



Pikes Peak Cog Railway REVIVAL

RALPH SPIELMAN/PHOTOS AS NOTED

IN MARCH 2018, THE FUTURE of Colorado's Broadmoor, Manitou & Pikes Peak Cog Railway was in doubt. The Broadmoor Hotel, which owns the railway operation, issued a terse press release stating that after 126 years in business, there would be no spring 2018 reopening, after an almost-six-month shutdown. The release went on to point out that operations were doubtful for the railway's foreseeable future, given the lack of maintenance on the equipment and right-of-way for the previous decade.

Six months before that press release was issued, the railroad had been shut down in late 2017 for maintenance. But that pause in service revealed that a lot of money would be needed to upgrade the century-old cog railway to 21st century

standards. Many thought the railroad was doomed. Was this to be the end of more than a century of operation, pushing the iconic cog railway to the pages of history like other local railroads, such as Colorado Midland, Midland Terminal, and Mount Manitou Incline Railways?

Fortunately, that didn't happen. After a hiatus of almost four years, Broadmoor, Manitou & Pikes Peak Cog Railway resumed running in May 2021 and, following a \$100 million rebuild, the future of the world's highest cog railway appears secure. The nine-mile railroad is one of only two cog railways in the United States and it's also among the busiest tourist railroads in Colorado (a state with more than its fair share of heritage railways).

Early History

The plan to build a railroad to the summit of Pikes Peak dates back to the early 1880s. In 1883, a group of investors began to work on a 27-mile-long narrow gauge adhesion railroad to the summit, but financial issues quickly torpedoed that effort. The idea for the cog railway is credited to former Manitou Springs Mayor John Hulbert, a Civil War veteran and investor in the original failed venture. The newly chartered Manitou & Pike's Peak Railway Company of 1888 used a standard gauge, nine-mile-long, center double-toothed Abt Rail cog system to cope with grades up to 25 percent along the way (the average grade is 16 percent). In September 1889, hundreds of foreign laborers began

ABOVE: A Pikes Peak Cog Railway train climbs the slopes of its namesake mountain at a spot called Windy Point. In the distance, you can see Colorado Springs, Colo., on the left, and Lake Moraine on the right.

RIGHT TOP: Two trains sit at the summit of Pikes Peak on October 23, 2021. The trains are led by Swiss-built Hm 4/4 cog locomotives. Trains spend about 40 minutes at the summit.

RIGHT: A train prepares to depart the rebuilt Manitou Springs, Colo., station on October 22, 2021. The building on the right was once a trolley depot but now houses the cog railway's main offices. JUSTIN FRANZ PHOTOS

construction; almost all the work was done with simple tools — pickaxes, shovels, and wheelbarrows. After two years of hard, back-breaking work, the first train reached the 14,115-foot summit on June 30, 1891. Three Baldwin 26-ton coal-burning steam engines were ordered for the start of service, and by 1906, three additional steam locomotives joined the roster. Steam power was the mainstay on the railroad until September 1958.

Over the last 130 years, there have been only four owners of the line. Current owner Phillip Anschutz, through his Anschutz Corporation, purchased the assets of Broadmoor Hotel, including the railroad, in 2011. Anschutz is no stranger to railroading, having purchased Denver & Rio Grande Western back in 1984 (he

sold the Rio Grande, by then combined with Southern Pacific, to Union Pacific in 1995). He also owns Grand Canyon Railway through his Xanterra Travel Collection, a resort management company that does work mostly in national parks, including Grand Canyon, Yellowstone, and Glacier.

Rebuilding

By 2017, Pikes Peak Cog was a tired and rundown railroad. In October of that year, the decision was made to close the railroad for the winter to do some maintenance and reopen the following spring. Until 2007 the railroad rarely operated in winter, and major maintenance work happened during the off-season. For more than a decade, a lot of that work

had been ignored. Also receiving attention was the railroad's rolling stock fleet, a mix of home-built, General Electric, and Swiss Machine & Locomotive railcars built throughout the 20th century, some as early as 1938 and others as late as the 1980s. But the work needed on the equipment and right-of-way was much greater than anticipated and in 2018, the future of the railroad was very, very uncertain. Some doubted it would ever run again.

That same year, the railroad began negotiations with the city of Manitou Springs, which resulted in a large tax break for the cog railway, and a pledge by the railway's owners to spend \$100 million to rehabilitate the iconic attraction. The owners circled May 2021 as their

goal for reopening.

With the tax incentives approved, a study was launched by European cog railway engineers. They recommended the relaunch of the entire cog railway, going as far to suggest that the line be electrified, as many Swiss cog railway operations are, which was ruled out. By 2018, a plan was in place to completely rebuild the nine-mile railroad. The result would essentially be a modern Swiss railroad dropped into the mountains of Colorado. The railroad's general manager, Spencer Wren, said the decision to rebuild the railroad was due in large part to the owner. "We're extremely lucky to have an owner like Phillip Anschutz who loves the history of the American West and railroads," Wren said.

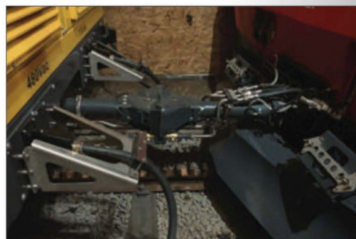
As part of the \$100 million spent to upgrade the railway, the engineering firm of Casey & Witbeck was contracted to replace the 40-pound running rail with 65-pound rail, replace ties, and remove and replace 13 turnouts, three passing sidings, and the summit platform. The passing sidings were lengthened to

accommodate the locomotive and three-car trains that were being ordered for the revived railroad.

All the old track was removed in March 2019. In May 2020, the new track and ballast were laid from the summit downhill to Manitou Springs, as it had been done with the original construction. This time, construction work was done with trucks, utilizing the 19-mile-long Pikes Peak Toll Road to move equipment and material to the job site. While human vandalism was little evidenced during the reconstruction, yellow-bellied marmots did cause some mayhem at the worksites and on at least one occasion, the critters snuck in and stole a worker's lunch.

Besides replacing the running rail (the two rails on the outside), the Abt rack rail, which had been the standard on the mountain since the 1890s, was replaced with 115-pound single-rail toothed Strub

rail, as used by the world's second-highest cog railway, Switzerland's Jungfrau. While the railroad had tried to secure the 65-pound running rail in the U.S., that turned out to be cost-prohibitive, so instead rail was purchased in Poland and shipped to Colorado. The new Strub cog rail in use was manufactured in Switzerland.



ABOVE: This photo taken at the Manitou Springs station shows the difference between the more traditional outside rail and the cog rail in the middle, which helps propel the train uphill. JUSTIN FRANZ PHOTO

RIGHT TOP: In the shop, a new Stadler diesel electric is connected to the new Zaugg snowblower, which cannot move on its own. RALPH SPIELMAN PHOTO

RIGHT MIDDLE: General Manager Spencer Wren is inside the Pikes Peak Cog Railway Shop at Manitou Springs, Colo., in October 2021. JUSTIN FRANZ PHOTO

RIGHT BOTTOM: A Pikes Peak engineer sits in the cab of one of the new trains built by Stadler Rail of Switzerland. The Stadler trains are considerably newer than the Swiss Locomotive & Machine ones (BELOW). "One of our engineers likened the change from the old trains to the new ones as going from a Model A to a spaceship," said General Manager Spencer Wren. GARRISON COUNTS PHOTO

BELOW: Looking at the control panel of an SLM railcar, many controls look the same as other DMUs, but there are distinct differences; besides the cog, train, air, and emergency (ratchet) braking systems, a steering wheel-like device looms large. There is no actual steering involved; this is the throttle for acceleration or braking. RALPH SPIELMAN PHOTO



LEFT TOP: It's train time in the morning at the renovated Manitou Springs depot, with two morning departures getting ready to leave. With as many as 12 departures during the day, with 40 minutes between outbound trains, the cog railway hits some commuter rail operation rider metrics. COURTESY OF BROADMOOR HOTEL

LEFT: Two trains meet at Windy Point, elevation 12,129 feet, on October 23, 2021. On the left, one of the older Swiss Locomotive & Machine trains built in the 1970s and 1980s keeps the main line going downhill while one of the new Stadler trains (RIGHT) stays in the siding. JUSTIN FRANZ PHOTO

Machine Works articulated railcars; passing sidings were lengthened to hold the four-unit trainsets. While there are no specific prototypes for the engine type, the passenger coaches were derived from Stadler EMU units operated by the Corcovado Rack Railway in Rio de Janeiro, Brazil.

Also ordered was a brand-new snowblower manufactured in Switzerland by Zaugg; a similar prototype was delivered in 2011 to the Rhaetian Railway in Switzerland. To conform to American rules, the interior cabin had to be redesigned to meet fire safety standards and the diesel engine had to meet new emission standards as well. The 32-foot-long, 9-foot-wide non-self-propelled machine operates with a two-man crew capable of cutting through snowdrifts up to 10 feet high and 20 feet wide, allowing for operations to the summit all year long. The diesel-hydraulic drive is designed to gobble up 4,200 tons of snow per hour and blow it up to 100 feet away. One of the new Stadler diesel-electrics will be needed to move it during use.

General Manager Wren said the new trains are popular with crews, especially when compared to what they were using before. "One of our engineers likened the change from the old trains to the new

Other improvements were also made during the four-year shutdown, specifically at the summit where a new \$65 million Visitor Center was built, replacing a smaller facility built in 1964. The new center was not part of the \$100 million railroad rebuild but is used by both the cog and the toll road, which runs up the other side of the mountain. The new facility features restrooms, a snack bar, a gift shop, and a science center. It also has a series of ADA-compliant ramps so everyone can take in the stunning views from the summit.

At the bottom of the mountain, the Manitou Springs station was completely rebuilt to accommodate a second track and double ADA-compliant high-level platforms, enabling the railroad to load one train and unload another simultaneously. This helps increase train frequency and visitor capacity.

Equipment

Of the railroad's pre-rebuild roster, only four of the Swiss Locomotive & Machine Works railcars were upgraded to run on the new Strub rail system. The articulated diesel railcars can hold up to 214 passengers and were built in 1975 and 1988. To supplement the roster and replace older equipment, the railroad ordered three all-new trainsets from Swiss-based Stadler. Each train includes a 1,020-hp diesel-electric locomotive (classified as an Hm 4/4) and three non-powered passenger cars, one with a cab at the end, allowing push-pull operation.

Like many cog railways, the locomotive pushes the train uphill. Each 215-foot trainset (built of aluminum, instead of the traditional steel) carries 263 passengers in a 3-2 seat configuration. The Stadler trainsets are considerably longer than the old Swiss Locomotive &



ABOVE: While the railway was completely rebuilt, the four SLM diesel-hydraulic rail car sets were shipped out for new Strub cog rail use and had their Cummins small cam 855 engines upgraded to large cam ones for more horsepower. Originally, all railway equipment was conveyed on streetcar tracks that connected to rail lines, which were torn up in 1930s. Now, everything is trucked in, as evidenced by a car being lowered into the Manitou Springs yard with cranes before the resumption of service in May 2021. COURTESY OF BROADMOOR HOTEL



RIGHT TOP: An interior of one of the nine new Stadler passenger cars. It has 3-2 seating and large opening windows on the top half with no vestibule doors. Given the relatively short length of the ride and lack of turning facilities at either end, with the exception of a few seats scattered through the three cars, fixed back-to-back seating is the rule for most riders. RALPH SPIELMAN PHOTO



RIGHT MIDDLE: At the higher elevations, the tree line starts to fade away against the rocky landscape. RALPH SPIELMAN PHOTO

RIGHT BOTTOM: A Pikes Peak Cog Railway train departs Manitou Springs, Colo., on October 22, 2021. The small yard here features a number of automatic switches which greatly streamlines the operation compared to the old manual switches. JUSTIN FRANZ PHOTO

ones as going from a Model A to a spaceship," he said.

Current Operation

With the current equipment, the railroad can usually provide up to 11 trains daily on the nine-mile journey. A trip on the railroad takes about three hours: one hour and 10 minutes to reach the top, 40 minutes to take in the view and explore the Visitor Center, and then another hour and 10 minutes back down; the running time includes one or two meets en route. The trains do not have air conditioning (just open a window for that cool mountain air) or bathrooms (you'll have to go either at the top or bottom).

Unlike regular passenger trains, braking can be done by rack-and-pinion operation or air, train, or ratchet brakes. The new diesel electric are capable of a top speed uphill of 16.5 mph and 11 mph going downhill, considerably faster than



the older trains still in service. But one advantage to the older Swiss Machine & Locomotive railcars is that they have a "railfan seat" right next to the operator on either end of the train, meaning at least one lucky guest can get a cab ride, or something close to it.

Historic Equipment

Four of the original six steam engines built for the railway are on display. Baldwin locomotive 1 can be seen at the Colorado Railroad Museum, 2 is in front of Manitou Springs Memorial Park, 4 is on display at Grand Canyon Railway, and 5 is at the Broadmoor Hotel. Until a few years ago, locomotive 4 was still in operating condition but the railroad did not opt to update it to run on the new rack system, citing extreme costs of such a conversion.

Self-propelled snowplow 22 is on display at the Pueblo Railroad Museum,

which also owns a non-powered coach, 104, one of the six original cars built by Wasson in 1890. Other original non-powered coaches survive as well — Wasson-built 105 is in storage; 106 (1906 ACF), cut in half and truckless, is in use at the Mountain View station on the railway; later-built coach 8 is in storage; and 12 is at the Colorado Railroad Museum. Eight self-propelled railcars survive as well, with the original 1938 home-built 7 at the Colorado Railroad Museum along with 9, a 1948 General Electric product. The other remaining GE and SLM railcars are preserved within the local area.

Mount Manitou Scenic Incline Railway

In addition to the cog railway, a mile-long, three-foot narrow gauge railway, evoking the inclines in Pittsburgh, was built in 1903 to move workers, pipe sections, and supplies to support the construction of a hydroelectric plant above

the Manitou Springs station. The route's 2,000-foot gain required grades as steep as 68 percent up the 8,600-foot Mount Manitou that looms over the city. When the project construction was finished, the view from the top was too magnificent to ignore; Dr. Newton Brumback acquired the line and reopened it to tourists in 1908. Seven years later, it was acquired by Spencer Penrose, who then opened the Broadmoor Hotel a year later. The hotel operated it until 1990 when a mudslide destroyed 500 feet of track and a repair estimate of \$100,000 was deemed too expensive for continued operation. In 2013, the line reopened as a trail. The 2,700 steps to the top are sure to challenge even the best hiker.

While the incline is now a trail, Broadmoor, Manitou & Pikes Peak Cog Railway endures. Four years after it was threatened by a permanent shutdown, this unique railroad will continue climbing up and easing down Pikes Peak, much to the delight of each and every guest, as it has done since 1891. It's safe to say that American ingenuity and Swiss technology will continue to amaze travelers for generations to come.

It's well worth the ride. 🇨🇦



LEFT: A passenger points out some of the sights to his fellow passengers during a ride up to the summit of Pikes Peak in October 2021. JUSTIN FRANZ PHOTO

LEFT BOTTOM: A railway crew member waves at Car 18's passengers at Mountain View (10 feet lower than the 10,022-foot-high Cumbres Pass on Cumbres & Toltec Scenic) with Car 19 in the hole for the downhill train. With a technological foot in the 19th century, 21st century stored solar energy is used for power in hard-to-reach locations. RALPH SPIELMAN PHOTO



BELOW: A young boy waves to the passengers on a passing train during a meet at Minnehaha, elevation 8,332 feet, in October 2021. JUSTIN FRANZ PHOTO

