

Empire Express (Transcontinental railroad) by David Bain (1999)

After Asa Whitney's family died, he spent the rest of his life campaigning for a railroad to create a safe passage to the west & onto China. Travelling around both capes was dangerous & many died while traveling across Panama by land (their railroad opened in 1855 & the canal opened 1914). US expanded rapidly in the last 50 yrs with the Louisiana Purchase of 1803 for \$15M from France; the Oregon territory (OR, WA, ID) came from Britain in 1846; & in 1847 spent \$15M to purchase CA, NV, UT, AZ, NM, CO & WY & \$100M for war with Mexico.

Every city wanted to train route to begin or go through their city and the politicians were fighting for them. Northern routes have more snow, but southern routes would cause perishable to rot faster. Many routes were considered and several scouting parties went out. But eventually it was decided to begin simultaneously in Omaha (el=1000') & Sacramento (el=25') and connect near Salt Lake City (el=4200'). The Union Pacific would head west over 1000 miles near the 42 parallel (between the 96th & 112th meridian) & the Central Pacific would head east over 600 miles to meet them.

Collis Huntington (merchant), Mark Hopkins (merchant), Leland Stanford (Governor), Charles Crocker (merchant/contractor) & Ed Crocker (judge) were the directors of the Central Pacific Railroad. 1861 they hired Ted Judah to survey/engineer a route over the Sierras & James Strobridge was their contractor. The CPRR was at a great disadvantage due to terrain & supplies (which had to be shipped from the east). Ground breaking began 8Jan1863 & started building to Auburn, then Donner Pass (el=7042') and beyond. **It took them 2.5 yrs to lay 40 miles of track (Sierra granite) while the UPRR would take 1 month (flat plains) to do the same.**

There was a good train system east of the Mississippi, but Lincoln saw the need to reach the Pacific so he signed the transcontinental railroad bill in 1862. This would grant to railroads a 400' ROW, 6400 acres per mile, \$16-48,000 in 1st bonds per mile, timber & stone from public lands, and more. This was amended in 1864 to double the land grants & bonds & make them 2nd mortgage (to allow the RR companies to have 1st mortgage since raising start-up capital was a challenge). There was a great hatred against Blacks, Indians & Chinese at this time. They constantly relocated the Indians and the train was their ultimate demise (disease & buffalo slaughtered). It was common to build temporary tracks around difficult areas.

The Union Pacific Railroad directors were: Thomas Durant (speculator), Oliver & Oakes Ames (shovel mfr), Cornelius Bushnell (financier) & others. They hired various contractors. Their civil engineer was General Dodge who found the 8242-foot pass through the Rockies near Laramie, WY (Gen. Sherman demanded it be named after him). Durant would run his own company in the ground for his personal gain & did. He owned stock in MMRR, started a rumor that drove the stock up & GCURR down, then sold his MMRR stock & bought GCURR stock. Then announced the opposite, sold his GCURR stock & bought back his MMRR stock for a \$5M profit.

The UPRR broke ground 2Dec1862 & headed west along the Platte River. Hardwood forests didn't last long when they needed 2500 ties per mile. He would treat softwood & used lighter rails than required. UPRR ties looked more like logs compared to the CPRR cut ties. The work was sub-standard, but UPRR would bribe inspectors to pass it. Durant even set a front

construction company to sponge more money. At that time the Indians didn't trust the white man and there were problems. The army had to protect the workers & supplies. The governor of CO & army generals made things worse.

George Francis Train traveled around the world in 80 days in 1870 (see Jules Verne novel). He & Durant would sell cotton on the black market during the civil war. He & other speculators bought land in Omaha before the RR was built. He told Durant about a new method of finance (called Credit Mobilier) that would limit liability & shield assets. Contract should have been competitively bid, but instead were inflated. Congress would say nothing because they were in on the take. **Durant would stop at nothing to make more money.**

Work was done by hand with picks, shovels & horse carts. Black powder was used when needed for blasting (1867 Alfred Nobel invented dynamite by mixing nitroglycerine & diatomaceous earth). CPRR heard nitroglycerine was 8x more powerful than black powder, but found it to be much more dangerous when it killed 50 people in Panama & 15 in San Francisco in 1866. Transporting it was banned so they had to make it onsite. Blasting powder was so scarce during the war CPRR had to get special permission from Lincoln to obtain the 500 kegs per day needed to blast through the Sierras. Some cuts were 150 feet deep x 300 feet long and some fills were 85 feet deep x 600 feet long. There were 12 tunnels with one 1659 feet long (they drove a shaft down the middle so they could work in 4 directions). **With black powder they were only progressing 1-foot per day at each.** At this rate it would take 15 months to finish this tunnel (nitro doubled that pace).

The CPRR used mostly Chinese laborers, the UPRR used Irish. At one time the CPRR had over 12,000 hard-working Chinese laborers (getting paid \$30/mo). Soon scalpers were getting control of timber, water & hay to sell the railroad at a heavy markup. Work in the Sierras had to be suspended up to 6 months out of the year due to snow, ice & avalanches. They had to build snow sheds over the tracks in these areas. Over 60 feet of snow would fall in the winter only to thaw & freeze down to 20' of ice & hard snow pack by spring.

The Civil war ended 12Apr65 & two days later Lincoln (great supporter of the RR) was assassinated. His body was sent from Washington, DC to Springfield, IL by train (Durant later bought that railroad coach). 116' per mile (2.2%) was the max allowed grade and at time it was used. 10 spikes per rail & 400 rails per mile. Both RR companies would send lobbyist to Washington & spies to the others camp. 1867 a railroad opened over the Alps between Germany & Italy. **It would take 3 weeks for mail to travel from SF to NY (via Panama) [or months by wagon train], but only days after by transcontinental was completed.**

After the 1st winter Durant realized he could haul freight barges (with rails& ties) over the frozen Missouri River (16" of ice). The high plains freezing temperatures would shut them down for the winters. UPRR would survey a new town every 20 miles with a new train depot (water, telegraph & supplies). Most lots went for about \$100 in town or about \$2/acre out of town. Saloons & brothels sprang up along the workers and would move west with the rail road creating ghost towns behind. They even built some empty houses to give the inspectors the sense of permanency. He threw a big party for diplomats when they reached the 100th meridian (in the middle of NE).

By 1867 CPRR was using steam powered snow plows, but were apprehensive to use the compressed-air-driven drills. By 1869 steam shovels were used. They would have to import water & ties across the NV desert since there was neither. The CPRR finally reached the Sierra summit (+/- 80 miles from Sacramento) by the end of 1867. June '68 they finally connected the work they did in NV to the Sierras to give them 167 miles of track. They bought out the WPRR so they could extend then line to the SF bay (via Stockton) and the SPRR to give them a southern route. They also bought the San Francisco & Oakland RR that gave them ferry slips & steamers.

1868 track was being laid down at 4 miles per day and supplies were in shortage. Ordering from different mills only provided different lengths & connections. NV was not offering any trees, coal, stone, food or water to use.

By 1867 the UPRR also had 12,000 laborers (earning \$60/mo). It cost ten-cents/mile for civilians to ride the train. There were always factions & injunctions in the UPRR, mostly involving Durant. UPRR also found desert between the continental divide & Salt Lake. 500 miles of track were laid to Cheyenne, WY by the end of 1867. April 1868, they reached the continental divide (550 miles from Omaha). They had to build (timber) the world's highest RR bridge in the world at 135' high x 650' long. Laramie had 500 shacks built 10 days after lots were sold. The Mormons were contracted to do the grading work near Salt Lake (& happy for the work after 2 yrs of drought & locust).

Durant tried to oust Dodge to give himself more control, but Dodge brought Gen. Grant (next US Pres) to the showdown & Durant had to back down. The desert between the Rockies & Salt Lake was so dry (8" of dust) choked to death. The tunnel near Echo Canyon was 772' long. 1868 Durant was arrested for intent to defraud, but the judge was his friend & was exonerated. A special inspection team went out and found the UPRR unsafe & withheld money as a security fund (CPRR was OK).

The directors were becoming wealthy, but UPRR was on the edge of bankruptcy. UPRR moved from NYC to Boston to avoid legal matters in such haste they left behind valuable papers that Durant found & kept to himself. The UPRR was always late in paying the workers. It got so bad they workers took some Durant hostage when he was in route to the big ceremony.

By the end of 1868 UPRR had about 1000 miles of track & CPRR had half that. The same time UPRR had 124 engines, 2300 freight cars, 30 passenger cars & 81 cabooses; while CPRR had 140 locomotives, 6 snowplows, 1400 freight cars & 13 passenger cars. 4Mar1869 Grant became US pres & froze the RR bonds. 26Oct68 UPRR laid 7.5 miles of track in one day & 27Apr69 CPRR came back to lay 10 miles. **The two trains came together at Promontory, UT on 10May1869 for the golden spike** (which was quickly removed). CPRR reached there a week earlier, but some of the UPRR bridges were failing under their own weight before they even arrived. The 18-ounce spike was given to Stanford by David Hewes of SF. It is on display at Stanford University & a duplicate is at the RR museum in Sacramento. The telegraph wires were connected and the whole nation celebrated.

1872-3 there was enough public outcry that congress made a special committee to investigate RR misconducts. But it was soon swept under the rug as congress voted to give themselves a 50% raise & doubled the president's salary to \$50,000.

After completion of the RR, Dodge went to work for the TPRR and made millions doing the same. Stanford had the governor's mansion in Sacramento, another on Nob Hill in San Francisco (along with Crocker & Hopkins), and then bought 9000-acres in Palo Alto (& another mansion) that became a university after their son's death in 1884. Huntington bought a resort on Raquette Lake, NY (next to Morgan & Vanderbilt) his estate built a library/art gallery in San Marino, CA.

Quotes: "Fools laughing at what they cannot see, and wise men foreseeing what fools cannot comprehend." (Asa Whitney)

"With malice toward none, with charity to all...let us strive on to finish the work we are in..." (Abe Lincoln – 1865)

"The only good Indian is a dead Indian." (Gen. Philip Sheridan)

Books: Innocents Abroad; Roughing it & The Gilded Age (Mark Twain)

Misc:

Panic of 1837 (7 yr recession), 1857 & 1873

Erie Canal opened 1852.

13M bison & 500k Indians in 1840 to 500 bison & 250k Indians in 1890.