

Industrialization

Module 3

Lesson 1

Natural Resources Fuel Industrialization

- Machines begin to replace workers
- By 1920, U.S. is leading industrial power

Black Gold

- Pre-European arrival, Native Americans make fuel, medicine from oil
- 1859, **Edwin L. Drake** successfully uses steam engine to drill for oil
- Petroleum-refining industry first makes kerosene, then gasoline



Bessemer Steel Process

- Abundant deposits of coal, iron spur industry
- **Bessemer process** puts air into iron to remove carbon to make steel
- Later open-hearth process makes steel from scrap or raw materials

New Uses for Steel

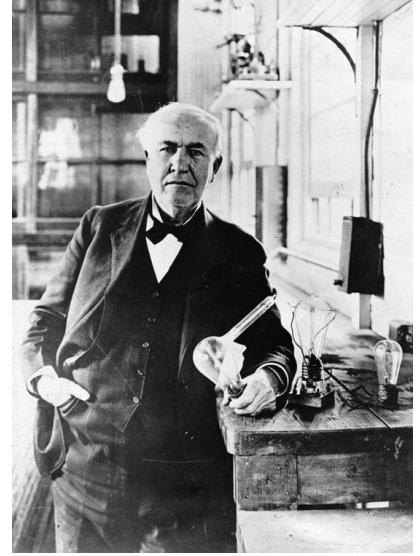
- Steel used in railroads, farm machines
- Changes construction: Brooklyn Bridge; steel-framed skyscrapers



The Expansion of Industry

The Power of Electricity

- 1876, **Thomas Alva Edison** establishes first research laboratory
 - 1880, patents incandescent light bulb
 - creates system for electrical production, distribution
- Electricity changes business; by 1890, runs numerous machines and mass transit
- Becomes available in homes; encourages invention of appliances
- Allows manufacturers to locate plants anywhere; industry grows



Inventions Change Lifestyles

- **Christopher Sholes** invents typewriter in 1867
- 1876, **Alexander Graham Bell**, Thomas Watson introduce telephone
- Office work changes; by 1910, women are 40% of clerical workers
- Inventions impact factory work, lead to industrialization
 - clothing factories hire many women
- Industrialization makes jobs easier; improves standard of living
 - by 1890, average workweek 10 hours shorter
 - as consumers, workers regain power in market
 - higher standard of living attracts immigrants
- Industrialization creates wealth for business owners
- Some laborers think mechanization reduces value of human worker



Lesson 2

The Age of the Railroads

A National Network

- 1859, railroads extend west of Missouri River
- 1869, first **transcontinental railroad** completed, spans the nation
- Cornelius Vanderbilt** begins to link smaller railroad networks

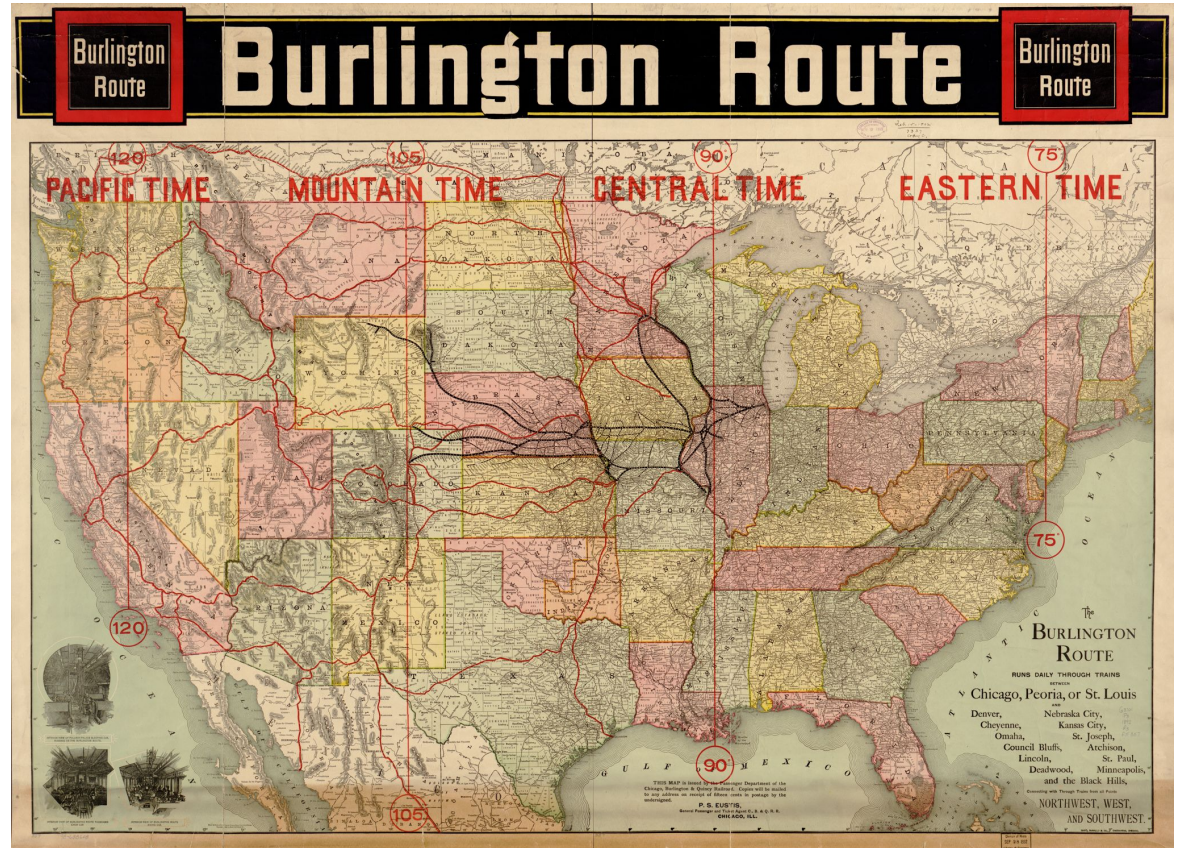
Romance and Reality

- Railroads offer land, adventure, fresh start to many
- People of diverse backgrounds build railroad under harsh conditions:
 - Central Pacific hires Chinese immigrants
 - Union Pacific, Irish immigrants, Civil War vets
- Accidents, disease disable and kill thousands every year



Railroad Time

- 1869, C. F. Dowd proposes dividing earth's surface into 24 time zones
- 1883, U.S. railroads, towns adopt time zones
- 1884, international conference sets world zones, uses railroad time
 - Congress adopts in 1918



Opportunities and Opportunists

Supply and Demand

- Railroads require great supply of materials, parts
- Iron, coal, steel, lumber industries grow to meet demand

New Towns and Markets

- Railroads link isolated towns, promote trade, interdependence
- Nationwide network of suppliers, markets develops
- Towns specialize, sell large quantities of their product nationally
- New towns grow along railroad lines

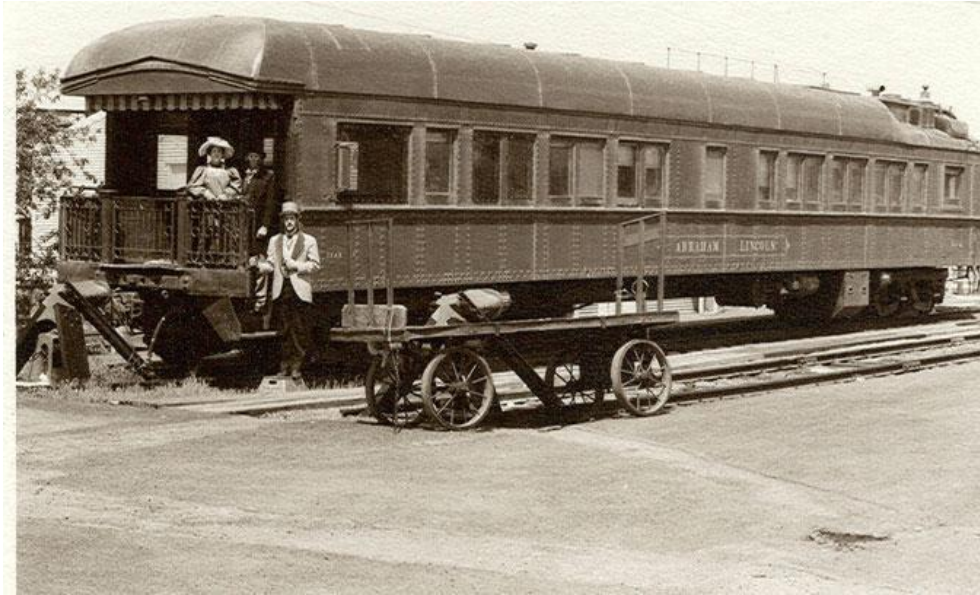


Pullman

- 1880, **George M. Pullman** builds railcar factory on Illinois prairie
- Pullman provides for workers: housing, doctors, shops, sports field
- Company tightly controls residents to ensure stable work force

Crédit Mobilier

- Wish for control, profit leads some railroad magnates to corruption
- Union Pacific stockholders form construction company, **Crédit Mobilier**
 - overpay for laying track, pocket profits
- Republican politicians implicated; reputation of party tarnished



The Grange and the Railroads

Railroad Abuses

- Farmers angry over perceived railroad corruption
 - railroads sell government lands to businesses, not settlers
 - fix prices, keep farmers in debt
 - charge different customers different rates

Granger Laws

- Grangers sponsor state, local political candidates
- Press for laws to protect farmers' interests
- Munn v. Illinois**—Supreme Court upholds states' right to regulate RR
- Sets principle that federal government can regulate private industry

Interstate Commerce Act

- 1886, Supreme Court: states cannot set rates on interstate commerce
- Public outrage leads to **Interstate Commerce Act** of 1887
 - federal government can supervise railroads
 - establishes Interstate Commerce Commission (ICC)
- Legal battle with railroads; difficult for ICC to take action

Panic and Consolidation

- Abuses, mismanagement, competition almost bankrupt many railroads
- Railroad problems contribute to panic of 1893, depression
- By mid-1894, 25% of railroads taken over by financial companies

Lesson 3

Big Business

Belief in Free Markets

- U.S. economy based on free enterprise, driven by competition and consumer demand
- **Laissez-faire** capitalism, government takes a hands off approach with business
- Business leaders in favor of protective tariffs, though

Social Darwinism

- **Social Darwinism**, or social evolution, based on Darwin's theory
- Economists use Social Darwinism to justify doctrine of laissez faire
- Idea of survival, success of the most capable appeals to wealthy
- Notion of individual responsibility in line with Protestant ethic
- See riches as sign of God's favor; poor must be lazy, inferior



Maximizing Profits

- Carnegie searches for ways to make better products more cheaply
- Hires talented staff; offers company stock; promotes competition
- Uses **vertical integration**—buys out suppliers to control materials
- Through **horizontal integration** merges with competing companies
- Carnegie controls almost entire steel industry
- Swift builds refrigerated boxcars, changes meat industry

Eliminating the Competition

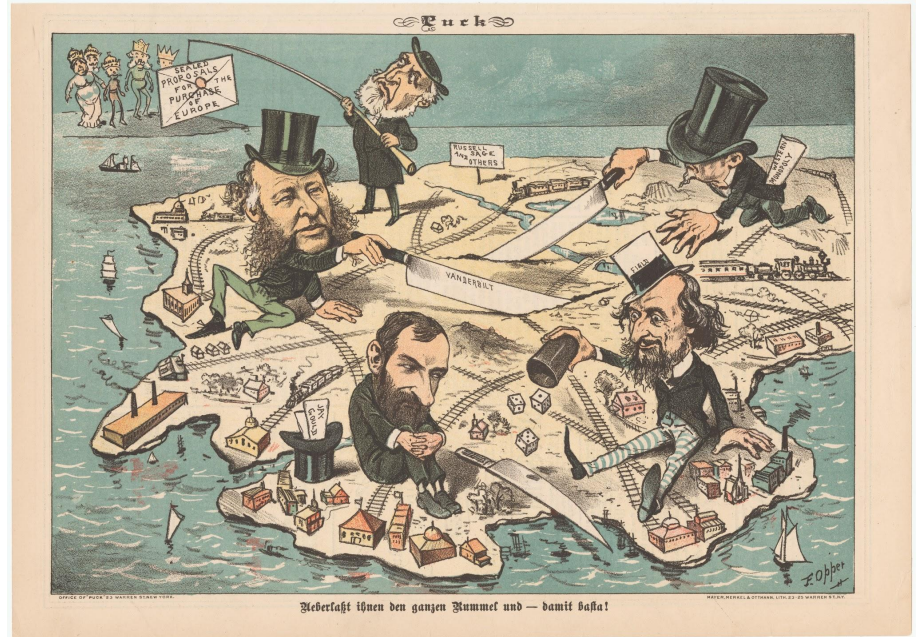
- J.P. Morgan** creates holding companies to buy up competitors and merge businesses
- John D. Rockefeller** Standard Oil Company, forms trust to run separate companies as if one
- Business owners in same industry pool businesses to fix prices and eliminate competition

Fewer Choices

- Pools, trusts, and holding companies help create monopolies to control production, wages, prices
- Monopolies hurt consumers and workers

A Mixed Legacy

- Many Americans admired “captains of industry”
 - made economy more productive
 - supported philanthropy
- Critics call industrialists robber barons
 - taking advantage of consumers, workers
 - unfairly squeezing out competitors

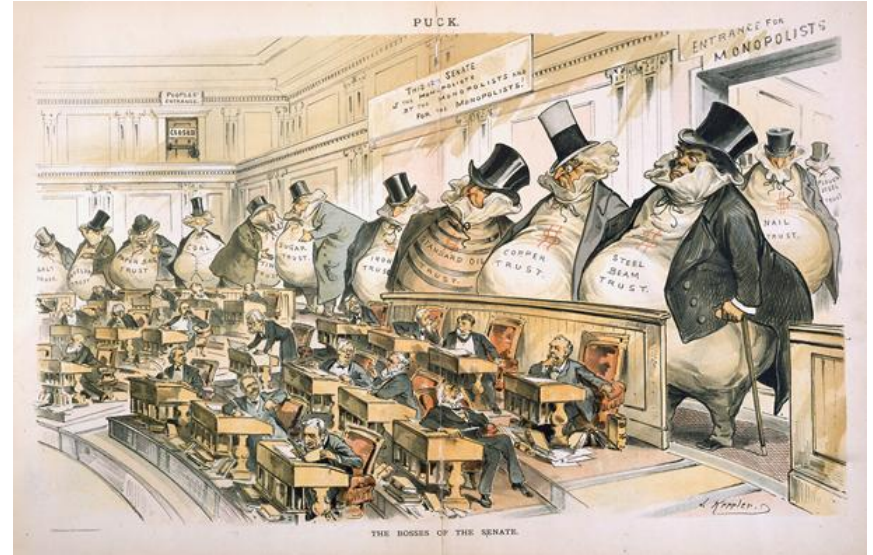


Government Regulation

- Government thinks expanding corporations stifle free competition
- **Sherman Antitrust Act:** trust illegal if interferes with free trade
- Prosecuting companies difficult; government stops enforcing act

Business Boom Bypasses the South

- South recovering from Civil War, hindered by lack of capital
- North owns 90% of stock in RR, most profitable Southern businesses
- Business problems: high transport cost, tariffs, few skilled workers



Lesson 4

The Rise of the Labor Movement

Long Hours and Danger

- Most workers have 12 hour days, 6 day workweeks
 - perform repetitive, mind-dulling tasks
 - no vacation, sick leave, injury compensation
- To survive, families need all member to work, including children
- Sweatshops, tenement workshops often only jobs for women, children
 - require few skills; pay lowest wages



Early Labor Organizing

- National Labor Union—first large-scale national organization
- 1868, NLU gets Congress to give 8-hour day to civil servants
- Local chapters reject blacks; Colored National Labor Union forms
- NLU focus on linking existing local unions
- Noble Order of the Knights of Labor open to women, blacks, unskilled
- Knights support 8-hour day, equal pay, arbitration

The Power of Unions

- **Collective bargaining** becomes an important tool for negotiating higher wages, better conditions, shorter hours
- Closed shops give the unions more power
- Increased union membership leads to increased political power

Craft Unionism

- Craft unions include skilled workers from one or more trades
- **Samuel Gompers** helps found American **Federation of Labor (AFL)**
- AFL strikes successfully, wins higher pay, shorter work week

Industrial Unionism

- Industrial unions include skilled, unskilled workers in an industry
- **Eugene V. Debs** forms American Railway Union; uses strikes



Socialism and the IWW

- Some labor activists turn to socialism:
 - government control of business, property
 - equal distribution of wealth
- Industrial Workers of the World (IWW)**, or Wobblies, forms 1905
- Organized by radical unionists, socialists; include African Americans
- Industrial unions give unskilled workers dignity, solidarity

Other Labor Activities in the West

- Japanese, Mexicans form Sugar Beet and Farm Laborers' Union in CA
- Wyoming Federation of Labor supports Chinese, Japanese miners



The Great Trike of 1877

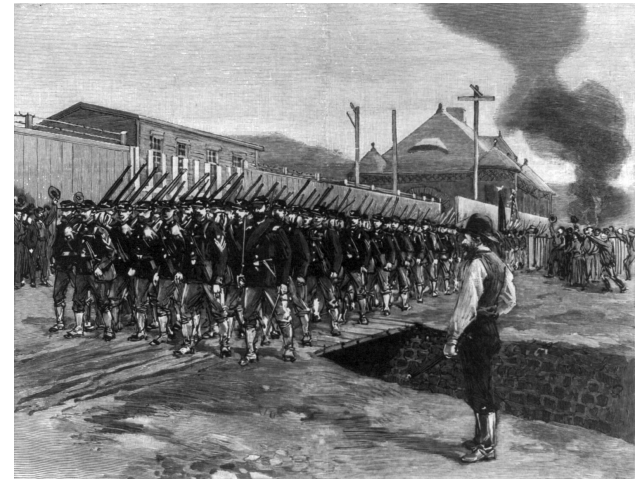
- Baltimore & Ohio Railroad strike spreads to other lines
- Governors say impeding interstate commerce; federal troops intervene

The Haymarket Affair

- 3,000 gather at Chicago's Haymarket Square, protest police brutality
- Violence ensues; 8 charged with inciting riot, convicted
- Public opinion turns against labor movement

The Homestead Strike

- 1892, Carnegie Steel workers strike over pay cuts
- Win battle against Pinkertons; National Guard reopens plant
- Steelworkers do not remobilize for 45 years

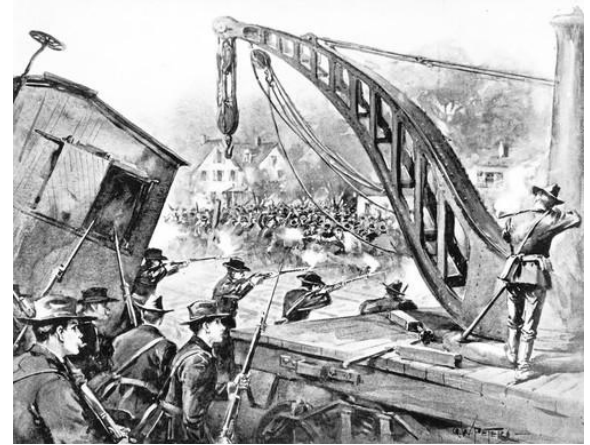


The Pullman Company Strike

- Pullman lays off 3,000, cuts wages but not rents; workers strike
- Pullman refuses arbitration; strikes turn violent; federal troops sent
- Debs jailed, most strikers fired, many blacklisted

Women Organize

- Women barred from many unions; unite behind powerful leaders
- **Mary Harris Jones**— most prominent organizer in women's labor
 - works for United Mine Workers
 - leads children's march
- Pauline Newman—organizer for International Ladies' Garment Workers
- 1911 Triangle Shirtwaist factory fire results in public outrage
- 1913 Paterson Silk Strike, women gain union leadership roles



Management and Government Pressure Unions

- Employers forbid unions; forced new employees to sign yellow-dog contracts
- Businesses hire prison labor at lower wages, leads to Coal Creek Saga

