

Theodore Judah: Engineering Visionary for the Transcontinental Railroad

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“Crazy [Theodore] Judah.” He had some strange ideas. He wanted to build a railroad across the continent. People knew it could not be done. The grades would be too steep. The mountains couldn’t be crossed. Not only did he want to build the railroad, he wanted to start the western portion in California – 3,000 miles from the materials needed. Everything, locomotives, track, spikes, rail cars, would have to be shipped around Cape Horn. Judah thought the railroad could cross the Sierra – the hardest part of the journey for emigrant wagon trains. San Francisco financiers laughed at him. People thought it couldn’t be done. “Crazy Judah.”

A transcontinental railroad had been thought about by many people as early as the early 1800’s but Theodore Judah, for whom Mt. Judah on Donner Summit is named, and Doc Strong, of Dutch Flat, got the ball rolling. Judah had come to California to work on one railroad but his dream was the transcontinental railroad.

It was Theodore Judah who laid out the transcontinental route, right through Donner Pass. He had explored six possible routes but settled on the one over Donner Pass. It was the least difficult but still it would take 15 tunnels, carved through the Sierra granite, before the Sierra was finally pierced. There were people who thought it was impossible. They thought railroads could not go up hill – that there would be no traction and Donner Pass is 7,000 feet high. ‘

To maintain the even grade Judah laid out the 15 tunnels on the route. Tunnel 6 was the most ambitious. It was an amazing feat of 19th century engineering. It has a curving slope and goes through 1659 feet of solid granite, one of the hardest natural materials.

Something that grand had never been done before in the United States.

The design of the route was maybe the easy part. It also took planning, wheeling, dealing, and cajoling; overcoming opposition; finding and wooing investors; breaking with conventional wisdom; multiple survey trips; argument; and convincing Congress. He fought active opposition from other railroad interests, the ice company, stage companies, freight haulers, and riverboat interests. In 1862 the Congress passed the Railroad Act authorizing the railroad. Judah did it all to get the transcontinental railroad started.

Theodore Judah never got to see the completion of his vision. He had a falling out with the Big 4 and headed to New York to find new investors. He died of Yellow Fever in 1863 just after his New York arrival, the year construction started.

In 1869 the railroad was completed using the route Judah had surveyed. Travelers could cross the country at the unheard of speed of 25 miles per hour. Where the wagon trains had taken 4-5 months and stagecoaches 25 days, railroad passengers could cross the whole country in ten days.

Judah’s route was brilliant; he took advantage of the Sierra geography. Typically railroads went through river valleys but Judah’s idea was unique. He took advantage of the ridges. When the

Sierras were uplifted millions of years ago the mountains hinged upwards from the California side so the rise was gentle from Sacramento to Donner Summit. Faults on the eastern side ruptured as the Sierra rose so that the eastern side is very steep – precipitous in spots. Look at the Sierra from the east and you see high sharp jagged Sierra peaks. From the west it's just rolling hills going off into the distance. The railroad route followed the easy incline of the Sierra from the west to the summit. Then there was the job of getting back down a thousand feet to Donner Lake. Judah took advantage of the gentle incline on the west and then wound the route around and through mountains to get down to Donner Lake. Along the way hilltops had to be removed, bridges built, and ravines filled. The hardest of the crossing part was the fifteen tunnels through solid Sierra granite that had to be blasted through. At the very top Tunnel 6 required extra effort. The tunnel had to be blasted through 1659 feet of granite. It took two years. Chinese workers worked six days a week, three shifts a day. They only made progress of inches a day.

Theodore Judah's name should have been mentioned with that of the "Big Four." Judah was the promoter of the entire plan to link the Pacific Ocean with that of the Atlantic with a railroad. He was the chief civil engineer, the genius and trail-blazer who chose and surveyed the eight hundred mile route up and over the Sierra and out into Nevada.

Sidebars:

- "It is impossible," he said; "no human power can force an engine up the grade which can be obtained. They cannot reach Auburn... Talk about a road over the summit; it is absurd." (The Central Pacific Railroad or '49 and '69 by Old Block (Alonzo Delano) 1868)
- 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.