

FEATURE

Chinese Americans and the Transcontinental Railroad

The Sierra Nevada Mountains and the Chinese Railway Strike 1866-1867

By Philip Chin

The Route through the Sierra Nevada Mountains

In building train tracks over mountains the important consideration is that whatever route is built must never exceed a certain steepness. Too steep a grade means less cargo can be carried as the train engine has to fight more and more against the force of gravity to move a given load. Combined with wet and slippery tracks, as you often find in mountains, too steep a grade and heavy cargo can also add up to expensive and disastrous consequences.



As anyone that has taken the Central Pacific line through the area knows the train tracks zigzags back and forth and around, over bridges, through valleys, through cuts in the earth, curving ever upwards towards the summit. The convoluted route is designed to minimize the grade, trading distance traveled to lessen the grade of the climb to the summit.

Every bit of this route had to be meticulously planned by civil engineers and then dug out and flattened by laborers to allow train tracks to be laid evenly atop a bed of stabilized gravel that kept the railway bed free of rainwater and ice in winter that could potentially buckle the tracks. Where necessary black gunpowder was used to blow a route through the rocks.

In 1861, at the start of the Civil War, gunpowder supplies shipped in from the Eastern United States had almost completely stopped as

military needs took up the available supply. The Central Pacific Railroad had to become involved with other businesses in creating a gunpowder mill, the California Powder Works near Santa Cruz to meet their own demands as well as the demands of California agriculture and industry.

Other than using gunpowder to dislodge rock and move huge amounts of earth the only other way was using men patiently chipping away with pickaxes and shovels and hauling away the resulting debris by hand. This labor intensive method was often used where blasting risked destroying a rock shelf where the track needed to go which happened very often as well as to smooth out areas roughly cleared out by blasting. The great earth moving machines that we take for granted in such tasks today were decades away from being invented and used in industry. Where a rock shelf needed to be created along a mountainside a series of holes would be drilled

by hand along the cliff face by workers dangling from baskets. The holes would then be packed with gunpowder and a single worker would light the connected fuses then be quickly hauled back up to safety.

At least one theory of the then popular phrase, “Chinaman’s Chance in Hell,” meaning no chance at all, came from the fact that not all the fuse lighters were hauled up in time to avoid the fatal blasts which brought down tons of rock at a time. The railway passage was made at least 20 feet wide so much blasting and work were required.

The area selected for the tunnels cutting through the mountains was Donner Pass, 7056 feet above sea level, and about 9 miles west of Truckee, California. The pass and nearby lake were infamously named after the Donner Party of 1846 whose wagon train had been snowed in that winter. Out of 81 members of that party 36 perished, with some of the survivors reduced to cannibalism to survive. Donner Pass regularly records wind gusts of over 100mph during the winter and annual snowfall totals measured from 1871 to 2001 averages a median of 380 inches (the highest recorded was 819 inches of snow in 1938.)

The reason why tunnels were built here instead of along shelves along the mountainside as in others areas of track was explained in an 1870 paper presented by John R. Gilliss to the American Society of Engineers, “The tunnels of the Central Pacific are nearly all near the summit, where it crosses the western range of the Sierra Nevada. The line here lies on steep hillsides, in some cases being, for long distances, on a face of

bare granite, more or less broken by projecting ledges and boulders, but with an average slope often greater than 1 to 1. In such places embankments were almost impracticable ; the hills were too steep to catch the slopes, and most of the rock from cuts was thrown far downhill by heavy seam blasts.”



The Great Summit Tunnel of the Sierra Nevada – Central Pacific Railroad

Initial work started on the first tunnel cutting in 1865 but the early onset of winter weather (snow in August no less) stopped all such work. Work resumed in 1866 using three shifts of men working 24 hours a day in 8 hour shifts. Snow sheds, shelters, and hand-built stone retaining walls 75 feet high (known as the Chinese Walls)

were built to protect the track laying and in preparation for the winter snows. Mule trails for supplies were also built to insure that supplies could continue to be delivered throughout the winter months. Deep within the mountainsides in the tunnels temperatures remained constant in winter so drilling work could continue.

The winter of 1866 saw numerous avalanches that swept workers and their shelters away. As Gilliss reported in his paper the area was hit with 44 winter storms, the longest lasting two weeks. Snow tunnels had to be dug to connect the various parts of the operation stretching in lengths from 50 to 200 feet. Donner Pass, one of the snowiest parts of the United States, recorded 18 feet of snow during the winter of 1866. The amount of effort needed to shift so many tons of snow to connect the various work areas by hand can only be imagined now.

In total fifteen tunnels would be built by the Central Pacific Railroad, the longest was the

Tunnel No. 6, the Summit Tunnel, which was over 1,659 feet long and carved through solid granite at a depth of 124 feet into the rock at over 7000 feet above sea level. It had taken 15 months to complete and was finished in August 1867.

Construction of all the tunnels was helped by the fact that nitroglycerine replaced black powder for explosives in 1867. The highly unstable explosive mixture was banned from transportation in California and all private supplies confiscated because of the mayhem it had produced when an errant package had blown up in the Wells Fargo office in San Francisco and killed 15 people and injured many others. But the explosive was much more efficient, producing more blasting power for the same weight while producing less choking smoke that delayed further charge setting and blasting. The explosive could also be used in damp areas where black powder would be rendered ineffective or useless.

When a British chemist, James Howden, promised he could mix nitroglycerine on site for the enormous sum of \$300 a month and all the materials he needed, he was immediately rushed into the mountains to make it for the railroad. But the hardness of the granite rock being excavated in the tunnel boring can be judged by an observation that Gilliss made that, "In the headings of the Summit Tunnel the average daily progress with powder was 1.18 feet per day; with nitroglycerin, 1.82 feet, or over 54 percent additional progress. In the bottom of the Summit Tunnel, average daily progress with powder, full gangs, was 2.51 feet; with nitroglycerin, 4.38, or over 74 percent in favor of nitroglycerine."



Charles Crocker explained his philosophy of pay in his 1877 testimony to Congress saying, "I have hired white men and paid them bigger wages than I did Chinamen when I knew that the Chinamen were earning more money for me than the white men. I did it, nevertheless."

Gilliss in his paper to the American Society of Engineers had this to say about the Chinese workers:

Laborers. — With the exception of a few white men at the west end of tunnel No. 6, the laboring force was entirely composed of Chinamen, with white foremen—the laborers working usually in 3 shifts of 8 hours each, and the foremen in 2 shifts of 12 hours each. A single foreman, with a gang of 30 to 40 men, generally constituted the force at work at each end of a tunnel; of these, 12 to 15 worked on the heading, and the rest on bottom, removing material, etc. When a gang was small, or the men needed elsewhere, the bottoms were worked with fewer men, or stopped so as to keep the headings going. The Chinamen were as steady, hard-working a set of men as could be found. They were paid from \$30 to \$35, in gold, a month, while the white men were paid about the same, but with their board thrown in. The force at work on the road probably averaged from 6,000 to 10,000, nine-tenths of them being Chinamen.

Charles Crocker in his 1877 Congressional testimony added his own praise to the tunnel work of the Chinese saying about their powers of endurance:

They are equal to the best white men. We tested that in the Summit tunnel, which is in the very hardest granite. We had a shaft down in the center. We were cutting both ways from the bottom of that shaft. The company were in a very great hurry for that tunnel, as it was the key to the position across the mountains, and they urged me to get the very best Cornish miners and put them into the tunnel so as to hurry it, and we did so. We

went to Virginia City and got some Cornish Miners out of those mines and paid them extra wages. We put them into one side of the shaft, the heading leading from one side, and we had Chinamen on the other side. We measured the work every Sunday morning; and the Chinamen without fail always out-measured the Cornish miners; that is to say, they would cut more rock in a week than the Cornish miners did, and there it was hard work, steady pounding on the rock, bone-labor. The Chinese were skilled in using the hammer and the drill; and they proved themselves equal to the very best Cornish miners in that work. They are very trusty, they are very intelligent, and they live up to their contracts.

The Strike of 1867

The publicity the Chinese had earned as hard workers on the railroad project led to them being hired away by other employers needing reliable labor. The Central Pacific raised wages for the Chinese from \$31 to \$35 a month from which they still had to pay their own board (meals.)

Charles Crocker estimated this board amounted to \$9 a month. Edwin Crocker, legal counsel of the Central Pacific and older brother of Charles Crocker commented about the competition for Chinese workers, “We have proved their value as laborers & everybody is trying Chinese & now we can’t get them.”

White laborers meanwhile were also paid \$35 per month but were provided their board by the railroad for doing the same or often less strenuous and dangerous jobs. Whites were generally also placed in supervisory and management positions over the Chinese as a matter of course anyway so they were naturally were paid more money. Charles Crocker explained his philosophy of pay in his 1877 testimony to Congress saying, “I have hired white men and paid them bigger wages than I did Chinamen when I knew that the Chinamen were earning more money for me than the white men. I did it, nevertheless.”

There was also a new danger towards the Central Pacific Railroad. In 1866, the Union Pacific had hired a real professional railroad man, John “Jack” Casement, who’d made his name in building Pennsylvania railroads before the Civil War then successfully led Union troops in battle during the war. He had the knack for getting a lot of work done from his former Union and Confederate soldiers as well as Irish immigrants. They were building three miles of track a day and newspaper reports had Casement bragging about his men being capable of laying five miles of track a day.

The nightmare for the Central Pacific was that federal government payments were based upon the total miles of track built. Drilling through granite at a pace of 1 to 3 feet per day wasn’t competing, especially when the federal railway law said that any railroad that failed to fulfill its obligations by building sufficient track would not only lose all its assets when their government contract was taken away, they would also not get paid the 20% of funding the federal government was withholding until final completion was certified.

The rapid pace of building by the Union Pacific also led to fears that it would be the railroad that

connected California to the East Coast while the Central Pacific were still stuck uselessly in their mountain tunnels. In either case the Big Four stood to lose their personal fortunes so



Chinese railroad workers proved their ability to handle the grueling work of laying track and eventually made up over 90% of Central Pacific workers.

they were very motivated to press the workers to hurry their work as quickly as possible.

It was at this critical time on June 25, 1867 that a small group of Chinese chose to go on strike to protest against the wide wage differential between them and the whites as well as the long hours from dusk to dawn. They demanded \$40 a month and a 10 hour maximum workday as well as shorter shifts in the dangerous tunnels. Charles Crocker refused their demands. Other camps of Chinese heard about the strike and not only joined it but raised the demand to \$45 a month.

Charles Crocker thought it was a conspiracy by the Union Pacific to sabotage the Central Pacific. He described the strike in these words to Congress in 1877.

The Chinese circulated a document among themselves, all through the camp, and on the next Monday morning they refused to come out. That was done on Saturday, and on Monday none of the laborers came out. It was a strike; they remained idle.

I think they were incited to this by emissaries from the other side who wished to keep us in the mountains while they were building the road over the plains. We always supposed they were incited to it by emissaries from the other side, although we never could prove it. If there had been that number of white laborers on that work in a strike there would have been murder and drunkenness and disorder of all kinds; it would have been impossible to have controlled them ; but this strike of the Chinese was just like Sunday all along the work. These men staid in their camps; that is, they would come out and walk around, but not a word was said, nothing was done; no violence was perpetrated along the whole line. I stopped the provisions on them, stopped the butchers from butchering, and used such coercive measures. I then went up there and made them a little war speech and told them they could not control the works, that no one made laws there but me. I talked to them so that they could comprehend what the rules and regulations were, and that if they did not choose

to obey they could go away from the work, but under no circumstances would I give way to them. I gave them until the next Monday morning at six o'clock to come back, and told them that every man who went to work then should be forgiven for the week's strike, but that all others should be fined. We had a system of fines for men not coming out, keeping foremen and keeping horses at work when there were not enough laborers, and we charged the expenses of the horses and carts to the gang who failed to keep them employed. They well understood what fining meant for the week's idleness, and on Monday morning at six o'clock the whole country swarmed with them, and we never had so many working before or since as we had on that day. They returned peaceably to work.

What Charles Crocker in fact did was stop all food shipments to the remote building camps. He also hired armed whites and had them brought up to the camps to stand around in intimidating fashion. After a week of non-violent protest the starving Chinese returned to work.

This strike action directly contradicted the popular narrative across America that the Chinese were another servile class of workers akin to slaves in the Old South before the Civil War. Politicians and agitators that preferred this view argued that the Chinese Six Companies and their co-conspirators in the railroads were undercutting free labor by the importation of a new servile class that would destroy American liberty and eventually lead to a new civil war.

Crocker and Strobridge always privately boasted that the threat of Chinese labor was used to keep the Irish in line when they threatened to go out on strike for higher wages. This was also the threat they used to coerce white workers into working alongside Chinese when the Chinese were first hired by the Central Pacific Railroad after they'd refused to. Both men were ruthless when it came to making money but were careful to keep such sentiments out of public view

Crocker in fact argued in public that importing Chinese gave whites more

opportunities to go into management, own their own businesses, and be paid more when they would otherwise be stuck in lowly jobs since the work still would have to be done by someday. But he was openly contemptuous of much of the white lower class saying, "I believe those white men who are now occupying low positions in our society here are men who have degraded themselves by their vices; they feed their appetite for liquor and for vicious habits and keep themselves down in that way."

He even made the extraordinary argument that, "If a Chinaman has lived in our country long enough to become educated in our language and to understand our institutions, he will make just as good a voter as I will. If he should become a citizen, I believe he would make just as good a voter and have just as much care for his material welfare and prosperity as a citizen as I have." Much of Crocker's testimony to Congress appears self-serving and contradictory but at least here he seems to have expressed his own honest view here.

Approximately 10,000 Chinese railway laborers going on strike was probably the biggest strike action of the 19th Century. It was a tragedy that the incident didn't make any impression on the growing labor union movement then being born in the United States. Many of those labor unions fully subscribed to the view of white superiority and that the Chinese were a servile race acting at the behest of their capitalist masters to undercut the wages of white men and incapable of independent thought. These groups would be among the backbone of rabid supporters of the Chinese Exclusion Act into the 20th Century when the contributions of the Chinese to the building of the Transcontinental Railroad were quickly being forgotten and scrubbed from America's consciousness.



June 24, 1867:

Chinese workers earn respect.

Between five and seven thousand Chinese laborers working on the Transcontinental Railroad staged a strike in the Sierras to protest overseers who whipped and restrained them from seeking other work. They won the right not to be whipped or beaten. A second strike in the Nevada desert won the Chinese the right to receive the same pay as Whites, \$35 a month. But the Chinese were still required to buy their own supplies while Whites got free room, board and supplies.

The Chinese were smaller than the Whites, averaging 4'-10" and 120 pounds, but they handled the 80-pound ties and 560-pound rail sections so well that by the time the last rails were joined at Promontory Summit, Utah, 11,000 Chinese comprised over nine of ten Central Pacific workers. To recognize their diligence, an all-Chinese crew of eight were given the honor of bringing up and placing the last section of rail on May 10, 1869.