Few who know their Colorado Midland railroad history can deny that the Midland’s crossing of the Continental Divide via Hagerman Pass, just west of Leadville, was a spectacular achievement. In fact, it was probably one of the most outstanding feats of railroad engineering in the 19th Century.  

The first standard gauge railroad to extend from the Front Range across the Rockies all the way to Grand Junction, some 256 miles, was planned to be two construction projects – an eastern division building from Colorado Springs to Leadville, and a western division building from Leadville to just southwest of Glenwood Springs. The western route was supposed to have been built first, and it was started first during the summer of 1886. The silver mines in Leadville and Aspen, the mills in Leadville and the coal reserves in Jerome Park and around New Castle made construction of the western route a logical choice, where lucrative revenues already existed, i.e., coal and ore transport.  

But politics and the competition, namely the Denver & Rio Grande railroad, delayed the arrival of needed materials to the western division, so the eastern route from Colorado Springs to Leadville – up through Ute Pass, out across South Park to Buena Vista and up the Arkansas River valley – had to be constructed first.  

But once the Colorado Midland reached Leadville on August 31, 1887, and the line began passenger and freight service shortly afterward (in fact, the very next day), rails were pushed further west almost immediately into the Sawatch Range and the Continental Divide.  

The two highest mountains in Colorado lay just 12 miles west of Leadville – Mt. Elbert and Mount Massive. Through the canyons to the north runs a pass reaching an elevation of 11,939 feet. Starting from around Turquoise Lake and moving up through those canyons, the Midland built a roadbed and a tunnel that consisted of approximately 10 miles of track laid in four serpentine loops, including a huge curved wooden trestle 1,084 feet long just at the beginning of the third loop, and a smaller trestle 420 feet long, as well as eight snow sheds. The pass was called Hagerman Pass after James J. Hagerman, the president of the Colorado Midland Railway, and the tunnel was named Hagerman Tunnel.  

Both the roadbed and the tunnel had been started in the summer of 1886, before work was halted for lack of materials. With the Midland tracks nearing Leadville, it was completed in June 1887. At 2,060 feet long and 11,528 feet in elevation, Hagerman Tunnel was the first to pierce the central Rockies - most likely the highest bore in western railroad history at that time. It was certainly acclaimed to be the “gateway through the great Divide.”  

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As W. A. Douglas wrote at the opening of the Hagerman Tunnel, “Let us pause at the portal through which we have been admitted to this sublimest of sublunary scenery, and take note of the great industrial enterprise that enables us to peep into this hitherto double-locked thesaurus of nature. This is the great bore through the backbone of the continent, the gateway through the great Divide.” (Tuesday, June 14, 1887 – Leadville Herald-Democrat)

Once through Hagerman Tunnel, the Midland tracks wound down the western slope from Hagerman Station (at the western portal) to Loch Ivanhoe at the source of the Frying Pan River, and then on down the Frying Pan and Roaring Fork river valleys to Basalt, Carbondale, Cardiff, Glenwood Springs and New Castle, eventually reaching the banks of the Colorado River (then called the Grand River). In a joint venture with the Rio Grande Western, the Midland shared track from New Castle to Grand Junction.

Construction of a standard gauge railroad up mountainous Hagerman Pass and through Hagerman Tunnel may have been an outstanding engineering feat, but it did not take the Midland management long to realize that the route up the pass, called the “high line,” was a severe financial drain. “The impracticality of the Hagerman route was demonstrated to the Midland Company early in its existence, but it was not in a financial condition to better it” wrote the New York Times in November 1897.

In addition to the expense of running trains up and down 3% grades and around 16 degree curves, the clearing of the right-of-way during wild Hagerman Pass winters was an exhausting effort which kept rotary snow plow outfits on the move from November to March. During any of those months, the pass was liable to be buried under hundreds of feet of snow or the debris of destructive snow slides. It took six hard-working locomotives to shove the Leslie rotary plow through the snow, and the moisture and debris caused the maintenance of the snow sheds to be a constant chore. So after only a year or more of operation, as early as 1888, the Colorado Midland began surveys to locate another tunnel site at a lower elevation.

By November 1889 they had mapped out plans for a major line relocation running from the Busk Station near Busk Creek at 10,953 feet (see Page 1 map and map below) to the northern shore of Lock Ivanhoe, a straight-line distance beneath the Continental Divide of 2.9 miles. The tunnel itself would be 9,394.7 feet long and would eliminate the wooden trestles, seven miles of lariat loop track rising up to the Hagerman Tunnel, the steep 3% grades, as well as save 572 feet in elevation.

Not wanting to take on more debt, the Midland chose to contract with an independent company to build and operate the tunnel. The Busk Tunnel Railway Company was incorporated on June 16, 1890 with a secured 999-year contract from the Colorado Midland promising revenues of 25 cents per ton of freight and 25 cents per passenger that was carried through the tunnel. The Midland also agreed to keep the tunnel and its approaches in repair. The long-term contract was necessary to raise capital for the construction, estimated to cost $782,000.

The boring contract was awarded to Keefe & Company of Butte Montana in July 1890, and the tunnel was completed, with some difficulty, on October 18, 1893. It was designed for a single track with a shaft that was 15 feet wide and 21 feet high, reinforced with timbers. The western portal at Lock Ivanhoe was 133 feet higher than the eastern portal at Busk, which provided good drainage and, the designers hoped, a natural chimney for escaping smoke and gas. Trains began running through the bore by December 17, 1893. The actual cost of construction was $1,260,000 for which bonds were sold.

While the accumulation of smoke and gas from trains going through the tunnel turned out to be a constant problem, train collisions were not. Midland operating rules stated that only one train could occupy the tunnel at a time. The engineer of any train would obtain a staff signal instrument at the entering station which was electrically interlocked with identical instruments at the other portal. Trains were not allowed in the tunnel without the staff instrument. Withdrawal of an instrument at one end automatically locked both instruments so that withdrawal by another train was impossible. Once a train

The tents of Douglas City, a temporary base camp for construction workers, are dwarfed by the size of the great trestle. Trains ran very slowly over both trestles. Denver Public Library
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arrived at the distant portal and the staff instrument was reinserted at that station, the instruments would be unlocked and ready for the next train.

The Busk-Ivanhoe Tunnel saved the Colorado Midland $70,000 annually in maintenance for the old “high line” in addition to large savings in the general cost of running trains across the Divide. The maximum grade to the Busk-Ivanhoe Tunnel from Leadville was only 1.41%, compared to the 3% grades up Hagerman Pass, and the approaches were located in such a way as to be practically free from snow drifts or avalanches. Although operations over the “high line” were suspended by January 1894, all trackage and facilities were left intact as insurance against rock falls and other mishaps which might occur within the new tunnel.

For the next four years, Midland trains operated through the new tunnel regularly. But in 1897 the Colorado Midland Railway went into bankruptcy and was being reorganized. The reorganization committee, led by a receiver named George Ristine, felt that the rental for use of the Busk-Ivanhoe was too high. The committee wanted to retire the bonds securing the tunnel construction (worth $1,260,000) and consolidate the tunnel with the railroad by issuing new bonds. The Busk Tunnel Railroad Company (and their bondholders) objected, protesting that the value of the Midland bonds were in question, and soon both parties began issuing ultimatums to one another.

Fed up with the argument, in September 1897 the Midland people put crews to work to rehabilitate the Hagerman Pass “high line” and the Hagerman Tunnel, and by October had surrendered possession of the Busk-Ivanhoe Tunnel to its owners. As the Busk-Ivanhoe bore could not be reached by any other railroad, its desertion by the Colorado Midland rendered it absolutely worthless. Litigation was certain to follow.

All through the winters of 1897 – 1898 and the following summers, the Midland kept pushing its trains over the old “high line” and through Hagerman Tunnel much to the surprise of the Busk Tunnel Railroad Company. But the onset of the winter of 1899 changed everything.

It started snowing in January 1899 and didn’t stop until April. Blizzard after blizzard closed the “high line” for 78 days straight, stranding trains, passengers and crews, collapsing snow sheds and bringing commerce along the Midland line in that region to a screeching halt. The Midland had to borrow rotary plows from other railroads and divert traffic on those lines in order to respond to the crisis. CREws out of Leadville were even hired to hand-dig the snow off the tracks.

Once relief was accomplished, the Colorado Midland and the Busk Tunnel Railroad Company began earnest talks to consider reconciliation. Very quickly, within weeks, the Midland approached the tunnel company about an outright purchase of the tunnel and operation. On May 12, 1899 the deal was struck and within 14 days trains were again running though the Busk-Ivanhoe Tunnel.

In the autumn of 1899, the Hagerman Pass “high line” was officially closed for good after salvaging ten miles of 60-pound rails and usable lumber and timbers from the snow sheds and trestles. Hagerman Tunnel, the first “gateway through the Divide,” was abandoned.

For the next two decades, the Midland’s use of the Busk-Ivanhoe Tunnel was uninterrupted. After the Midland ceased operations in 1918, the tunnel (called the Carlton Tunnel at that time) was converted to automobile traffic. From 1922 to 1943 (when the tunnel collapsed) it was a one-lane toll road, State Highway 104. Since 1962, the tunnel has been part of the Frying Pan – Arkansas Project, moving water across the Divide between Lock Ivanhoe and Busk Creek.

Hagerman Pass is still accessible by unimproved road using four-wheel drive vehicles or by hiking. The large trestles in the loops have been filled in with rock. Stream crossings and rocky sections, as well as occasional fallen trees, make the pass difficult to traverse. But it is generally open from late May though the first heavy snowfalls in autumn.

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Sources: Denver Public Library; Wikipedia; The Colorado Midland - A Short History by R. Phillips; The Midland Route by Mel McFarland; the New York Times; the Leadville Herald-Democrat; and The Railroad Gazette.

A rotary plow like this one near Lock Ivanhoe Station, and others borrowed from the D&RG, helped clear the snow from the tracks along Hagerman Pass and relieve stranded passengers and crew during the January to April blizzards of 1899. Denver Public Library

The east portal of the Busk-Ivanhoe (Carlton) Tunnel today. Once a one-lane toll road from 1922 - 1943, since 1962 the tunnel has been used to divert water from the western slope to the Arkansas River valley via the Frying Pan - Arkansas Project (note the pipe).
Obscure Real Estate Laws

Unusual laws affecting real estate occur with some regularity, but here are 5 during the last year that deserve highlighting:

1. To stem the potential problem of manure left in from of properties, Watertown, NY is considering a law to require horses to wear diapers.
2. Hedges encroaching on sidewalks must be trimmed in Plattsburgh, NY. The city can trim overgrown hedges and bill the owners. A similar law in Harlingen, TX allows the city to mow residents’ lawns whenever their grass grows over a foot.
3. “Toy ranches” in Pitkin County, CO are no longer considered agricultural property. A property is considered a toy ranch if the land around the house is used for grazing but the house itself isn’t part of the ranching operation.
4. Homeowners in South Carolina who want to recyle copper pipes must obtain a permit from the sheriff – to curb illegal copper stripping.
5. And, residents in Illinois (except in Chicago) are now permitted to paint their trees purple to keep trespassers off their property.

To inquire, email or call 719.687.1516

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