



CHAPTER 14: A New Industrial Age

By: Miller Anton, Royce Vigilla, and
Stephen Callaham

Chapter 14 Standards

SSUSH11 The student will describe the economic, social, and geographic impact of the growth of big business and technological innovations after Reconstruction

- Explain the impact of the railroads on other industries, such as steel, and on the organization of big business.
- Describe the impact of the railroads in the development of the West; include the transcontinental railroad, and the use of Chinese labor.
- Identify John D. Rockefeller and the Standard Oil Company and the rise of trusts and monopolies
- Describe the inventions of Thomas Edison; include the electric light bulb, motion pictures, and the phonograph, and their impact on American life

Opening Activity: Quick Class Discussion

How did the Business decisions and technological advances of the twentieth century affect present day America?

Chapter 14 Section 1: Natural Resources Fuel Industrialization

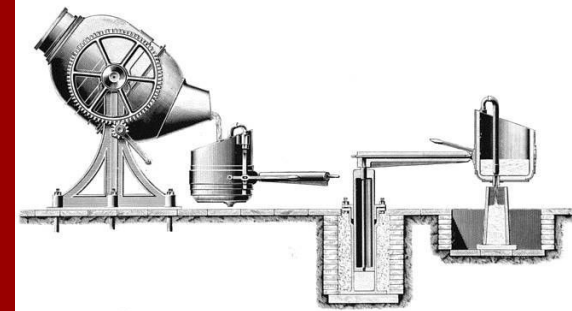
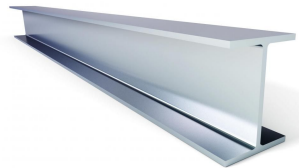


FIG. 44. EARLY FORM OF BESSEMER CONVERTING PLANT AT SHEFFIELD

Black Gold: Oil first became used in the mid 1800's and as kerosene only. However once Edwin L. Drake first used a steam engine to get oil out of Texas its uses grew. The oil boom hit right after. At first it was still just used as kerosene and gasoline was thrown away as a by product, but following the invention of the automobile gas quickly became the most used form of oil.

Steel: The Bessemer process was invented to refine iron into steel which is rust resistant, more flexible, and a lighter metal than Iron. Steel became a huge industry and was used in all of the nation's railroads. Steel was then used to make farming machines that turned the Great Plains into producers for the entire nation. Shortly after the Bessemer process was made the open hearth process was discovered that was even more advanced and could turn scrap into steel, whereas only raw material could before.

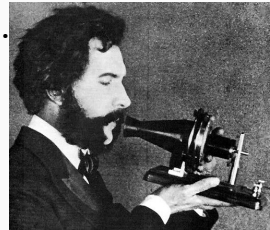


Chapter 14 Section 1: Natural Resources Fuel Industrialization



Inventions promote change: Edison's lightbulb, Alexander Graham Bell's telephone, and William Sholes typewriter changed the world. These inventions lead to more women in the workforce and in many incidences less back breaking work. These inventions are still around today though in more advanced ways.

Electricity changes lives: The lightbulb and other uses of electricity that followed such as fans and printing presses allowed for factories to support larger operations and could move away from rivers. The average worker's standard of living went up during the later periods of industrialization. Electricity brought better and more jobs to women. Women's jobs had at been traditional such as making clothes for the family, however these jobs were obsolete as factories would do this now on a large scale.



Chapter 14 Section 2: Railroads Span Time and Space



The spread of Railroads Throughout the Country.

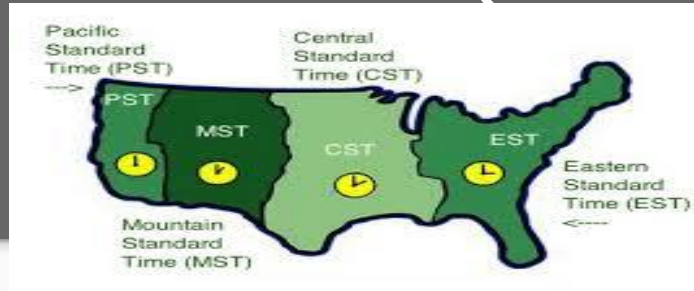
- Railroads began to spread all over the country like the Central Pacific and Union Pacific Railroads which met in Utah in 1869.
- Because of this it led to the nation's first *transcontinental railroad* and by the start of the Civil War 180,000 miles of track were placed all over the country.

New Hopes and Hardships Endured by Workers

- Railroads brought new dreams for land and a fresh start but there were negatives to it.
- For instance many immigrants worked the tracks like the Chinese (hired by Central Pacific) and Irish (hired by Union Pacific).
- These workers had to endure attacks from Natives as well as accidents from tnt and diseases which led to 2,000 workers being killed and 20,000 injured.



Chapter 14 Section 2 (Continued)



Creation of Timezones

- Since many people used railroads as transportation passengers had problems with time as they went from city to city since their times changed.
- To counter this Professor C.F. Dowd had a plan where he made 4 time zones in the U.S. which were : Eastern, Central, Mountain, and Pacific and by Nov. 18, 1883 towns and railroads crews synchronized their times.

Markets and Towns Arise

- Railroads then became linking towns together and promoted trade.
- Towns began to specialize in goods like Chicago and its stockyards and Minneapolis for its grain which they mass produced.
- New towns near railroads arose like Arizona, Denver, Colorado, and Seattle.

Chapter 14 Section 2 (Continued): Opportunities and Opportunists



Pullman

- George Pullman built a factory that made sleepers and railroad cars to help give passengers of trains more comfort during their travel.
- Pullman made a town for his workers that provide basic needs like food and shelter and also provided shops as well as doctor's offices.
- It was a strict environment to live in like no loitering or alcohol because Pullman wanted a stable work force but because of this as well as refusing to lower rent pay in led to a violent strike in 1894.

Credit Mobilier

- Credit Mobilier was a construction company from stockholders in the Union Pacific Railroad.
- The stockholders made a contract with the company to lay tracks at 2 or 3 times the actual cost and kept the profits.
- The stockholders then gave 20% of the stocks to representatives in Congress.
- This led to an investigation within the company that officers had taken up to \$23 million in stocks, bonds, and cash.
- Reputations were tainted like Congressman James Garfield who later was president and VP Schuyler Colfax as well as the Republican Party as a whole.



Chapter 14 Section 2: The Grange and Railroads



Railroad Abuses

- Farmers got angry because the Gov't misused land grants which companies sold to companies rather than settlers and fixed prices to get farmers in debt as well as charge different and more expensive rates for short hauls rather than long hauls.

Granger Laws (Grangers= farmers organization founded in 1867 which asked for the Gov't to control the railroad industry)

- Because of this Grangers took action and elected political officials that would protect their interests.
- Like in 1871 Illinois authorized a commission "to establish maximum freight and passenger rates and prohibit discrimination" which was later passed by other states. These were Granger laws.
- This led to Munn vs Illinois because the railroad companies got angry and the Supreme court voted that Granger laws be upheld to benefit the farmers and consumers.

Chapter 14: Section 2 (continued)



Interstate Commerce Act

- This led to the Supreme Court stating states couldn't set rates for interstate commerce which angered the public.
- So Congress passed the Interstate Commerce Act to regulate railroad activities and interstate commerce.

Panic and Consolidation

- Congress then made the ICC which was suppose to enforce the Interstate Commerce Act but it led to corruption, people losing jobs, and other competition which ultimately lead to a depression.
- By 1894 financial companies took over railroad companies and as the 20th century ended 7 powerful companies controlled $\frac{2}{3}$ of the railroad tracks in the nation.

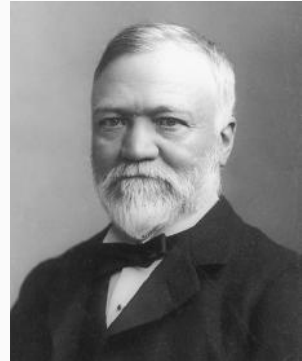
Chapter 14 Section 3: Big Business and Labor

Carnegie's Innovations

- Andrew Carnegie revolutionizes the steel industry with new machinery and business techniques.
- Carnegie Steel Company quickly rises to become the top steel manufacturer in Britain.
- Controlled much of the steel industry through:

Vertical and **Horizontal Integration**

- **Vertical integration** is the process in which Carnegie bought out his suppliers—coal fields and iron mines, ore freighters, and railroad lines—in order to control the raw materials and transportation systems.
- Carnegie also attempted to buy out competing steel producers. In this process, known as **Horizontal Integration**, companies producing similar products merge.



Chapter 14 Section 3

Social Darwinism and Business

- The philosophy called **Social Darwinism** grew out of the English naturalist Charles Darwin's theory of biological evolution, from his book *Origin of Species*.
- Economists found in Social Darwinism a way to justify the doctrine of laissez faire (a French term meaning "allow to do"). According to this doctrine, the marketplace should not be regulated.

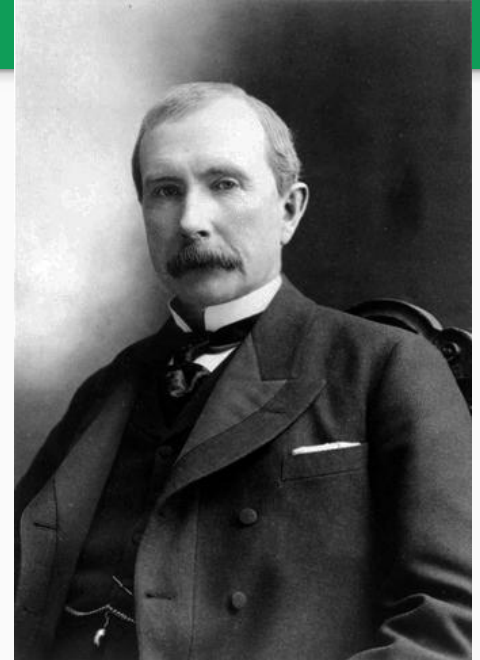
Fewer Control More

- Many companies followed the horizontal integration path and merged with other big companies.
- Headed by banker **J. P. Morgan**, United States Steel was one of the most successful holding companies. In 1901, when it bought the largest manufacturer, Carnegie Steel, it became the world's largest business

Chapter 14 Section 3

Fewer Control More cont.

- Corporations such as the Standard Oil Company, established by **John D. Rockefeller**, took a different approach to mergers: they joined with competing companies in trust agreements. Participants in a trust turned their stock over to a group of trustees—people who ran the separate companies as one large corporation. In return, the companies were entitled to dividends on profits earned by the trust. Trusts were not legal mergers, however.
- Rockefeller used a trust to gain total control of the oil industry in America.



Chapter 14 Section 3



Sherman Antitrust Act

- In 1890, the Sherman Antitrust Act made it illegal to form a trust that interfered with free trade between states or with other countries.
- Prosecuting companies under the Sherman act was not easy, however, because the act didn't clearly define terms such as trust. In addition, if firms such as Standard Oil felt pressure from the government, they simply reorganized into single corporations.

Business Boom Bypasses the South

- Industrial growth concentrated in the North, where natural and urban resources were plentiful. The South was still trying to recover from the Civil War, hindered by a lack of capital—money for investment. After the war, people were unwilling to invest in risky ventures. Northern businesses already owned 90 percent of the stock in the most profitable Southern enterprise, the railroads, thereby keeping the South in a stranglehold

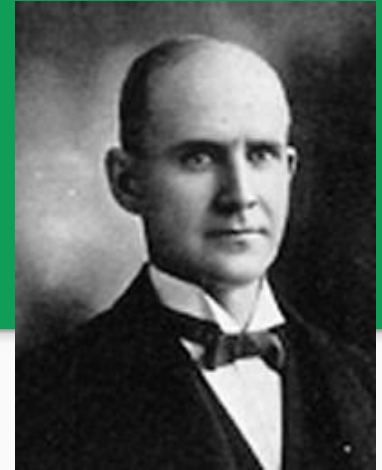
Chapter 14 Section 3

Labor Unions Emerge

- Exploitation and unsafe working conditions drew workers together across regions in a nationwide labor movement. Laborers—skilled and unskilled, female and male, black and white—joined together in unions to try to improve their situations..
- Skilled workers had formed small, local unions since the late 1700s. However, the first large-scale national organization of laborers, the **National Labor Union (NLU)**, was formed in 1866 by iron worker **William H.Sylvia**.



Chapter 14 Section 3



Union Movements diverge

- As labor activism spread, it diversified. Two major types of unions made great gains under forceful leaders.

Craft and Industrial Unionism

- One approach to the organization of labor was craft unionism, which included skilled workers from one or more trades. **Samuel Gompers** led the Cigar Makers' International Union to join with other craft unions in 1886.
- The **American Federation of Labor** (AFL) with Gompers as its president, focused on collective bargaining, or negotiation between representatives of labor and management, to reach written agreement on wages, hours, and working conditions.
- **Industrial Unionism** follows the concept that all laborers, skilled and unskilled, should be included in the unions.
- **Eugene V. Debs** formed the **American Railway Union** which quickly became the largest railway Union with 150,000 members.

Chapter 14 Section 3



Strikes Turn Violent

- Industry and government responded forcefully to union activity, which they saw as a threat to the entire capitalist system.

THE GREAT STRIKE OF 1877 | THE HAYMARKET AFFAIR | THE HOMESTEAD STRIKE

- These three strike show a timeline of Union events. The Great Strike was the first large scale successful strike. The Haymarket Affair was encouraged by the Great Strike and ended in violence after a bomb was thrown into the police line and several strikers were killed in the aftermath. This caused the public to view strikers and unions negatively. The Homestead Strike is where the unions buckled down and continued to strike even though they no longer had public support.

Section 1: Natural Resources Fuel Industrialization review



How did industrialization lead more women to enter the workforce?

With less labor intensive jobs and jobs traditionally done at home by women were done on a large scale by factories, women took new jobs in the garment industry that came about because of industrialization.

What did the Bessemer process make widely used?

Steel

Who was making clothes now that women were working?

Factories!



Section 2: The Age of Railroads Review

Question 1: With the boom of cities arising from railroads, what effects did they have on the cities as well as helping the nation grow overall?

Question 2: What are some effects that the Interstate Commerce Act had?

Question 3: Why do you think only immigrants worked the hard and dangerous labor of building railroads?

Section 3 Questions

1. In 1870, Rockefeller's Standard Oil company was able to take control of %90 of the oil market, effectively establishing a monopoly. Explain why there a laws and regulations today to combat this.
2. Why were labor unions necessary and why didn't Industry leaders like them?