

Trans-Siberian Railroad VIDEO NOTES -- Google "The Trans-Siberian Railway—Documentary" (44:16 minutes)

1. Russia's engineering feats have dazzled the world. One was as much a miracle as a tribute to human toil: The Trans-Siberian Railroad. It was the most _____, difficult, and longest railroad ever constructed; running _____ miles across Asia to the Pacific. And every mile was built by hand.
2. The Trans-Siberian Railway makes 45 stops, over an _____ day trip, that runs 6,183 miles over, across, and through a continent known for frigid temperatures and impassable terrain.
3. It sometimes took years for messages and edicts and plans to reach the farthest edges of their empire. Without lines of communications; without effective internal telegraph system; without a _____ system, Russia was at a serious disadvantage.
4. Russia needed a railroad to command and _____ its vast Asian territories.
5. It's one thing to project a railroad of 500 miles. It's quite another thing to project a railroad that would use unimaginable quantities of timber, require hundreds of bridges, thousands of miles of rail, millions of tons of iron for setting spikes and bolts. Even running a few trains daily on a line 6,000 miles long is going to require _____ of cars, hundreds of locomotives, and training a workforce in a country that didn't have a great amount of mechanical talent.
6. Trains and train centers were once the primary target of German aircraft trying to cut supply lines during World War II. But the Trans-Siberian was spared because it was out of range. In war, _____ protected the train. Yet in building it, distance nearly destroyed it. Its remote location and sheer length drove the cost so high, the project was almost derailed before it began.
7. The Russians wanted to build the best. But as they began to price out this huge, long thing that was maybe 3 times longer than any railroad built before, it quickly became apparent that they'd bankrupt the treasury and only get _____.
8. The work had to be done by hand. There was no money for dynamite or _____.
9. The bulk of the workforce was Russian convicts. They were barefoot in the summer, and dressed in thick layers for the spring and fall. Beside the convicts were free men from China, Persia, and Turkey. The pay was _____ a day.
10. The convicts were shackled to _____ to prevent their escape.
11. Even with cost-cuts, the project needed more money. News about the difficulties and delays were kept a national secret. The Trans-Siberian Railroad was accompanied by a _____ campaign at the World's Fairs especially intended for French and other investors to see that the country was coming _____. Even though Russia told lies about the way people would travel and how it was constructed, the French loaned lots of money.

12. In peace, it is a work-horse. The Trans-Siberian carries the industrial life-blood of coal, oil, and _____ from Asia to the West.
13. The sooner the railroad was finished, the sooner it could earn money; money needed to upgrade the tracks and rail-bed that, by necessity had to be _____ to cover 6,000 miles.
14. The shipwreck in the Arctic lost thousands of miles of tracks and tons of spikes. The accident set construction back. Six months after the project began, it was already _____ years behind schedule. The Arctic was dropped as a supply route.
15. Vast distances and harsh seas had stalled the supply lines. It also brought out the worst of engineering by economy. Typically, 3,000 rail ties were used per mile. But the Trans-Siberian used _____ to save money. Siberia is so cold that the rails would pop apart and crumble.
16. October of 1894, Alexander III, the czar who started the Trans-Siberian project, died in a _____ derailment.
17. Seven years after the project began, the largest city in Siberia (Irkustk) was linked to the capital. The distance of 2,800 miles was longer than the American Trans-Continental Railroad, but still less than _____ across Siberia.
18. The Russians were building a railroad, by hand, at the same time that the Wright Brothers were dreaming of powered flight; at the very same time the New York Central Railroad exceeded 100 miles an hour. The Russians were trying to build a railroad that would operate at 10 to 15 miles per hour and take several _____ to cross the continent.
19. The real heroes were the men who laid the tracks. They overcame a forest as large as the continental _____. The forest was so dense, sunlight had never reached the ground.
20. By 1900, the railroad was finished except for a final length less than _____ miles long. The last stretch was in Central Asia by Lake Baikal.
21. Cliffs and mountains rim the shore like the teeth of a shark. The landscape was a construction crew's nightmare. They had to blast through a mountain chain at a cost of 15 million dollars, 6 times the cost of an average mile. So the government railroad committee decided to avoid the route through the mountains and build a train _____ to cross the waters of Lake Baikal.
22. The Lake Baikal experiment was a failure. The railroad committee had no alternative but to build a 162 mile track through the mountains and cliffs above the lake. It required no less than _____ tunnels through sheer granite mountains.
23. The most difficult construction on the Trans-Siberian, and arguably in all of railroading, had to rely on brute strength, determination, and _____. That's all the crews had to build 38 tunnels through a mountain chain that rises 1,500 feet above a lake the size of an ocean in central Siberia.

24. By 1904 the Trans-Siberian was almost finished (14 years after it began). Czar Nicholas made a speech boasting that the railroad had bridled Asia in steam and iron at last. He also flaunted the railroad as a tool of empire, bragging that Russia entered a new era of military prowess in the _____.
25. To Russia and the czar's horror, the Trans-Siberian was not just vulnerable up and down its 6,000 miles, it was also a _____. Its light rails broke down, unable to bear the weight of the boxcars overloaded with weapons and soldiers.
26. They built the railroad in single track to save money with the result that, during the Russian-Japanese War, they couldn't send troops back and forth without the lines being constantly clogged. Within _____ years of the initial construction, they began reconstructing the entire railroad.
27. The railroad and the war with Japan and World War 1 depleted the national treasury. There was no money to fund social programs for the poor, making bad times in Russia even worse. The troubles at the front during World War 1 and its problems at home led an insurmountable crisis, and ultimately the Russian _____.
28. In the 1950's the industrial might of the Soviet Union turned the railroad into a state-of-the-art masterpiece. By the end of the decade the _____ upgraded the railroad with heavy steel rails, new cross-ties, new bridges, and a second track.
29. The railway the czar (Alexander III) desperately wanted, but could barely _____ had fulfilled its promise a century after the first crews struggled to build it.

Questions

Why was the Trans-Siberian Railroad built in the southern part of Russia?

What problems did Russia face with the construction of the Trans-Siberian Railroad?

How is the Trans-Siberian Railroad a perfect example of our geographic standard regarding "movement" (people, goods, and ideas)?