



The DENVER WESTERNERS
ROUNDUP

July - August 2007



The National Park Service's exact reconstructions of Central Pacific's "Jupiter" in the foreground facing the Union Pacific's "119"

T-Rex, Schmee-Rex

**The Building of the Transcontinental Railroad
by David Emrich, P.M.**

(presented Jan. 3, 2007.

Dec. 20, 2006 meeting postponed due to snowstorm)



Our Author

David Emrich has been a member of the Denver Westerners since 1986. This is the fifth paper he has presented to the Denver Westerners. Previous papers have been: "Early Colorado Filmmaking" in 1990, "Tom Mix in Colorado" in 1996, "Silver Dollar Tabor" in 2000 and 2004's "*The Limited Mail and The Trail of '98, Movies shot in Colorado in the 1920s*".

David is President and a senior editor at Post Modern Company, a video and film production company in Denver. His firm, opened in 1992, produces documentaries, television promotion and programming, independent feature films, commercials and corporate projects. He has edited a number of documentaries including the Academy Award-winning short documentary, *A Story of Healing* in 1997. David is the author of a book—*Hollywood, Colorado*—and a couple of companion DVDs on the history of early filmmaking in Colorado.

David wishes to thank the Westerners once again for the on-going inspiration for the research and presentation of these programs. He also wishes to thank his wife Mary (and all other spouses in a similar situation) for putting up with the obsession that is research, and in this case, for driving across middle-America in August!

T-Rex, Schmee-Rex

The Building of the Transcontinental Railroad

by David Emrich, P.M.
(presented Jan. 3, 2007.)

Dec. 20, 2006 meeting postponed due to snowstorm)

The initial reason I wanted to present this paper was because of a movie: not a Hollywood movie, but a National Park Service movie that has a personal connection. A year and a half ago, my company was approached by Golden Spike National Historic Site to rejuvenate their Visitor Center film. Because the Park Service's budget has been cut back so much over the last 20 years, it is very difficult for any site to do almost anything new. So the request came to try to make their centennial-celebration film last another 10 to 20 years. As it turns out, 38 years ago, this film was produced by my father. And I remember this film to be the film I saw as a kid where I thought, "gee, my dad has a cool job." Now I can't say that this movie was the reason my career has been spent in film and video, but I have come to call *The Golden Spike*, my Freudian Film.

As we reworked the film—improving the image quality and reworking the sound nearly from scratch—I began to reacquaint myself with the transcontinental railroad's history. What an amazing story it is. In an era in which very little mechanical assistance was available, the Union Pacific and Central Pacific companies completed 1776 miles of operating track between the final year and a half of the Civil War and the driving of the Golden Spike on May 10, 1869. Ultimately, what attract-

ed me to this story was how difficult the construction was and how much it affected the history of the West, the history of America.

At the same time we were working on the movie, we were living with a monster highway/rail project running through Denver, appropriately named T-Rex. I couldn't help but think how different these transportation projects were from each other. But I also thought about the things that were similar. There were people that doubted the viability or feasibility of building either of the lines. Both were major publicly funded projects that were impetuses for development. And both involved the construction of rail lines, lines that were seen as test runs for additional construction. That being said, there are many more differences than similarities.

Now admittedly the complexity of the final outcomes of the two projects are different, but in roughly the same time that the men of the Union Pacific and the Central Pacific built 1776 miles, T-Rex's workers built 17. The weather we've seen in the winter of 2006-2007 would have shut down the workers of T-Rex. For the men of the Central Pacific, they would have just worked through it, for months at a time.

Where we as a community were inconvenienced by the construction of T-Rex because there are so many people, the construction of the Transcon-

tinental Railroad was inconvenienced because there were so few people to help along the way. This isolation from community was both a curse for construction and a personal financial blessing for the men who owned the Central and Union Pacific. There wasn't a lot of support, but neither was there a lot of oversight.

Whereas T-Rex was completed under budget, the American taxpayer probably paid too much money in comparison to what the Pacific Railroad could have been built for. While the funding of T-Rex was assured before construction began, the Union Pacific and Central Pacific struggled to finance their construction efforts as the railroad was built.

Many believe this first railway across the West would not have been built without the help Washington gave. The subsidized construction of the Pacific Railroad, as it was called during the time it was built, demonstrates both the good and the bad of public works. There were political corruption, private enrichment, personal backstabbing and public whitewashing to be sure; but also a tremendous push forward for the nation economically, politically and culturally. And this occurred decades ahead of the time it would have without public assistance.

The Beginning

With the discovery of gold in California in 1849, both the government and the business community saw a need to get the mineral riches of the West to the East. This desire is still strong today, as evidenced by the lengthy coal trains by which many of us get stopped on our travels. In the 1850s, of equal

or even greater interest to business was trade with the Far East. Rather than transporting imports and exports west out of China and India across Europe, some merchants wanted a path to be built across the Pacific, across North America and to the eastern United States. This path would both enhance the international aspirations of the United States and bring goods more cheaply to the eastern United States. Before the Civil War, this was the main purpose for building the "Pacific Railroad."

So beginning seriously in 1853, Congress started to look at five routes across America:

The Northern Route (47-48th parallels)

The Overland Route (41st-42nd parallels)

The Buffalo Trail (38th-39th parallels)

The 35th Parallel

The Southern Route (32nd parallel).

Surveys were ordered and expeditions were taken, but the regional interests of North and South could not be overcome to set a route. The South wanted a southern route, the North a northern route. The Civil War simplified the equation tremendously.

President Abraham Lincoln was a big supporter of a Pacific Railroad. Without his support, the railroad would not have been started when it was. During his first political campaign for the state legislature, he ran on a platform that included support for the construction of a railroad across Illinois. As the Civil War began, he felt that it was important that the gold fields of California and Nevada should be bound together with the eastern states both figuratively and literally. The construction of the Pacific Railroad did have a bit to do with the Civil War. But because most



Union Pacific tracklayers working in Nebraska

believed that it would take ten or more years to build the railroad (if it ever would be), this decision really had little to do with the war.

Personally, I never stopped to think that anything truly significant happened during these war years except the war itself, but what an important decision to make. On November 17, 1863, two days before his Gettysburg Address, Lincoln decreed that the eastern terminus for the railroad would be the western boundary of the state of Iowa between the north and south boundaries of "Omaha City." The Central Pacific had just laid its first rail a month earlier. The Union Pacific would start here, but would not lay its first rails for another twenty months, on July 10, 1865. One very important thing was left undecided, where the two companies would meet. Somewhere between Nevada and Wyoming, the two companies' railroads

would unite; and unite a continent, east to west.

The other early proponent for the Pacific Railroad was an engineer and dreamer in California, Theodore Judah. He was able to get the attention of both Congress and President Lincoln. His research and lobbying efforts laid the foundation for the transcontinental railroad. Some described him as brilliant, even crazy. At the very least, he was persistent. He first worked to find an acceptable route over the Sierras and then worked in the halls of Congress to show that it was possible to build the Pacific Railroad. His efforts were what really moved the transcontinental route from being merely a dream to a reality.

Judah failed to find supporters in San Francisco. But he did find allies in Sacramento. They came to be called the Big Four. First was Collis Huntington, the purist entrepreneur of

the Central Pacific. He was vice president of the railroad and played a key role in acquiring financing, the building materials and rolling stock for the company. On a trip east in 1862, Huntington acquired nearly \$1 million in supplies and rolling stock on the security of only his word.

Mark Hopkins, Huntington's partner in their hardware store, was the first treasurer. He provided the conservative voice for the partners' ever-expanding ventures. He was instrumental in creating the Big Four by demanding that all directors pay for their stock in full, something only the Big Four were able to do. Perhaps this was a tactic to drive away Theodore Judah, who could not afford to buy the stock. Whether or not this was their short-term goal, in the long run, this helped Central Pacific avoid the boardroom brawls that the Union Pacific would have.

Third of the Big Four, and the one with the greatest name-recognition, was Leland Stanford. He too was a Sacramento shopkeeper when he was elected president of the newly formed Central Pacific Railroad on June 28, 1861. The following September, he was elected Governor of California. Stanford used his political influence to benefit the railroad and to solicit financial support from California cities, counties and its legislature. He turned the first shovel of dirt at the Central Pacific groundbreaking ceremony on January 8, 1863.

The fourth was Charles Crocker. When the Central Pacific was formed, he owned a dry goods store in Sacramento. But he quickly recognized the potential of being a major supplier to the new railroad as well as a major

shareholder. The Charles Crocker Company contracted to construct the railroad to the California border. Eventually, he was in charge of construction all the way from Sacramento to Promontory, Utah.

Now it gets a bit confusing. Charles Crocker's brother, E.B. Crocker really was considered to be the fifth member of the Big Four. Because his involvement in the company ended in 1870 after he suffered a stroke—and because of the self-aggrandizement by Collis Huntington in the late 1800s—he was mostly forgotten. He was, however, the fifth large stockholder and replaced his brother Charles on the board of directors once construction started. He was the attorney and business manager during this period of Central Pacific's growth. He worked with Treasurer Mark Hopkins to provide the stable ground necessary for the big dreamers Huntington and Stanford.

These were powerful men who, when all is said and done, worked well together. As an example, early on the Central Pacific was able to get President Lincoln to agree to establish the beginning of the climb up the mountains a mere seven miles outside of Sacramento. To the naked eye, it would appear that this was a bit early; by most accounts it was at least 20 miles too early. There was a simple reason for this early claim. The railroad companies were paid \$16,000 per mile for work on flat grade, \$48,000 per mile for mountain terrain. The Central Pacific was able, therefore, to bill an additional \$500,000 for the work that was done at this early stage. For their efforts, the Big Five of Central Pacific gained notoriety as men who could "move mountains."

On the other side of the mountains, a much less harmonious group of people directed the Union Pacific. The most colorful was Thomas Durant. Durant was a trained physician but never practiced medicine. He was what we would call a venture capitalist and rapscallion. More than anyone, he manipulated Congress and his partners to enrich himself, many times to the detriment of the Union Pacific itself. Officially vice president, Durant marshaled construction financing and worked at every level within the enterprise, from lobbying Congress to intervening in the business of track-laying. In today's business world, he would be back-dating stock options and manipulating multiple interlocking boards of directors; in his day he hid his corruption with dummy contracts and financial maneuvering.

Oliver and Oakes Ames amassed a fortune during the California gold rush by manufacturing picks and shovels. In his book *How We Built the Union Pacific*, Greenville Dodge said of them, "Nothing but the faith and pluck of the Ameses, fortified with their extensive credit, carried the thing through." Oliver Ames served as president of the Union Pacific from 1866 to 1871 and both brothers helped balance Durant's mighty influence on the board.

Oakes, a member of Congress, was personally asked by President Lincoln to help get the railroad built. He took this challenge to heart. Oakes was also the Union Pacific's Congressional lobbyist and, during the financial and political scandal that was revealed as the road was finished, was nicknamed "Hoax Ames." A monument was erected in the Ames' honor at the top of

Sherman Hill between Cheyenne and Laramie, the highest point on the Union Pacific line—at 8,247 ft.

Finally, there was General Greenville Dodge, a lifetime railroader and passionate supporter of the transcontinental line. During the Civil War he was in charge of constructing and maintaining Union rail lines and rebuilding captured Confederate lines. It was here that friendships were formed with Generals Grant, Sherman and Sheridan that served him well during his years with the Union Pacific. During the Civil War he passed information to Durant, who at the time was busy selling contraband cotton. His title was Chief Engineer and his skills of managing men and logistics helped get the railroad built. Dodge was involved in Union Pacific from its very first survey to the company's reorganization 30 years later.

So those are the lead characters in our drama. We'll talk about the people that actually did the hard labor in a little bit.

The Construction

The question should be asked, who had the more difficult job, the Union Pacific or the Central Pacific? Many of us have heard of the Central Pacific's difficulties of getting through the Sierras. And we can see the years of extraordinary effort the Central Pacific put in to these miles.

Central Pacific had to build 15 tunnels that were 6,213 ft. in length: five tunnels on the west slope—the longest at the summit measuring 1,659 ft.—and nine on the east slope. It was important to get through this barrier quickly, not only because of the race

to meet the Union Pacific. Legislation allowed Central Pacific to collect more than half of the government bonds due when mountain roadbeds were complete. So in order to collect those funds, Construction Foreman James Harvey Strobridge sent teams to work on the tunnels in 1865, well in advance of the railhead. It would take two years to work through the granite mountains. (This early deployment of workers was something the Union Pacific did not do in Utah, ultimately costing the Union Pacific time and mileage.)

Eventually the Central Pacific experimented with nitroglycerin, but much of their work was done by hand and with the use of the weaker black powder. An equal cause for the slow progress through the Sierras was the record snowfall in the winters of 1866-67 and 1867-68. An engineer for the Central Pacific recorded 44 snowstorms in the winter of 1866-67. The worst started on February 18, 1867, accumulating six feet of snow in four days. Six days later another storm dropped four more feet of snow in five days. But work continued in and around the tunnels that were being bored through the Sierras. After all, work could continue in the dry tunnels, if they could just get to them.

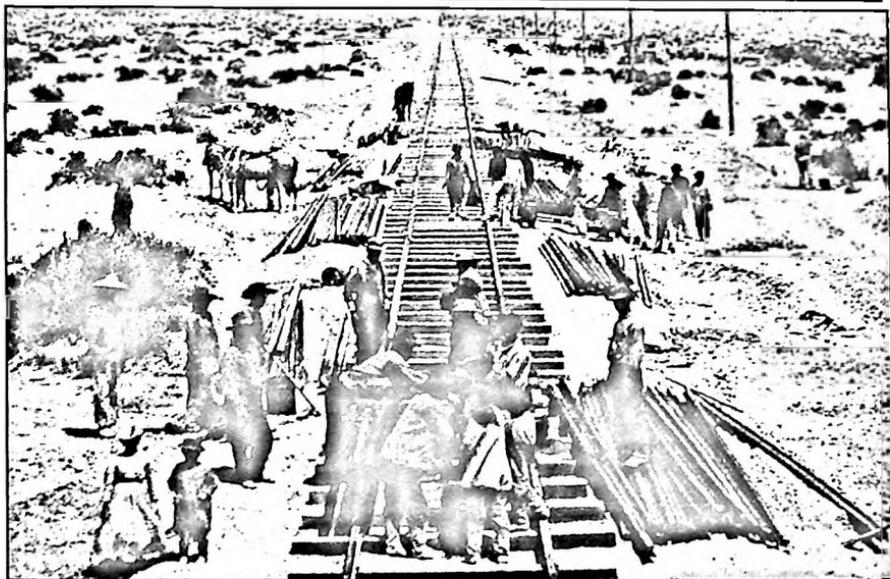
In March 1868 Central Pacific hoped to get in some early work to fill in a seven-mile gap that had held them back all winter from working down in the drier, warmer climate at the California-Nevada border. But spring snows reeked havoc. Five feet stood on the ground in mid-March. Then in three days, 13 feet piled up. As Charley Crocker reported on March 29, "There is no place between Cisco & Cold Stream Gap with less than fifteen feet

of snow laying on the track and line of uncompleted work" and "a dozen snow slides between Cisco and Emigrant Gap raised hell generally."¹

Tunnels were cut through the snow. E.B. Crocker reported that the snow tunnel at the Summit Tunnel was "at least three hundred feet long." And the tunnel system around Tunnels 7 and 8 was extensive. First, there was a snow tunnel connecting the two ends of Tunnel 8 that went for 200 ft. over the top along a steep bluff. There were windows in the sides of the tunnel and at one point a stairway was cut into the snow to get down to a blacksmith's shop. A series of tunnels were cut between Tunnel 7 and 8 connecting quarries and shops that worked to build a large stone culvert and the foundation of an immense retaining wall.

In addition to the heavy snowfall, Central Pacific was concerned about the effect of avalanches, not only on construction, but during the winter operation of the railroad. The answer was to design and build snow sheds. By 1868 2,500 men were dedicated solely to building snow sheds. When the line was completed, Central Pacific had built more than 37 miles of them, using 65 million linear feet of lumber, at a cost of \$2 million.

The difficulty of this ascent of the Sierras was contrasted with that of Union Pacific's route up the gentle slope of Sherman Hill in Wyoming. On April 16, 1868, after the Union Pacific officially crossed the continental divide, Thomas Durant sent a telegraph message to Leland Stanford which read: "We send you greeting from the highest summit our line crosses between the Atlantic and Pacific Oceans, eight thou-



Central Pacific workers laying track in Nevada

sand two hundred feet above the tide water. Have commenced laying the iron on the downgrade westward." Stanford replied, "We return your greeting with pleasure... We cheerfully yield you the palm of superior elevation. Seven thousand and forty-two feet has been quite sufficient to satisfy our highest ambition." Perhaps pointedly he added, "May your descent be easy and rapid."²

Central Pacific also had the disadvantage of having an immature economy at its home base. While the Union Pacific had railroad tracks behind it which brought forward both supplies and Civil War veteran labor, the Central Pacific had to bring almost everything by ship: iron rails, rolling stock and anything else metal around Cape Horn; and Chinese workers from across the Pacific.

This source of labor was not the Central Pacific's first choice. In fact,

when Leland Stanford ran for governor he called for the stoppage of immigration of the Chinese to California. But in 1865, Central Pacific had work for 4,000 men. They had only been able to rouse 800. In desperation, the company hired Chinese immigrants. "Celestials" were not thought to be rugged enough for the heavy work. In a very short time, the Chinese proved this belief to be wrong. They didn't drink alcohol and rather than drink the tainted water that whites drank, they boiled it for tea. They proved to be more reliable employees than most, they stayed healthier than most and were more productive than most. By 1868, 80% of the 12,000 people grading and laying track for the Central Pacific were Chinese.

The Central Pacific did have one advantage over the Union Pacific. While almost all of the freight the Union Pacific carried during con-



Chinese emigrants provided the vast majority of manpower for the Central Pacific

struction was outbound from Omaha, Central Pacific's freight also included income-producing material going east and west from the minefields of California and Nevada. This not only helped the bottom line, but it gave some assurance to both the Big Five and to investors that the whole endeavor would be sustainable.

The Union Pacific had its share of problems too. While they did have a much easier time of getting rails and other hardware to end of track, they had no simple access to wood for railroad ties. This meant chemically treating soft cottonwood to make it sturdy enough for use. Union Pacific also had to cut and haul timbers from the upper Midwest for use in bridges and trestles. Central Pacific, on the other hand, could cut their ties adjacent to the road itself in the Sierras. Ties were no small mat-

ter. Construction gangs used 2,500 ties a mile. The Union Pacific built 1069 miles, using a total of over 2.6 million ties. And the transportation cost at one point was \$4.50 a tie. This meant that ties alone could cost over \$5,000 - \$10,000 more per mile than the Central Pacific's.³

Another problem was water for man and machine. While adequate water was a problem for the Central Pacific once it reached Nevada, it was a constant problem for the Union Pacific. Although the road went along the Platte River, it was not the best source of water. As J.H. Beadle wrote in 1873: The Platte is, "a dirty and uninviting lagoon, only differing from a slough in having a current, from half a mile to two miles wide, and with barely water enough to fill an average canal; six inches of fluid running over another stream of six feet

or more of treacherous sand; too thin to walk on, too thick to drink, too shallow for navigation, too deep for safe fording, too yellow to wash in, too pale to paint with—the most disappointing and least useful stream in America.”²⁴

Wells had to be dug every 10-20 miles because the steam trains of the day needed to stop for water that often. You can still see this along I-80 especially in Nebraska. As my family and I drove alongside the railroad this summer, I noticed that the exit signs would always say how many more miles there would be to the next exit. It seemed like it was always “10 miles.”

A more pressing problem was the constant possibility for attack from the Native American tribes of the plains. From the Sand Creek Massacre on November 29, 1864 onward, the plains tribes were fighting back, throughout the area north of the Arkansas and on past the Platte. The survey crews—who worked in twos and threes, sometimes without military escort—were the most vulnerable. In the summer of 1867, Vice President Durant wrote Secretary of Defense Ulysses S. Grant,

May 23, 1867,
General, (Grant)

I have the honor to transmit herewith for your information the enclosed copies of dispatches from the line of this road, dated the 17th, 21st, and 23rd respectively from which you will observe that the Indians are interfering very seriously with our operations, both in the location of the line west of the Black Hills Range of the Rocky Mountains and in the construction of the road in the Upper end of the

Platte Valley and across the Black Hill Range.

Unless some relief can be offered by your Department immediately I beg leave to assure you that the entire work will be suspended as it will be impossible to keep a force of men and teams employed upon the work without adequate military protection.

Being aware to some extent of the scarcity of troops now in the field in that military department I will take the liberty of suggesting that if those that are now there could be (indecipherable) or in the vicinity of the line of the Pacific Railroad they would be able to afford ample protection to the work and at the same time be the means of keeping the hostile Indians considerably to the Northward of the Territory contiguous to the road.

I am General your observant servant,
TC Durant, Vice President, UPRRCO.

By one count, in 1868, not the most violent of years, 45 Union Pacific workers were killed by Native Americans.

According to Greenville Dodge's book on the building of the Pacific Railway, in one case, it might have helped the railroad to have “Indian trouble.” In the summer of 1866, before he went to work for the Union Pacific, Dodge was the commander of the troops sent to quell Indian uprisings along the Powder River. While scouting for the best route through the Wyoming hills, Dodge's party saw and then fought a group of Crow Indians. During this running battle, Dodge found himself standing on a gently sloping ridge that descended to the plains near Crow

Creek. A year later, as chief engineer of the Union Pacific he returned to the base of what he named Sherman Hill and established a town to support the construction of the railroad. He named the town "Cheyenne," after a different Indian tribe than the one that chased him.⁶

Another factor that complicated the Union Pacific's effort was the violence associated with end-of-track towns, the so-called Hell on Wheels. As the track was built west, the "camp followers" were there to tempt workers with liquor, gambling and women. The men worked hard and had nowhere to spend the \$2 to \$5 a day they labored for. The proximity of the towns to the end of track was always a concern for Dodge and the foremen of the Union Pacific crew, Jack Casement. In general, many of the simple structures themselves were moved, by flatcar, as the tracklayers moved forward.

These were rough towns.

Henry Morton Stanley, of Stanley and Livingstone fame, writing for the *St. Louis Missouri-Democrat* wrote, "Every gambler in the Union seems to have steered his course for North Platte and every known game under the sun is played here. The days of Pike's Peak and California are revived. Every house is a saloon, and every saloon is a gambling den. Revolvers are in great requisition. Beardless youths imitate to the life the peculiar swagger of the devil-may-care bull-whacker and black-leg, and here, for the first time, they try their hands at the 'Mexican monte,' 'high-low-jack,' 'strap,' 'rouge-et-noir,' 'three-card monte,' and that satanic game, 'chuck-a-luck,' and lose their all. On account of the immense freighting

done to Idaho, Montana, Utah, Dacotah, and Colorado, hundreds of bull-whackers walk about, and turn the one street into a perfect Babel. Old gamblers who reveled in the glorious days of 'flush times' in the gold districts, declare that this town outstrips all yet."⁷

As the Union Pacific approached Cheyenne, the end-of-track town moved there. The town had grown from 0 to 1500 people in three months; in another month it would be 4500. The *Cheyenne Leader* newspaper had just started to be published and ran a column entitled "Last Night Shootings." Shortly after the rails reached Cheyenne on November 11, an engine crawled into town pulling flatcars holding dismantled buildings and their contents. A guard on the train is said to have announced, "Gentlemen, here's Julesburg!"

In Laramie, the town's first attempt to establish order failed when the mayor and other town leaders resigned rather than face the desperados in town. Vigilantes took control of the situation, and cleaned up the town.

The winter encampment of the Union Pacific at Wasatch, Utah existed for just three months in the winter of 1868-1869. During that time *The Salt Lake Reporter's* owner J.H. Beadle remembered that "it established a graveyard with 43 occupants, of whom not one died of disease. Two were killed by an accident in the rock-cut; three got drunk and froze to death; three were hanged, and many killed in rows, or murdered; one 'girl' stifled herself with the fumes of charcoal, and another inhaled a sweet death in subtle chloroform."⁸

Perhaps Union Pacific's great-

est barrier was infighting on its board of directors. There were arguments and lawsuits, attempts at corporate coups and more lawsuits. At times future progress on the railroad was threatened because this bickering discouraged potential backers from investing in the Union Pacific. These conflicts also stopped both money and important decisions from getting to the construction teams.

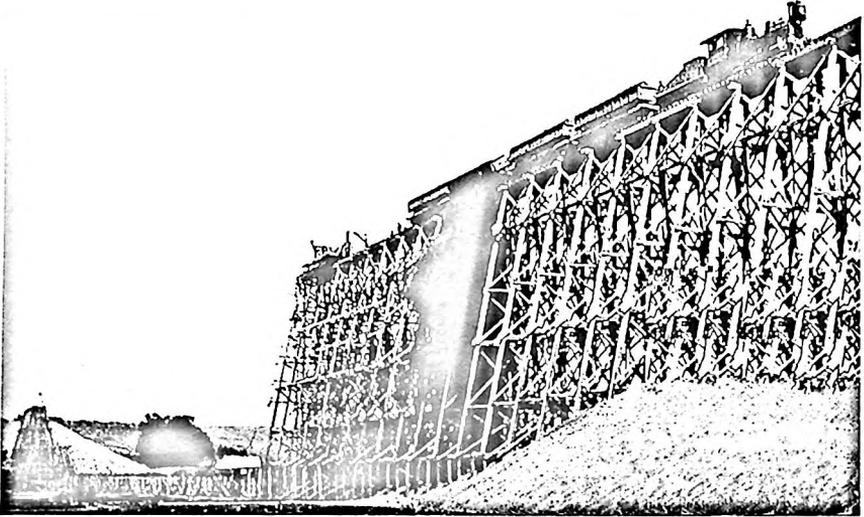
Officially vice president, Durant was very aggressive in trying to control not only actions in the boardroom but also in the field. Durant and his Consulting Engineer Silas Seymour made multiple parries and thrusts to change the engineering decisions made by Dodge and his surveyors and engineers in the field. Second-guessing the soundness of these decisions disrupted the military-like precision that would have allowed the railroad to build more quickly into Utah. By 1868, Durant pushed Seymour forward even more. Historians see most of the changes made by Seymour and Durant as being made for the financial well-being of Durant and his cronies rather than for the betterment of the railroad.

One of Durant's manipulations involved the purchase and sale of real estate. As an example, while Dodge and his engineers picked Cheyenne as the best place for a division point (with an eventual feeder line from Denver), Durant let it be known that he favored Laramie. Thus, he was able to inflate the value of the land he already owned in Laramie and then sell it for a handsome profit. Then he was able to buy land in Cheyenne for less money than just a few days before. When he reversed himself and let it be known that

Cheyenne would be the choice for the major facilities after all, he pocketed even more money.

Morale suffered with this expanding graft. As the months passed, everyone from the lowest station clerk to the corporate directors tried to skim money wherever they could. When Durant exerted more oversight by coming west to supervise the construction (and his own interests), things got even worse. Dodge wrote to Oliver Ames, that he would resign rather than let his crews work under "a man who has not an honest drop of Blood in his veins, who is connected with the Co. for the sole purpose of bleeding it and who the Co. say they cannot discharge for fear he will Black Mail it."⁹

The tension came to a head in July 1868 when Dodge was called to a meeting with Durant and Seymour in Rawlins. Dodge expected a showdown. So Dodge went to meet Ulysses S. Grant, along with Generals Sherman and Sheridan while they were on a trip before Grant was elected President. Dodge was able to describe his frustration with having his decisions superceded and his authority undercut. When Dodge walked into his meeting with Durant and Seymour he brought the generals along. Dodge described the progress of construction at length and threatened that if Durant changed the route, he would quit. Durant lashed back, but Dodge's comrades Grant, Sherman and Sheridan stood behind him. The Generals told Durant that Dodge must stay with the project. Recognizing that Grant would almost certainly be the next president of the United States, Durant backed down, at least for the time being. The Union



One of Union Pacific's trestles along the road, just outside of Omaha

Pacific continued to build west.

Because they feared that Union Pacific could even reach into Nevada, Collis Huntington pulled out all the stops to get Secretary of the Interior Browning to approve Central Pacific's preferred route to the north of the Great Salt Lake and to restrain the Union Pacific from getting nearer to Nevada. So, Huntington approached the Secretary's old friend and law partner, General Thomas Ewing, with the offer to pay him \$10,000 in cash and \$20,000 in stock to approve the Central Pacific's route around the north end of the lake and past Ogden toward Echo Canyon. Within three weeks, this plan was approved, with Browning promising to keep the decision secret for two months. Once the Union Pacific discovered the plan and pushed to have the decision rescinded, General Ewing bluntly asked for \$10,000, presumably for Browning

to reconsider and reshape his earlier decision. This lobbying by the UP fueled Huntington's concerns that his subterfuge would be all for naught. He wrote to Hopkins that he was willing to go even farther: "If \$100,000 will get the line located to the end of our line as per map in the Interior Department, I shall get it done."¹⁰

While it is difficult to arrive at a true 2007-dollar value to these bribes, there are a few gauges that show us how large these payments were. A common laborer on the railroad was paid between \$2 and \$5 a day or roughly \$600 to \$1000 a year (Most of the Chinese were paid substantially less: first \$30 and later \$35 a month.) A congressman was paid \$5000 a year. So a \$10,000 bribe was substantial.

Another way of seeing what these payoffs would be worth today is by using the Consumer Price Index as a

gauge. The \$10,000 bribe that Brown- ing most likely accepted would be equivalent to over \$1.4-million dollars today. A \$1,000 bribe would be worth \$140,000. This episode gives an indication of how much money was spent to influence government officials and in turn how much money was to be made by the victor.

The Railroad is Completed

As the tracklayers moved forward, the competition was getting more intense. The Union Pacific resolved to build 400 miles of track in 1868. Central Pacific spies relayed this information to Collis Huntington. Both companies saw their goal to be the rich coal seams in the Wasatch Range along the Utah-Wyoming border. Who would reach there first?

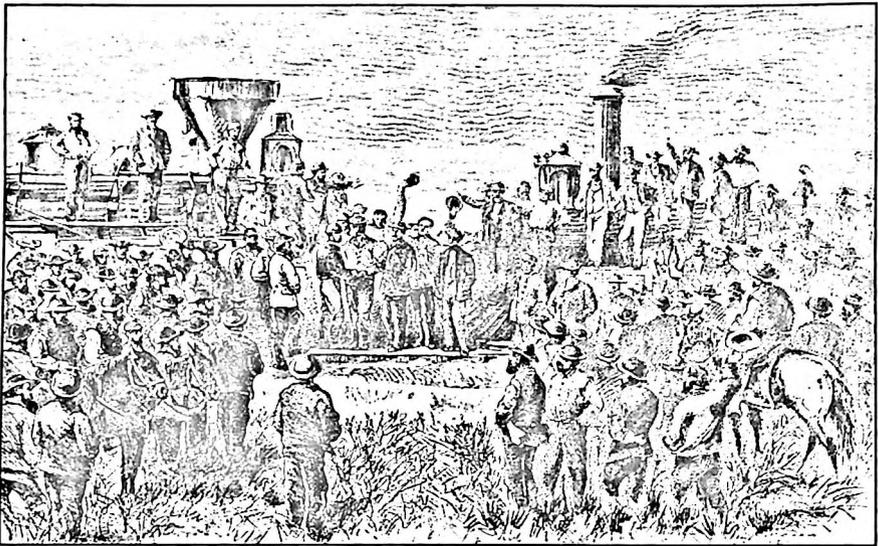
Huntington exhorted his partners to accelerate construction: "I would build the cheapest road that I could and have it accepted by the [Commissioners], so it moves on fast. Make it cheap. Run up and down on the maximum grade instead of making deep cut & fills, and when you can make time in the construction by using wood instead of stone for culverts etc., use wood, and if we should have now and then a piece of road washed out for the want of a culvert, we could put one in hereafter."

Mark Hopkins responded, "We won't expect to build a road of the character we have been building through the mountain & deep snow line. We expect to build the cheapest road we can make answer to purpose. Undulating in grades, wooden culverts where rock would delay, trestle wherever it will tend to more rapid progress. In short, to

build road as fast as possible of a character acceptable to the commissioners. And we know the commissioners will readily accept as poor a road as we can wish to offer for acceptance."¹¹

The Union Pacific's construction was even shoddier. Poor design, eroding embankments and fills, mismatched ties and lightweight rails were all obvious to everyone. Three bridges collapsed under their own weight without a train ever crossing them because of poor work on their footings. At one point Durant ordered track to be laid directly on snow and ice because the ground was too frozen to be worked. When Dodge returned to the railhead he witnessed a train on this track sliding sideways until the train rolled over into a ditch upside down. Even the beholden government inspectors felt that this work was unacceptable. By September 1868, Union Pacific's cash flow slowed down dangerously because the government commissioners required a \$3-million reserve fund to be created to guarantee that the work would be brought up to standard.

By 1869, the Union Pacific was nearly bankrupt. The financial drain of building the railroad was also straining the resources of the Central Pacific. In addition, throughout 1868 and early 1869 both companies were surveying and grading in opposite directions across the same ground; sometimes even crossing each other or claiming the same grade. Both companies knew that they were wasting money, but neither wanted to be the first one to blink. As the money was being paid out faster and faster from both sides of the country, both for this roadwork and for the numerous payoffs, the press



Harper's Weekly illustration of the celebration at Promontory

began to catch wind of the waste and illegal activity. With continued threats to his job, even Dodge started to leak the more dastardly actions of Durant to the press and to anyone else who would listen. The press began to concentrate on the ill-gotten gains of the directors of the company and their undo influence over Congress.

So, as David Bain writes in his wonderful book, *Empire Express*, "It had become clear to both Dodge and Huntington that they could either stand toe-to-toe and slam each other until one was dead or compromise before blood lust had the onlookers climbing over the ropes to get them both."¹² So Huntington and Dodge met at the house of Massachusetts Congressman Samuel Hooper, who held stock in both railroads and Credit Mobilier, and knocked out an agreement. The companies' crews would meet at Promontory Sum-

mit. Also, Central Pacific would buy the track already laid by the UP from there to just short of Ogden for the amount that it cost to build (the Central Pacific eventually paid \$2,852,870 or \$58,824 per mile).

So, the two companies were ready to join their empires; the date was set for May 8. But there were two more delays. First, on May 6, Durant and UP President John Duff were on a train heading for Promontory when a few hundred workers stopped their train by piling up railroad ties on the tracks. They demanded \$200,000 in back wages before they would let the train proceed. Durant telegraphed Oliver Ames in Boston to send the money, but by this time Union Pacific had little-to-no money. The workers did get some of their back pay and the UP train moved forward. Greenville Dodge and Oliver Ames were two who believed that it

was quite possible that Durant had set up this stoppage himself. After all, he had a financial interest in the subcontractor for that very crew. As Ames said, "Durant is so strange a man that I am prepared to believe any sort of rascality that may be charged against him."¹³

The second delay occurred just as the UP train reached Weber Canyon. Heavy rains damaged the Devil's Gate Bridge. The train was delayed and the final track laying was delayed two days.

Finally came the eventful day. May 10, 1869 was a beautiful day at Promontory. As the two engines—Central Pacific's "Jupiter" and Union Pacific's "119"—moved forward, 600 people stood waited with anticipation to see the final rail be laid to connect the East and West. Three of the Union Pacific's Irish carried one rail. Three of the Central Pacific's Chinese laid down the second rail. The rails were placed carefully around pre-drilled holes in the last laurel-wood tie. After a morning of debate between Stanford and Durant, it had been decided that Stanford would have the honor of driving the last spike.

There were actually four precious-metal spikes: There was a second golden spike presented by the *San Francisco News Letter* which weighed about 9.5 ounces and was valued at \$200. Another spike was presented: "ribbed in iron, clad in silver and crowned with gold. Arizona presents her offering to the enterprise that has banded a continent, dictated a pathway to commerce." The third spike was made of silver: "To the iron of the East and the gold of the West, Nevada adds her link of silver to span the continent and wed the oceans..." And finally, the Golden Spike. Slightly undersized at 5

1/2 in. x 1/2in., it was made of 14.03 troy ounces of 17.6-caret gold, alloyed with copper. The spike is engraved on its head with the words: "The LAST SPIKE." It includes the following words on one side: "May God continue the unity of our Country as this Railroad unites the two great Oceans of the world." (There was no equivalent statement upon the completion of the T-Rex.) Actually, this really wasn't the last spike. After the ceremonial spikes had been tapped into their pre-drilled holes, the last iron spikes were set in place.

In many ways this was the first large media event in America. There were a total of four photographers present, so we have a lot of photos of the day. In addition, the event was heard live in many cities in America. The last spike and the maul each had a telegraph wire attached to them. Thus, when the final spike was driven home, the event would be transmitted to every city in America, at the speed of light (well, of electricity). In any city equipped with fire alarm telegraphs, the alarm would sound; in those that didn't, the telegraph operator would hear it on his telegraph key. In San Francisco and New York the electrical circuit included cannons that would fire automatically over the Pacific and the Atlantic; a figurative celebration of emerging world power as well as for celebration of the feat itself.

As Central Pacific's Construction Chief Strobridge and Chief Engineer Samuel Montague, and Union Pacific's Durant, Duff, Dillon, Reed, Hoxie, Casement brothers and Seymour looked on, Stanford stepped forward swinging a silver-headed maul and...missed the spike...at first. (At

least that's the story told; although contemporary stories do not report this.) Then the spike was tapped in, and America celebrated.

The Liberty Bell rang along with hundreds of others. Two-hundred-twenty cannons in San Francisco and 100 cannons in Washington D.C. were fired. Chicago had a parade that was seven miles long. Cities that were in the Confederacy, such as Atlanta, New Orleans and Richmond, celebrated. All parts of the country could celebrate because people from all over America had worked on the railroad. The binding of the East and the West was supplemented by the additional bonding of the North and the South. America felt proud.

The Scandal and its Aftermath

America could be proud of the railroad, but they really couldn't feel the same about the graft that was part of its birth. The Union Pacific was short of money during the final weeks of construction because it had been bled dry by Credit Mobilier. Credit Mobilier officially was the construction company for the railroad, but it had also been created to make money for its stockholders, and indeed it did. In the 18 months leading up to the railroads joining at Promontory, dividends totaling 341% were paid to stockholders. So, if a person owned 100 shares of stock that were valued at \$100 a share, that person made \$34,100 in those 18 months. In 2007-dollars, 100 shares would have generated over \$500,000 of profit!

In addition, Durant, Dodge and other Union Pacific board members had multiple interests in the construction companies that were hired by Credit

Mobilier to do the work. Many of the grading companies, tie-cutting contractors and companies hired to provide food and logistics were partially owned by members in the inner circle of the Union Pacific. Peter Dey, the initial chief engineer of Union Pacific before he resigned in protest in 1866, estimated the cost of building through the Platte River basin at \$25,000 per mile; Credit Mobilier charged \$50,000 per mile and up. (As another point of reference: Charles Crocker had charged just over \$22,000 per mile for the first 18 miles out of Sacramento.)

And among those who benefited were many stockholding senators and congressmen who were ostensibly responsible for the oversight of the congressionally-chartered Union Pacific and the federal bond-supported Central Pacific. Oakes Ames was a congressman. Greenville Dodge was a congressman. Early stockholders included Massachusetts Congressman Samuel Hooper and John B. Alley, Indiana Representative James Wilson Grimes, Pennsylvania Representative Benjamin M. Boyer and New York Congressman James Brooks.

Then in 1867, a block of Credit Mobilier stock became available just as the company announced a new dividend and Union Pacific stock and bond bonuses for shareholders. This led to a feeding frenzy of interest by people in Washington. Those who were caught up in this included Schuyler Colfax of Indiana who was Speaker of the House and future Vice President. Senator Henry Wilson of Massachusetts would become vice president in 1873. Pennsylvania Congressmen William D. Kelley and G.W. Scofield, John a Bing-

ham of Ohio, John A. Logan of Illinois, Senator James W. Patterson of New Hampshire and Representative Henry Laurens Dawes of Massachusetts were included. And the biggest name was future president James Garfield of Ohio.

As a "convenience" the stock for these individuals was held in Ames' name. Colfax and Allison didn't even pay for the stock until a bonus was paid on their shares, effectively giving them a 70% discount. Garfield, Logan, Kelley and James Wilson had their stock paid for by Ames, but they still received their dividends and stock in Union Pacific.

Even what was clearly a political conflict of interest was tossed aside. On December 5, 1867, Wisconsin Representative Cadwalader Washburn—yet another Civil War General—introduced a bill to regulate (and reduce) the fares and other rates charged by the Union Pacific and Central Pacific. This bill was buried once it reached the committee overseeing the railroads, chaired by Oakes Ames.

Central Pacific also wasn't immune. "There is a very strong combination against us, wrote Collis Huntington to Mark Hopkins, "but I expect to beat them-but it will cost something." Congressman Donnelly on the Land and Railroad Committee was "short of cash," as Collis Huntington put it in a letter to Judge Crocker, "and I loaned him \$1000." For Senator James Nye of Nevada, Huntington help him get an interest in the new railroad city at Lake's Crossing, soon to be called Reno. For Congressman Samuel Axtell of California it was as a "job" of a confidential attorney. For Senator William Stewart of Nevada, it was the entire funding

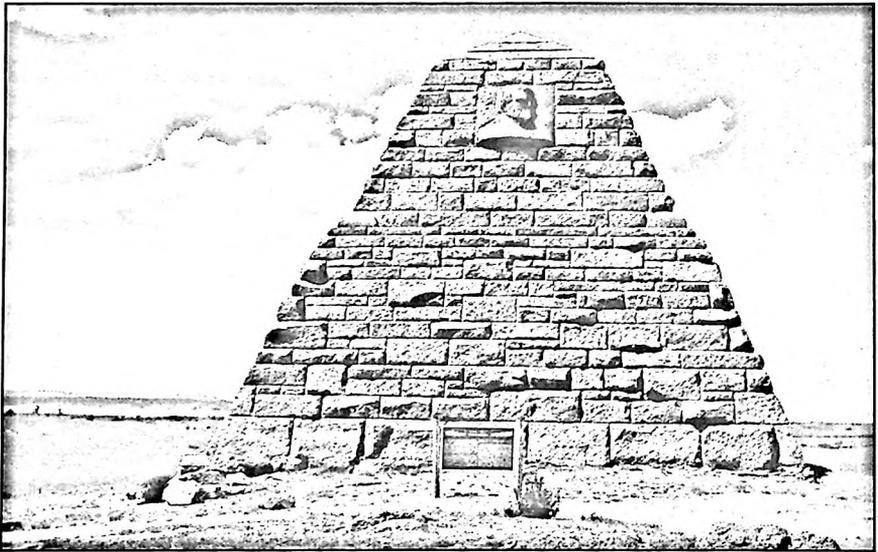
of his re-election contest. Huntington reported, "he said he hoped it would not cost over \$20,000, but it possibly would cost \$50,000."¹⁴ In early 1868 Aaron H. Cragin and James W. Patterson of New Hampshire were helped in their election campaigns with \$1000. This was the same Senator Patterson who had invested for free in Credit Moblier and Union Pacific the fall before.

Maine's James G. Blaine did turn down Union Pacific's offer. Later, he stated, "It never once occurred to me that Mr. Ames was attempting to bribe me."¹⁵

Ames for his part, also saw no wrong-doing. The general feeling was that Congressmen would show more interest in the needs of the Union Pacific and Central Pacific if they had some "personal interest" in the companies.

So a railroad was built, a railroad that benefited man and corrupted men. This railroad was another step toward unifying and reunifying a country, east and west, north and south. Four years after the end of the Civil War, America had a reason to call itself one country.

In the span of one generation, travel across America had been reduced from being a threat to life itself to a relatively common occurrence. One in 17 died on the immigrant trails in the 25 years before the railroad was built. That number was radically reduced with the completion of the railroad. It took Brigham Young four months to reach New Zion in 1847. With the completion of the railroad it would take only 7 days to go from New York to San Francisco. What must it have been like to take a train from Sacramento to Reno in 12 hours and then to go back, only



The memorial to Union Pacific's Ames brothers was built next to the railroad outside of Cheyenne. The tracks were relocated in 1902

21 years after the ill-fated trip most associated with the pass the train crossed: Donner Pass.

For the decade before the railroad was built, the fastest, most comfortable way to get to California was by stagecoach. Tickets from Fort Kearny to California could cost \$500 each. Within five days of the Golden Spike being driven home, regular train service started. Tickets from New York to San Francisco cost \$150 for first class, \$70 emigrant class. By the 1880s, nearly one million people rode the train west each year, three times as many as those who had made the trip during the 25 years of wagon migration, 1841-1866. The possibility of travel across the country between the Missouri and the Pacific and back again, made the opening up of America, the unifying of America be both a geographic and a psychological reality.

The Great American Road

The railroad was built along what is still the spine of America. The Transcontinental Railroad was just one of the names for this road. Much of the route is along the California Trail (1850) and the route of the Pony Express trail and first transcontinental telegraph route (1860-61).

In 1912, Indianapolis Motor Speedway founder Carl Fisher proposed creating the country's first coast-to-coast highway in time for the 1915 Panama-Pacific Exposition in San Francisco. In October 1913 the 3,389-mile-long Lincoln Highway was dedicated, the first "US" designated east-west highway. This highway followed along most of the route of the Pacific Railroad.

President Eisenhower promoted the Interstate Highway system in 1956.

I-80 became the first east-west interstate. Again, much of this road is within eyesight of the others. One of Eisenhower's justifications for building this huge public works project was to allow the rapid movement of military material from the east coast to the west coast. This fact has a nice parallel in that some of the first transcontinental passengers, also at the Golden Spike ceremony, were officers and soldiers of the 21st Infantry heading west to San Francisco.

Finally, one of the core paths of the Information Highway runs along this spine. Posts marking the path of one of the main fiber optic strands follow the same path where 140 years ago telegraph poles stood.

As you travel along I-80, much of the time you can see the railroad to your left or your right. Some of the original route is not used or has been straightened out. Most notable, the mainline bypassed Promontory in 1902 and the rails themselves were pulled up for scrap in 1942. Also, a memorial to the Ameses sits a half-mile off I-80 and over two miles off the mainline, a nearly forgotten reminder of the stunning achievement of the construction of the railroad.

Really all of these projects, including T-Rex, were built with the help of tax money to make it easier to get people, products and information around the country. In any large endeavor, there is some form of waste, some form of inequality of financial compensation. I think we all strive to see these factors minimized, but in any large endeavor, whether public or private, they are present. Is that any excuse? Does the end justify the means? I don't think so. But the value of hav-

ing the railroad built was so great, we should avoid concentrating on the corruption in the construction.

The railroad built towns where none existed before: Kearney, Cheyenne, Laramie, Reno and most towns in-between. The completion of the railroad represented the end of the way of life of the Plains Indians. The owners of the railroads became the powerful and influential men of the "Gilded Age." The laborers who built the railroad became the core labor force of the West. The railroad became a symbol of growing US economic and political might. A project that many thought might never be completed or would take at least a dozen years to finish was accomplished in less than half that time.

How forward-looking was America's transcontinental endeavor? The other continent opened to European settlement at roughly the same time, Australia, did not complete its first transcontinental route until 1917; it didn't have a consistent gauge on that route until 1970. Australia's North-South Transcontinental Railroad started operation in 2004. The changes that building a railroad had on the United States has just begun in parts of the interior of Australia.

As the Denver metro area rebuilds its highways and its urban railroad, as it negotiates to expand its transcontinental and intercontinental airplane departures, we can honor those who built the Pacific Railroad. Ahead of its time by a generation or two... or three, the Transcontinental Railroad was an achievement surpassed by few others. Its importance is hard to overestimate.

As the *Rocky Mountain News*

said, "There is one theme everywhere present. The one moral, the one remedy for every evil, social, political, financial and industrial, the one immediate vital need of the entire Republic, is the Pacific Railway."

Bibliography

1. Bain, David, *Empire Express, Building the First Transcontinental Railroad*. 1999: Viking, p. 460
2. Ibid. p 476
3. Ibid. p 594
4. Ibid. p 264
5. From a museum display at the Union Pacific Museum in Council Bluffs, Iowa.
6. There is some compelling evidence that this story may not have been the initial examination of this route. Even though it may have been fiction on the part of Dodge to say he was the discoverer of this hillside, the story itself is plausible short of this fact.
7. Ibid. p. 345 *My Early Travels and Adventures in America* (1895) Lincoln: University of Nebraska Press, 1982, p. 107.
8. Ibid. p. 606
9. Ibid. p. 485
10. Ibid. p. 483
11. Ibid. p 446, 447
12. Ibid. p. 632
13. Ambrose, Stephen E., *Nothing Like it in the World, The Men Who Built the Transcontinental Railroad 1863-1869*. New York: Simon and Schuster, 2000 p. 360
14. Bain, op.cit. p. 418
15. Ibid. p. 423

By far the best resource I used was David Bain's book, *Empire Express, Building the Transcontinental Railroad*, published by Viking in 1999. This is a tour-de-force work. In its foreword, Bain tells the story that every non-fiction author fears, just as you are trying to put years of research down on paper, a much more well-known author announces that he too is working on the same subject:

Stephen Ambrose's book, *Nothing Like it in the World*, published a year later in 2000, is a much quicker read...and a good one.

Another interesting book is a compilation of early writings about the road, *Riding the Transcontinental Rails: Overland Travel on the Pacific Railroad*, Philadelphia: Polyglot Press, 2005. The book was edited by Bruce C. Cooper, the great-great-grandson of the Superintendent of Track and Chief Assistant Engineer of the Central Pacific.

Another outcome of recent research deals with the Chinese workforce: William F Chew's *Nameless Builders of the Transcontinental, Victoria, B.C.*: Trafford Publishing, 2004. While the book has some narrative, its emphasis is on the statistics of the Chinese workforce.

PBS's *American Experience* produced one of its wonderful documentaries *Transcontinental Railroad* in 2003. Co-produced by David Bain, it is well worth the look on DVD.

There's a very nice book about the Lincoln Highway, the second half of which is about the part of the country we care about: Brian Butko: *Greetings from the Lincoln Highway; America's First Coast-to-Coast Road*, Mechanicsburg, PA: Stackpole Books, 2003.