E. Trees to Ties to Track

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Montana Memory Project Photo umt010970
Initial Metadata Title: Polleys Lumber Company, Unloader and Railroad Ties
Initial Metadata Date: 1930

Trees to Ties to Track

If you have read the Introduction to this collection, you have already been introduced to my wife, Marian, you already know how I got involved in this photo analysis/research work as a volunteer for the University of Montana (UM) Maureen and Mike Mansfield Library, and you know how my research on most of the photos is triggered. In early 2018, Marian sent me a list of seven Montana Memory Project (MMP) photo numbers with the suggestion that the metadata for this set could stand some double-checking or completion. All of the photos in the list, including the lead photo, MMP number umt010970, related to the Polleys Lumber Company in some way.

Archives West (2018) indicates that Edgar Hovey Polleys started his lumber company in Missoula in 1910 with the construction of a mill on the south side of the Clark Fork River. Based on Sanborn Fire Maps of Missoula from the early 20\textsuperscript{th} century, the Polleys property extended from the west side of the Northern Pacific Bitterroot Branch Line westward to California Street. The north-south extent was from the river to the right of way of the Chicago, Milwaukee, St. Paul, and Pacific Railroad, i.e., the Milwaukee Road, essentially, Dakota Street. Logs were delivered to the mill from both railways.

When I receive a request to study a particular image, I always look at images with umt numbers adjacent to the case-in-point image. Often, I discover that the case-in-point image is related to some other photographs taken by the same photographer and scanned at one time by the library technician. The metadata for the other images may
be helpful, or the view in the other images may add depth to the research on the photo in question. That was certainly the case here.

I came across two other photos, umt010971 and ...72 in the MMP collection. The lead photo and these two all relate to the Polleys Lumber Company locomotive #4.

I did some internet research in an attempt to identify the type of locomotive in the lead photo and in umt010971, and as often happens, I came across a picture of a logging locomotive similar to the ones under study. In this case, the internet image was of a locomotive in British Columbia that looked like the one in the MMP series showing locomotive #4, i.e., umt010971. The caption for that online photo indicated that the locomotive was a Heisler brand, a gear driven steam locomotive similar in concept to the Shay and Climax gear driven locomotives that, also, were popular in the logging business in the early 20th century.

After determining the type of the locomotive in the photo under study, I knew to research Heisler locomotives specifically. The Geared Steam Locomotive Works site (Thomas, 2018) lists many of the Heisler locomotives. I searched the site for “Polleys”, and the search returned links for Polleys locomotives #2 and #4. The photo of the Polleys #2 locomotive is the MMP photo umt010969, which I had viewed in studying the lead photo because its MMP number is adjacent to the one under study. I will come back to locomotive #2 later.

In the Geared Steam Locomotive Works photo of #4, the numeral 4 is clearly visible on the side of the cab, and the words “Polleys Lumber Co” are on the side of the tender. This company name lettering is not visible in the MMP photo, but the numeral 4 is visible. The Geared Steam Locomotive Works photo caption indicates that the photo of locomotive #4 was taken near Ronan, MT.

The Description fields in the four MMP photos (umt010969, …70, …71, and …72) originally indicated the location as “probably in Montana”. In the subject photo and in umt010972, a mountain range rising up from a relatively flat valley can be seen in the background. Based on the hint on the Geared Steam Locomotive Works site, I wondered whether the location of the lead photo could be near Ronan. I drove my Virtual Car to the area northeast of Ronan, and I captured the view in Figure 1. I suggest that the scenes in umt010970, …71, and …72 were taken near this location. Aerial views east of this area suggest that parcels of land have been logged.

Two differences exist between the photo of locomotive #4 on the Geared Steam Locomotive Works site and the images of the locomotive in umt010970, …71, and …72. I mentioned the labeling differences above. In the MMP photos, the smoke stack is the funnel-shaped style, also called bonnet style or diamond style, while the smoke stack in the Geared Steam Locomotive Works photo is a simple tube. These differences can probably be accounted for with the timing of the respective photos. The smoke stack shape may indicate a change from the original use of wood or coal fuel, as suggested by the smoke stack shape in the MMP photos, to oil for fuel, i.e., when the need for the spark suppression of the diamond style smoke stack was not needed.
The photos referenced in this article, i.e., umt010969, ...70, ...71, ...72 are from the Rollin H. McKay collection in the UM Archives. My interpretation of this set of photos is that McKay spent some time in the field with the Polleys Lumber Company people and captured a series of photos that can suggest two phases in the development of a new segment of a logging railway.

Figure 2 shows locomotive #2 pulling flatcar on which is mounted a steam powered simple derrick. The derrick is lifting ties from beside the railroad tracks onto another flatcar. I have not found information on how the ties for the Polleys Company railroad were prepared or delivered from where the trees were felled to the loading point beside the railway. However, the workers who prepared the ties were probably called tie hacks and worked with hand tools. The internet has information on tie hacks in the Wind River country of Wyoming. The sites that discuss tie hacks indicate that tie preparation was done manually well into the 1930’s.
Ties, such as those being loaded in Figure 2, made their way to the site where a new segment of the lumber company’s railway was being built, i.e., the lead photo. The lumber company railroads were often laid fast with no significant road bed preparation. The railway needed to last just long enough to remove the merchantable timber from an area. Then, the tracks were ripped out and moved to a new location. The roadbed did not need to be smooth as with a line that carried passengers. The logs did not complain about a rough ride as human passengers might have done.

In the lead photo, we see locomotive #4, a flatbed car with railroad ties such as was being loaded in umt010969 (Figure 2), and a steel framework on a second flatbed car. That steel framework is on what is called the pioneer car, i.e., the first car to travel on newly laid track, and the mechanism on the pioneer car is called a track laying machine. It is actually a machine with two purposes, not just unloading ties as initially suggested in the MMP Description fields for umt010970 and umt010972. The machine also unloads and positions the steel rails.

Track laying machines are discussed on the oil-electric.com site. Various designs are illustrated, e.g., the Roberts (oil-electric.com, 2011a), Holman, and numerous other styles (oil-electric.com, 2011b). Essentially, all of the track laying machines, including the one in the lead photo, perform the same functions, i.e., they move ties and track from source flatcars and position them ahead of the machine. The differences in the
various styles related largely to the relative amounts of mechanization versus manual labor involved in handling the ties and rails. The Hurley self-propelled system probably employed the most amount of mechanization (oil-electric.com, 2011b) of the track laying machines of the early 20th century.

I could find no photos on the internet that show a track laying machine similar to the one in the lead photo. The lead photo is not well imaged. Therefore, I made the sketch in Figure 3 in an attempt to illustrate the gross features of the Polleys Lumber Company track layer. The gantry boom seems to me to be a feature that distinguishes the Polleys machine from those described on the oil-electric.com (2011a, 2011b) sites. Images on the internet show drawings of container cranes with the drawing at https://inchbyinch.de/pictorial/container-crane/ having many similarities to my sketch in Figure 3. The function of a container crane is to move shipping containers laterally from the dock to a ship, or vice versa, totally analogous to the process of the track laying machine.

My interpretation is that the track layer had two basic controls for handling materials. One control raised and lowered the choker hitch that carried the ties or the rails. The other control moved the choker hitch assembly back and forth along the gantry boom. Not seeing a steam engine on the track laying pioneer car, I interpret that the draw works was powered by live steam from the locomotive. The steam was piped from the locomotive and powered a small engine, perhaps only 20 horsepower, as mentioned in the oil-electric.com (2011a) discussion of the Roberts track layer.
Some track laying machines had their own on-board steam engine, e.g., the Hurley machine (oil-electric.com, 2011b), for both material handling and locomotion. A photo on the slatonharveyhouse.com site shows a standalone steam engine and the draw works for what may have been a track laying machine. Figure 4 is just a part of the slatonharvelhouse.com photo that shows cathead winches that might be similar to what was in the operator’s “cage” sketched in Figure 3.

The process for laying track with a machine such as in the lead photo was straightforward. The track laying machine would run the choker hitch assembly to a position over the supply of ties, and a worker would set the choker hitch around a group of ties. That bundle of ties would be moved along the gantry boom to the back of the train and past the end of the track. One can see the worker and a bundle of ties in the lead photo. The workers on the ground in the photo, then, laid the ties in place. More bundles of ties were delivered past the end of the track until enough ties were laid to accommodate the next pair of rails.

After laying about twenty ties, the choker hitch assembly would be drawn back into the heart of the pioneer car, which carried the rails. A worker would set the choker hitch around a rail, and the draw works would move it over the newly laid ties. The rails were about 30 feet long, which suggests that the gantry boom extended at least 15 feet past the end of the pioneer car. Of course, this operation was repeated in order to lay the two parallel rails.

Once the rails were spiked, the pioneer car and the track laying machine moved forward to repeat the process for the next 30 feet or so of track. With the help of the machine, one to two miles of track could be laid per day.

Figure 4. Steam Powered Cathead Winches for a Railroad Derick or Track Laying machine. slatonharveyhouse.com (2017)
Epilogue

As I suggested above, McKay photographed various stages of the building of a new lumber company railroad. In umt010969, we see the ties being loaded onto a flatcar for delivery to the end of track of the new railroad. In the lead photo, we see the track laying machine moving a bundle of ties from the tie flatcar to the ground where they will be positioned for the next segment of the track. I went to the UM Archives and viewed the McKay photographs hoping to find one that focused on the preparation of ties, but I did not find one.

One might wonder whether McKay captured a rail being moved through the track laying machine. Indeed, he did. While viewing the McKay photographs at the UM Archives, I found a photo that I believe shows a rail being moved. It was not scanned with the others. I have asked the library technician to scan that photo and to add it to the MMP collection. When that happens, I will edit this story to include that image.

References

Archives West, 2018, Polleys Lumber Company Ledgers, 1922-1936, URL http://archiveswest.orbiscascade.org/ark:/80444/xv72994


