

## A New Industrial Age

Natural resources and new ideas create a boom for industry and railroads. Government addresses corruption in business, and laborers organize for better working conditions.

# A New Industrial Age

**SECTION 1** The Expansion of Industry

**SECTION 2** The Age of the Railroads

**SECTION 3** Big Business and Labor

## Section 1

# The Expansion of Industry

At the end of the 19<sup>th</sup> century, natural resources, creative ideas, and growing markets fuel an industrial boom.

## SECTION

# 1 The Expansion of Industry

## Natural Resources Fuel Industrialization

---

### The Growth of Industry

- By 1920s, U.S. is world's leading industrial power, due to:
  - wealth of natural resources
  - government support for business
  - growing urban population

### 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

*Continued . . .*



NEXT

## SECTION

## 1

*continued* **Natural Resources Fuel Industrialization****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, barbed wire, farm machines
- Changes construction: Brooklyn Bridge; steel-framed skyscrapers

## SECTION

## 1

## Inventions Promote Change

### An Age of Inventions

- Numerous new inventions change the landscape, life, work

### 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
- Becomes available in homes; encourages invention of appliances
- Allows manufacturers to locate plants anyplace; industry grows

*Continued . . .*



NEXT

## SECTION

## 1

*continued* Inventions Promote Change**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
- Some laborers think mechanization reduces value of human worker

## Section 2

# The Age of the Railroads

The growth and consolidation of railroads benefits the nation but also leads to corruption and required government regulation.

## SECTION

## 2

# The Age of the Railroads

## Railroads Span Time and Space

---

### Railroads Encourage Growth

- Rails make local transit reliable, westward expansion possible
- Government makes land grants, loans to railroads
  - to help settle West
  - to develop country

### A National Network

- 1859, railroads extend west of Missouri River
- 1869, first **transcontinental railroad** completed, spans the nation

*Continued . . .*



## SECTION

## 2

*continued* Railroads Span Time and Space**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

## SECTION

## 2

## Opportunities and Opportunists

### New Towns and Markets

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

*Continued . . .*



NEXT

## SECTION

## 2

*continued* Opportunities and Opportunists**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

## SECTION

## 2

## 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

*Continued . . .*



NEXT

## SECTION

## 2

*continued* **The Grange and the Railroads****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



### Section 3

# Big Business and Labor

The expansion of industry results in the growth of big business and prompts laborers to form unions to better their lives.

## SECTION

## 3 Big Business and Labor

### Carnegie's Innovations

---

#### Carnegie Makes a Fortune

- **Andrew Carnegie** one of first moguls to make own fortune

#### New Business Strategies

- 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



## SECTION

## 3

## Social Darwinism and Business

### Principles of Social Darwinism

- Darwin's theory of biological evolution: the best-adapted survive
- **Social Darwinism**, or social evolution, based on Darwin's theory
- Economists use Social Darwinism to justify doctrine of laissez faire

### A New Definition of Success

- 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



## SECTION

## 3

## Fewer Control More

---

### Growth and Consolidation

- Businesses try to control industry with mergers—buy out competitors
- Buy all others to form monopolies—control production, wages, prices
- Holding companies buy all the stock of other companies
- **John D. Rockefeller** founds Standard Oil Company, forms trust
  - trustees run separate companies as if one

*Continued . . .*



## SECTION

## 3

*continued* **Fewer Control More****Rockefeller and the “Robber Barons”**

- Rockefeller profits by paying low wages, underselling others
  - when controls market, raises prices
- Critics call industrialists robber barons
  - industrialists also become philanthropists

**Sherman Antitrust Act**

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

*Continued . . .*

NEXT

## SECTION

## 3

*continued* **Fewer Control More****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

## SECTION

## 3

## Labor Unions Emerge

### Long Hours and Danger

- Northern wages generally higher than Southern
- Exploitation, unsafe conditions unite workers across regions
- 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

*Continued . . .*



## SECTION

## 3

*continued* **Labor Unions Emerge****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



## SECTION

## 3

## Union Movements Diverge

### Craft Unionism

- Craft unions include skilled workers from one or more trades
- **Samuel Gompers** helps found **American Federation of Labor (AFL)**
- AFL uses collective bargaining for better wages, hours, conditions
- AFL strikes successfully, wins higher pay, shorter workweek

### Industrial Unionism

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

*Continued . . .*



NEXT

## SECTION

## 3

*continued* **Union Movements Diverge****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 Activism in the West**

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



## SECTION

## 3

## Strikes Turn Violent

---

### **The Great Strike 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

*Continued . . .*



NEXT

## SECTION

## 3

*continued* **Strikes Turn Violent****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; violence ensues; federal troops sent
- Debs jailed, most workers fired, many blacklisted

*Continued . . .*

## SECTION

## 3

*continued* **Strikes Turn Violent****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

**Management and Government Pressure Unions**

- Employers forbid unions; turn Sherman Antitrust Act against labor
- Legal limitations cripple unions, but membership rises



**This is the end of the chapter presentation of lecture notes. Click the HOME or EXIT button.**



## Print Slide Show

1. On the **File** menu, select **Print**
2. In the pop-up menu, select **Microsoft PowerPoint**  
If the dialog box does not include this pop-up, continue to step 4
3. In the **Print what** box, choose the presentation format you want to print: slides, notes, handouts, or outline
4. Click the **Print** button to print the PowerPoint presentation