and sand, to be used in the construction of the bridge came from communities in the surrounding area. The stone to be used in the concrete blocks came from Cape Freels, while the sand was taken from Alder Ridge (located inside Wesleyville).

2.3 Building the Bridge

Assembling the bridge and building the supports provided work for the residents of Pool's Island. It was the local residents, with the help of a few key individuals that completed the construction of the bridge. It was likely the unique design of the Bailey bridge that allowed for this, and made it the ideal solution at the time. Its key design features, as presented in [5], include its modular design, its interchangeable parts, the fact that no heavy equipment is required to assemble the bridge, and the fact that it is so lightweight each part can be carried by a small group of men.

Work relating to the bridge ran from approximately August to December 1953, and workers made about sixty cents an hour, which was considered good pay at the time. Before the bridge was assembled and launched, three concrete blocks were built to support the bridge, one on each side of the tickle, and one in the middle. The middle block had to be approximately 64 ft high, as there was about 30 ft of water in the middle of the tickle, 22 feet of mud to reach bedrock, and at 12 feet of clearance between the bridge and the water (to allow for the passage of small boats) [2].

Undoubtedly, wave loads and water pressures had to be understood to build any marine structure, however no records of any studies relating to this area have been located at the time of this paper. However, Mr. Starks recalls the significant water pressures that were dealt with in pouring the center block. The form was made of plank about 3 inches thick and 10 inches wide, and did not quite reach the bottom of the channel. Concrete flowed out beneath the form until a solid mass that pinched the form in place was created, and as the form was dewatered to allow the concrete in, it would bend inwards if too much water was removed before being replaced with concrete. Mr. Mike Duggan was the man responsible for the formwork, and lost a playful bet with a local resident that the middle block formwork could not be retrieved. The local, who thought this excellent board should not be left to waste, asked Mr. Duggan if he could remove the formwork. Mr. Duggan, seeing no way he was able to do this, told him if he could find a way to get those boards, he could have them. Indeed, the local came back with a saw, weighted down with rocks, lowered it into the water and sawed off the boards until they floated up. These boards were then used as part of one of the ramps associated with the bridge, and the resident was given a monetary gift for making use of these resources, thus leaving less for the government to buy.

“Another feature of the Bailey bridge was its ability to be ‘launched’ from one side of a gap” [5]. To assemble and launch the bridge, a flat firm was built on the Pool's Island side. The firm was about one half the length of the bridge, and the bridge was assembled here and pushed out as required. There was a truck and stationary engine on the Badger's Quay side of the channel that helped pull the bridge into place.

It was important during the push-out to keep more weight on the firm than what was cantilevered over the tickle, so that the bridge would not flip. Although the bridge was double railed in places, it was pushed out with just single rails, and the double rails were put on once the bridge was in place. This was done to reduce the weight of the bridge as much as possible during the launch. To further negate the affects of sag, a wedge with an approximate angle of 20 degrees, was placed on the flat firm, such that the launching end would be raised above the blocks. This method of launching is also

discussed in [5]. While this was successful in allowing the bridge to be landed on the center block, the bridge had sagged below the block height by the time it reached Badger's Quay. The men used sticks of wood to pry the end up and land it on the block.

Army Sgt. Ted Williams was the engineer responsible for the push-out, and Mr. Starks still recalls how the workers were sure he was going to have the bridge dropped in the tickle when he would tell them to "push 'er out another length or two." Telling the story now, Mr. Starks laughs at this, saying, "but he was trained on how to do this."

Once the bridge was landed, the second side panels (rails) were added. These were primarily for safety, as single panels would have provided enough strength for light traffic. The bridge was strengthened for heavier traffic at a later date.

Construction of the bridge wrapped up in December 1953, and an official opening ceremony was held in January, 1954. There is a discrepancy in the actual date of the opening, with residents of Pool's Island stating that the bridge was officially opened on January 1, while The Newfoundland Journal of Commerce indicates that the official opening was on January 4 [6]. The completed bridge can be seen in the following figure.



Figure 4: Photographs of the Bailey Bridge that Connected Pool's Island and Badger's Quay

3 HOW THE BRIDGE AFFECTED LIFE ON THE ISLAND

As is evident in the photographs shown in Figure 5, the official opening of the Pool's Island bridge was a very significant event for the community. Getting to and from the island prior to the opening of the bridge was a hassle, as individuals had to walk across the ice once it became safe, or cross by boat otherwise. Still, the installation of the bridge had both positive and negative effects on the community of Pool's Island.

As with many significant changes like this, some of the positives and negatives will change, or possibly even be presented under different categories, depending on who you ask. However, the views of the residents, as recalled by Mr. Starks, do shed light on some of the changes enabled by the bridge.

The most obvious change upon the opening of the bridge was the new presence of vehicles on the island. While there were roads on the island before the bridge, they were actually only small gravel paths, sometimes referred to as cow paths. To accommodate the new vehicular traffic, these paths would need significant upgrades. The majority of these upgrades were done around the same time that the bridge was built, and provided work for some island residents, as well as others in the surroundings communities. It was a resident of Badger's Quay that drove the first car across the bridge, and Mr. Gerald Starks' father was the first resident of the island to own a car.

While some residents did travel to the mainland for work, and sometimes shopping, before the bridge was built, the bridge made this much easier. According to The Daily News, “Residents of the island [made] many daily trips by small boat. During the winter months and in stormy weather many people were subject to considerable inconvenience and at times the journeys were not without hazard. [With the bridge], people there now enjoy free and easy movement between the communities” [2]. As stated in the Newfoundland Journal of Commerce, the bridge “is a very busy highway. Trucks and pick-ups are using it extensively to transport coal, lumber, provisions, groceries, etc. to the people of Pool’s Island. [Previously], transportation was done by water, but now it is much more convenient for goods to be delivered by motor vehicles” [7]. However, all stores on the island eventually closed, which undoubtedly was a loss to the community. In addition, there are no longer any public buildings left on the island. While this change took much longer to have its full effect (the last public building to close was the Ernie Loyal Orange Lodge 101, and it closed in 2009), it was still viewed negatively, especially in the eyes of more senior residents. As part of the loss of public buildings, the schools on Pool’s Island also closed by 1972, and students were bussed to neighbouring communities, with the first bus crossing occurring on Oct. 15, 1962.



Figure 5: Opening Ceremony Photographs

Before the completion of the bridge, most of the communities essentially operated as single entities. However with the bridge in place, and travel between communities made significantly easier, the communities became more interdependent.

Another impact of the bridge was a change in classification under the marine authority. Before the bridge, the channel between Pool’s Island and Badger’s Quay was classified as an open channel. Schooners and large boats could pass through this channel quite easily, especially if they stayed near the middle, or on the Badger’s Quay side, as this was the deepest area and there were few rocks or obstacles. While small boats could still pass beneath the bridge, larger vessels now had to travel around the island, and thus the channel lost its open classification. This did not have a large impact however, as the detour was fairly short.

Presently, you will no longer find this single-lane Bailey bridge, as it has since been replaced with a two lane causeway. However, the construction and opening of the causeway was not nearly as significant an event for residents. The causeway was viewed as a natural progression over time. There

is no recollection of major actions taken to get the causeway, or of a grand opening ceremony, as was held in 1954 to celebrate the opening of the Bailey bridge.

4 CONNECTING OTHER COMMUNITIES

While walking across ice, or rowing flat bottom boats, have since been replaced with larger ferry services, there are still a number of issues surrounding transportation to the smaller communities and islands around Newfoundland's coast that rely on ferry services.

As this paper is being written (March 2013), the province's ferries are on a refit rotation, and communities are experiencing the effects of not having the proper ferry for their area (the island's ferries have different abilities for navigating ice), or no ferry at all. A man in St. Brendan's had to wait two days for medical attention after falling off a roof, as the temporary replacement ferry given to the island could not navigate the ice in the area, and fog had halted air traffic. Residents of Fogo needing medical attention had to be transported via icebreaker, as the ferry and air ambulance could not operate, and the school has been closed for about a week, as repairs could not be completed until parts can be brought to the island [9]. These are just some of the ferry related problems that can occur at any given time. Noting this, each ferry is affected differently, and every solution will also have its own drawbacks and shortcomings. However, these recent events illustrate potential benefits of connecting other communities around the island that depend on ferry services.

While some ferry routes are undoubtedly too long to be connected by bridge or causeway, some travel very close to shore, along the southern coast of the island, and could possibly be replaced by highways. The purpose of this paper is not to look at the economic feasibility of doing this, but rather to present ideas for alternatives to the current ferry system. Additionally, one may think of a bridge, especially the Bailey bridge presented earlier, as a short span structure, and assume that the spans of water that would have to be crossed are way too long. However, "Using supports ... or pontoons, the [Bailey] bridge can cover almost any distance" [8].

A more controversial view on the many ferry services dotting the province's coast is that it is time for these communities to be resettled to areas where road transportation infrastructure already exists. Resettlement was a large part of the mid-twentieth century, when many small communities were moved to larger centers, and perhaps it is time to pick up the few communities that were left behind in this movement, or whose situation has become similar to those that were moved in earlier times.

One should not conclude from this case study that the correct answer is to eliminate the ferry services. There are multiple alternative solutions, such as roads and resettlement, each with its own set of pros and cons. A careful study should be conducted to determine the best solution, and the ferry service would likely remain a part of this. This paper is not intended to indicate otherwise. However, based on the study of Pool's Island, there are a number of social and economic consequences associated with providing a roadway link.

Many ferry routes along the southern coast of Newfoundland do not accommodate the transport of automobiles, and unlike in the past when most people traveled on foot, automobiles are a part of every day life. Changing the current transportation methods may finally allow people to take their vehicles to and from these small communities, which in turn could open up many new opportunities, such as expanded tourism, in the area. Additionally, though not permanent, residents could be provided with job opportunities during the construction of the new infrastructure that would replace the ferry services.

5 CONCLUSION

It can be seen from this paper that there are many considerations, be they technical, social, or economic, involved in deciding whether or not to allow a community to remain dependant on water

based transportation. In the past, flat bottom or personal boats, small ferries, and walking on ice flows were the common solutions to crossing a water body; today however, larger ferries are in place, and people expect to travel with their vehicles.

Connecting a community provides many new opportunities for the residents, and would likely open up an expanded tourism program for the community and visitors, along with many other benefits. Newfoundland is big on promoting tourism within the province, and making these small communities that are so reminiscent of the early settlements easier to reach could undoubtedly add to this program. However, there will always be some who feel that a more permanent connection would have a negative impact, as some of the island, or small community, heritage may be lost.

Before any decision can be made about whether or not to connect these small communities, there should be an in-depth study of feasibility, both technical and economic, social acceptance, and long-term need. As someone who does not live in a community fully dependant on water crossings to reach many every day services, it is hard to imagine why people choose to stay in these small areas. However, for the residents these communities are home, thus there are many viewpoints to consider when evaluating ferry services, providing full road access, or proposing resettlement.

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