

TRANSFORMATIVE HISTORICAL INFRASTRUCTURES: THE CASE OF THE TRANSCONTINENTAL RAILROAD

Overview

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- Rail Development in the United States
- Transcontinental Railroad
- Economic Impact
- Social Impact
- Environmental Impact
- Lessons Learned

Rail Instead of Water

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- **Before rail, American transport was mostly by water.**
- **1815 The first railroad charter was granted in the United States.**
- **1837 Over 200 railroad companies existed in the United States.**
- **1853 The first major U.S. railroad linked Baltimore to the Ohio River.**



Figure 1: American Railroad Network by 1850 (From Dale)

Rail to Connect the Nation

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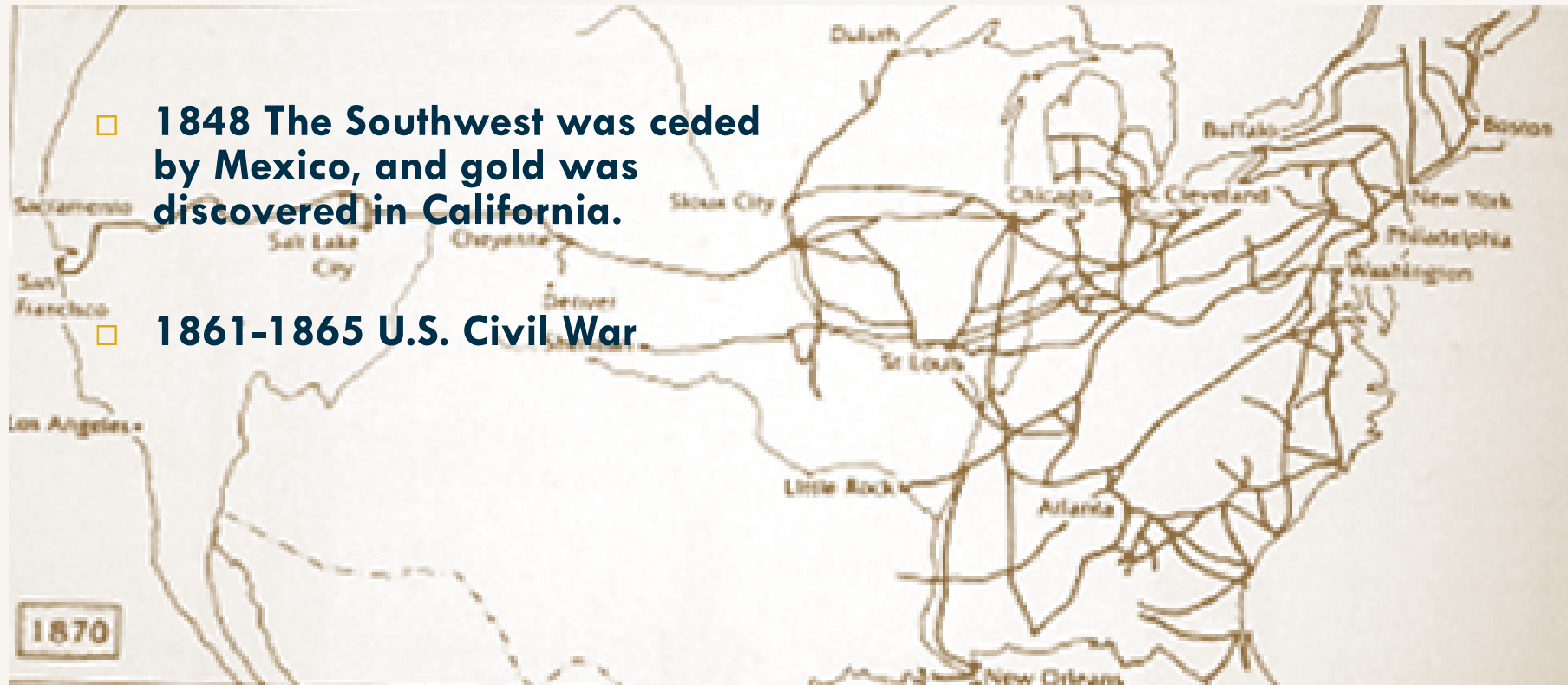


Figure 2: American Railroad Network by 1870 (From Dale)

Rail for Rapid Expansion

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Figure 3: American Railroad Network by 1890 (From Dale)

The Transcontinental Railroad

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- **Constructed 1863-1869**
- **Connected the Union Pacific and Central Pacific Railroads.**
- **Provided continuous, fixed route to the west coast.**
- **Was the largest railroad in the world at the time.**
 - ▣ More than 900 miles of track
 - ▣ 200-foot right of ways
 - ▣ Standard gauge: 4' and 8-1/2"



Figure 4: Artist's rendering of the Golden Spike ceremony at Promontory Point, Utah

Railroad Financing & The Gilded Age

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- **Railroad proliferation was possible due to laissez-faire economic policies**

- **Transcontinental Railroads received direct Federal Subsidies through**
 - ▣ Land Grants, and
 - ▣ Collateral for Bonds.

- **Because of their size, the transcontinentals were particularly vulnerable to corruption, for instance**
 - ▣ the Crédit Mobilier Scandal.



Figure 5: Thomas “Doc” Durant at the end of the Union Pacific Line (From Union Pacific Website)

Economic Legacy

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- **The rise of investment banking was associated with railroad expansion and consolidation.**

- **Cycles of “oligopoly agreements” dictated how railroads could maximize their profits.**

- **The Interstate Commerce Commission was formed in 1887 to re-regulate the industry.**
 - ▣ Shipping rates had to be "reasonable and just."
 - ▣ Rates had to be published.
 - ▣ Secret rebates were made illegal.
 - ▣ Price discrimination was made illegal.

Opening the West to Science

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- **Railroads allowed the rapid and safe movement of**
 - Specimens
 - Equipment
 - Personnel

- **The publication of scientific articles nearly tripled from the 1860s to the 1870s.**



Figure 6: Elasmosaurus muzzle, discovered by Dr. Theophilus Turner in Kansas and shipped by rail in 1868 (From Everhart)

Changes to the Social Landscape

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- **Migration and Displacement**
 - ▣ Chinese laborers immigrated to work on the railroad, and some settled on the West Coast.
 - ▣ White and Black Americans settled the western plains, forming railroad towns.
 - ▣ Native Americans were forcibly relocated to reservations.

- **Class Segregation**
 - ▣ It was possible to travel “first-class” by rail, unlike on canal packets or riverboats.
 - ▣ The rural-urban economic gap developed and widened.

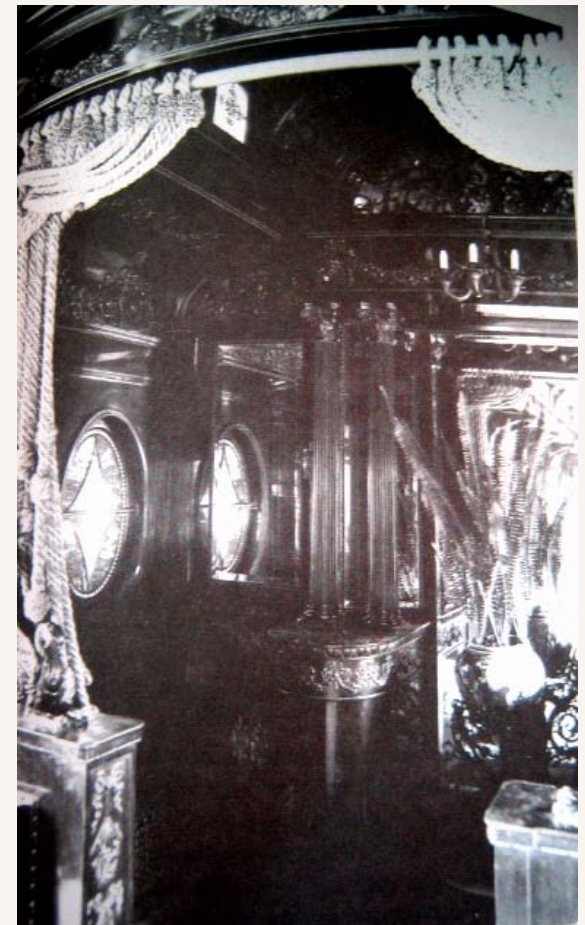


Figure 7: Late-nineteenth-century Pullman railcar (from Gordon)

Environmental Legacy of Westward Expansion

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- **Deforestation**
 - By 1860 California had already lost an estimated 1/3 of its trees

- **Decline of the buffalo**

- **Rise of the dust**
 - Over-planting and overgrazing led to an increase in dusty conditions in the West.

- **Noise pollution**



Figure 6 Above: The dusty American West (University of Colorado at Boulder)

Figure 7 Below: Train passengers shooting buffalo for sport (Northern Plains Buffalo Products)



Lessons Learned

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- **Major infrastructure development can shape**
 - ▣ Financial Markets
 - ▣ Social Structure and Stratification
 - ▣ Natural Landscapes and the Fates of Species

- **To enable positive growth, disable corruption, and prevent harm, policy or other mechanisms should ensure**
 - ▣ Financial Transparency
 - ▣ Social Inclusion
 - ▣ Environmental Stewardship

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