

Tunnel 6: The Great Bore Over the Sierras
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Tunnel 6 has been called the Most Interesting Unknown Historical Spot in California. Many people, mostly locals, visit but multitudes more have no idea it exists.

The Daily Alta California (June 20, 1868) said the Transcontinental Railroad was "the grandest engineering feat ever attempted by man." Tunnel 6 was the grandest engineering feat of the transcontinental railroad.

Chinese workers began work in earnest in 1866 from both the east and the west ends. They worked in the tunnel eight hours a day six days a week even in winter. Granite is one of the hardest rocks on the planet and, chipping away at the rock with sledge hammers and spade shaped drill bits, progress was measured in only inches a day. It would take two years to finish the tunnel.

The work must have been miserable. The tunnel is cold year round but it's freezing in winter. The first year of work there were 44 storms one of which dumped ten feet of snow. So besides working on the tunnel the Chinese had to dig snow tunnels and travel from their barracks to the work faces through them. The work faces were lit by candles and lanterns. There was no ventilation. The air must have been full of black powder and granite residue from previous blasts. After each explosion and after the dust settle, mostly, the broken rocks were carried out by hand. The drilling was hard. One man held a drill bit which two others hit it with sledge hammers. After each hit, the bit was rotated 90 degrees. They did that in the dark, in the cold, eight hours a day, six days a week for two years. There is no record of broken and bruised hands resulting from missed sledge hammer blows.

Outside the tunnel it was dangerous work too. The Chinese endured frostbite, avalanche, accident, pneumonia, explosion, rock slide, disease, and cold, continual cold. The winter of 1866-67 had one of the highest snowfalls on record: 40 feet. Workers didn't see daylight for days at a time as they moved from their living sheds to the work faces through tunnels dug into the snow. One avalanche took away a cabin filled with Chinese workers who were not found until spring. The lowest temperature recorded that winter was 5.5 degrees.

The Big 4 of the railroad were increasingly frustrated by the slow progress. They got paid by miles of rail laid. While they were stuck on the Sierra tunnels they were not laying rails. They were not collecting money. Then the Union Pacific, coming from the east, taunted the Central Pacific saying they'd get to California before the Central Pacific even got out of the Sierra. The Big 4 thought that was a possibility. So they sunk a shaft down the middle of where Tunnel 6 would go and worked from the inside out as well as the outside in. Even with four crews working at a time, the Chinese only progressed about one foot a day.

Amazingly, using only string and transit, all four tunnels lined up even though Tunnel 6 rises from east to west and has a slight curve.

The building of the Great Tunnel captured people's imaginations and it was more than just a railroad tunnel. There was a stream of reporters and visitors to the tunnel construction site to report on the progress. Their flowery prose, repeated from newspaper to newspaper, tells us a lot.

"For the first time since the dawn of Creation, this grand chain of mountains was now penetrated by the railway car, carrying into its very fastnesses [sic]... hundreds of residents of a rich and populous State, itself scarcely inhabited but twenty years ago. No wonder, then, that the occasion was one of enthusiastic rejoicing. No wonder that cheers, deafening and prolonged, echoed and re-echoed along that subterranean granite chamber - cheers heard even above the screeching of the iron pilots of the train." (Daily Alta California December 10, 1867).

Certainly California's and maybe even the whole Nation's feelings can be seen in an article, printed in a number of newspapers, called, "The Mountains Overcome" celebrating the tunnel's completion.

"The telegram which, starting from the summit of the Sierras [sic] on Saturday afternoon last, flashed across the continent to the shores of the Atlantic and underneath that ocean to Europe... On that day the track of the Central Pacific Railroad reached the summit of its grade... The flag of the Union was immediately planted... signifying that an event had occurred which, more than any other, assures the continued unity of this great republic. For the completion of a railroad across the Sierras [sic] removes the only obstacle which has been regarded as insuperable to a vital connection between the Atlantic and Pacific coasts. For California it means much, but it means more for the country at large and for mankind.

"The people of this continent are no longer severed by mountain barriers... We may now make certain of a common national life that shall secure not only our own best interests, but the largest and noblest influence upon the nations, from whom, on either hand, we are parted by an ocean, and whose destinies we must seriously affect.

"... The company have great reason to congratulate themselves upon the monument of American engineering, energy and enterprise which their road undoubtedly is. No other great public work has met with obstacles apparently more insuperable, and none has overcome its difficulties of various kinds, with more determined perseverance... in the East and in Europe they will fill the public mind with added respect for the practical genius of the American people (Sacramento Daily Union December 2, 1867).

Boring machines are used to bore tunnels today. A circular boring machine can bore a tunnel 20' in diameter at a rate of about 50 feet a day. Making Tunnel 6 today would take about a month, rather than the two years it took in 1866-67.

Sidebars

"The drillers are all Chinamen, and most excellent hands they make, as will be seen when I state that a gang of three can drill three holes of one and a quarter inches in diameter and two and a half feet deep in twelve hours."
(Sacramento Union April 22, 1867)

“... Lake Angela, a lovely little mountain gem. It was like picnicking at the North Pole; for snow lined the higher ravines and icicles hung from the water-tanks on the stage-road. Here during the previous winter [1869] they [workers] were engulfed by a snow-slide. Seeing it approach they stepped behind a tall rock; but it carried them fifty feet deep. In spring their bodies were found standing upright, with shovels in their hands. For several miles the track must be roofed to slide off the snow. There will be less than a mile of tunneling, all near the crest. The cost of the most expensive mile of road is estimated at three hundred and fifty thousand dollars.”

(Beyond the Mississippi 1869)

- To learn more on this topic, join us on June 8, 2019 for a historical talk on the Chinese Tunnel, Clair Tappaan Hotel, 19940 Donner Pass Road, Norden, CA. Bar-b-que dinner available.
- For more information and a list of summer activities going on in Truckee to celebrate the sesquicentennial of the Transcontinental Railroad go to <https://goldspike.org> or the Facebook page: Donner Summit-Truckee Golden Spike Celebration.

About the author:

Bill Oudegeest has had a house on Donner Summit for more than forty years. He is a retired public school teacher and administrator and one of the founders of the Donner Summit Historical Society. He writes and edits the Donner Summit Heirloom, has published two books on local history, written a variety of pamphlets and exhibits, leads hikes, etc.