

# Industrialization



## Essential Question

Did rapid industrialization benefit economic and social systems in the United States?



**About the Photograph:** Chinese laborers from the Central Pacific Railroad blast tunnels and construct bridges in a race to lay track through the Sierra Nevada. Blasting tunnels was difficult; sometimes laborers progressed less than a foot a day.

In this module you will learn about the industrial revolution of the late 1800s, sometimes referred to as the second industrial revolution, and the impact it had on American businesses and workers.

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**The Big Idea** The growth and consolidation of railroads benefited the nation but also led to corruption and required government regulation.

### Lesson 3: Big Business . . . . . 509

**The Big Idea** The expansion of industry resulted in the growth of big business.

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**The Big Idea** The expansion of industry prompted laborers to form unions to better their lives.

## Explore ONLINE!



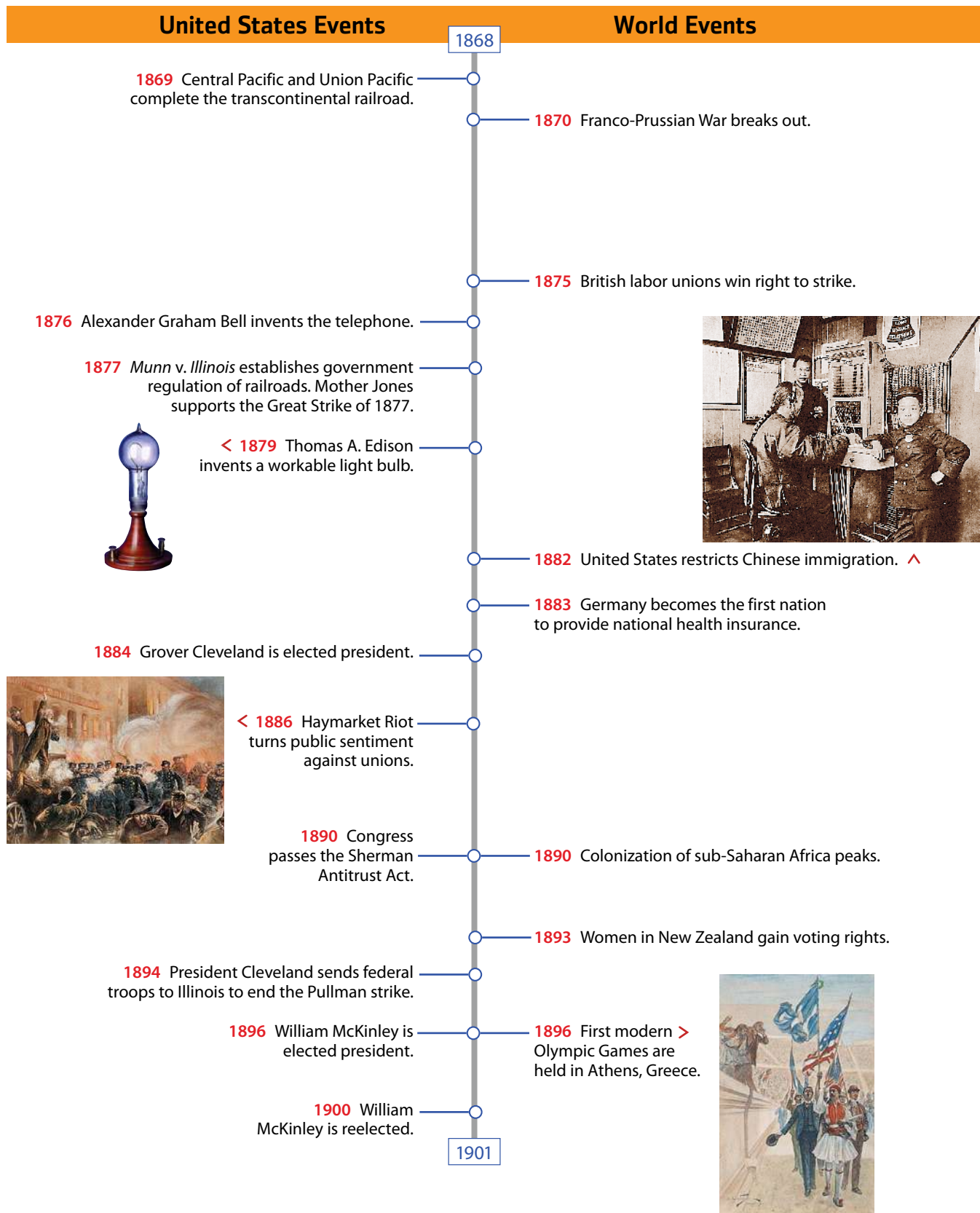
### VIDEOS, including...

- Great Minds in Business: Andrew Carnegie
- Oil
- Setting Time Zones
- The Rise of J. P. Morgan
- Traits of a Titan
- Homestead Strike

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- Graphic Organizers
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# Timeline of Events 1868–1901

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# The Expansion of Industry

## The Big Idea

At the end of the 19th century, natural resources, creative ideas, and growing markets fueled an industrial boom.

## Why It Matters Now

Technological developments of the late 19th century paved the way for the continued growth of American industry.

## Key Terms and People

Edwin L. Drake

Bessemer process

Thomas Alva Edison

Lewis H. Latimer

Christopher Sholes

Alexander Graham Bell

## One American's Story

One day, Pattillo Higgins noticed bubbles in the springs around Spindletop, a hill near Beaumont in southeastern Texas. This and other signs convinced him that oil was underground. If Higgins found oil, it could serve as a fuel source around which a vibrant industrial city would develop.

Higgins, who had been a mechanic and a lumber merchant, couldn't convince geologists or investors that oil was present, but he didn't give up. A magazine ad seeking investors got one response. It was from Captain Anthony F. Lucas, an experienced prospector who also believed that there was oil at Spindletop. When other investors were slow to send money, Higgins kept his faith, not only in Spindletop, but in Lucas.

*"Captain Lucas, . . . these experts come and tell you this or that can't happen because it has never happened before. You believe there is oil here, . . . and I think you are right. I know there is oil here in greater quantities than man has ever found before."*

—Pattillo Higgins, quoted in *Spindletop*



Pattillo Higgins

In 1900 the two men found investors, and they began to drill that autumn. After months of difficult, frustrating work, on the morning of January 10, 1901, oil gushed from their well. The Texas oil boom had begun.



**Vocabulary**  
entrepreneur a person who organizes, operates, and assumes the risk for a business venture

## Natural Resources Fuel Industrialization

During the early 1800s an industrial revolution brought new technology and industries to the United States. Factories and machines began to do much of the work that had previously been done by hand. By the end of the Civil War, however, the nation was still largely agricultural. In the late 1800s another period of industrial growth and technological development occurred in the United States. By the 1920s it had become the leading industrial power in the world. This immense industrial boom is sometimes called the Second Industrial Revolution. It was due to several factors, including new uses of natural resources, government support for business and innovation, and a growing urban population that provided both cheap labor and markets for new products.

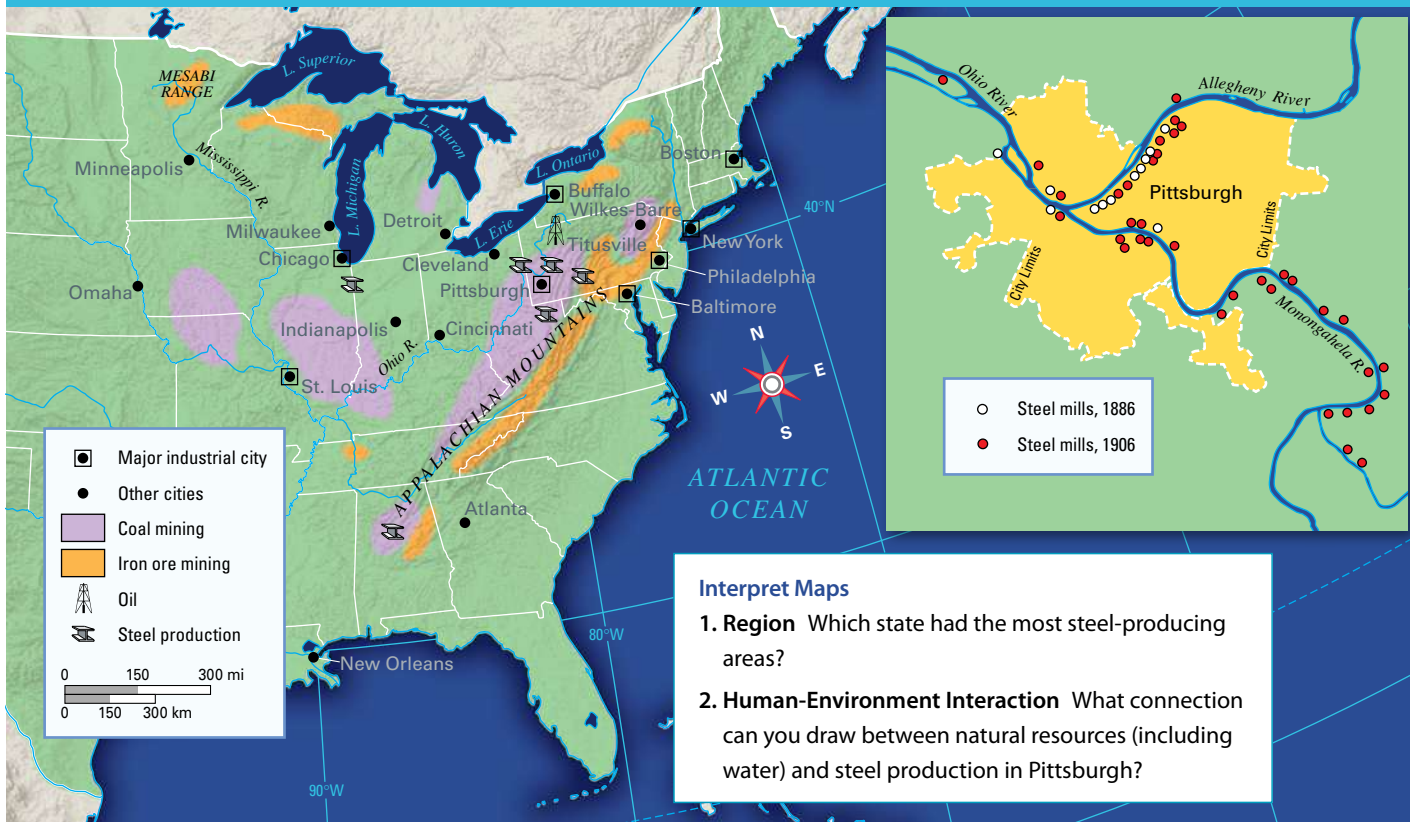
**BLACK GOLD** Though eastern Native American tribes had made fuel and medicine from crude oil long before Europeans arrived on the continent, early American settlers had little use for oil. In the 1840s, Americans began using kerosene to light lamps after the Canadian geologist Abraham Gesner discovered how to distill the fuel from oil or coal.

It wasn't until 1859, however, when **Edwin L. Drake** successfully used a steam engine to drill for oil near Titusville, Pennsylvania, that removing oil from beneath the earth's surface became practical. This breakthrough started an oil boom that spread to Kentucky, Ohio, Illinois, Indiana, and, eventually, Texas. Petroleum refining industries arose in Cleveland and Pittsburgh as entrepreneurs rushed to transform the oil into kerosene. Gasoline, a byproduct of the refining process, originally was thrown away. But after the automobile became popular, gasoline became the most important form of oil.

**BESSEMER STEEL PROCESS** Oil was not the only natural resource that was plentiful in the United States. There were also abundant deposits of coal and iron. In 1887 prospectors discovered iron ore deposits more than 100 miles long and up to 3 miles wide in the Mesabi Range of Minnesota. At the same time, coal production skyrocketed—from 33 million tons in 1870 to more than 250 million tons in 1900.

Iron is a dense metal, but it is soft and tends to break and rust. It also usually contains other elements, such as carbon. Removing the carbon from iron produces a lighter, more flexible, and rust-resistant metal—steel. The raw materials needed to make steel were readily available. All that was needed was a cheap and efficient manufacturing process. The **Bessemer process** was developed independently by both the British manufacturer Henry Bessemer and American ironmaker William Kelly around 1850. It soon became widely used. This technique involved injecting air into molten iron to remove the carbon and other impurities. By 1880 American manufacturers were using the new method to produce more than 90 percent of the nation's steel. In that age of rapid change and innovation, even the successful Bessemer process was improved by the 1860s. It was eventually replaced by the open-hearth process. This process enabled manufacturers to produce quality steel from scrap metal as well as from raw materials.

## Natural Resources and the Birth of a Steel Town, 1886–1906



### Interpret Maps

- Region** Which state had the most steel-producing areas?
- Human-Environment Interaction** What connection can you draw between natural resources (including water) and steel production in Pittsburgh?

**NEW USES FOR STEEL** The railroads, with thousands of miles of track, became the biggest customers for steel, but inventors soon found additional uses for it. Cyrus McCormick and John Deere used steel to create mechanical farming equipment such as reapers and plows. This equipment helped transform the plains region into the food producer of the nation. These improvements in technology made farming more efficient, but it also meant that fewer laborers were needed to work the land. As a result, many people had to move from rural areas to cities to find work.

Steel changed the face of the nation as well. It made innovative construction possible. One of the most remarkable structures was the Brooklyn Bridge. Completed in 1883, it spanned 1,595 feet of the East River in New York City. Its steel cables were supported by towers higher than any man-made and weight-bearing structure except the pyramids of Egypt. Like those ancient marvels, the completed bridge was called a wonder of the world.

Around this time, William Le Baron Jenney designed the first skyscraper with a steel frame—the Home Insurance Building in Chicago. This set the stage for a new era of expansion upward as well as outward. Before Jenney had his pioneering idea, the weight of large buildings was supported entirely by their walls or by iron frames, which limited the buildings' height. With a steel frame to support the weight, however, architects could build as high as they wanted. As structures soared into the air, not even the sky seemed to limit what Americans could achieve.

### Reading Check

#### Summarize

What natural resources were most important for industrialization?

## Inventions Promote Change

By capitalizing on natural resources, their own ingenuity, and government support for innovation in the form of patents, inventors changed more than the landscape. Their inventions affected the very way people lived and worked.

**THE POWER OF ELECTRICITY** In 1876 **Thomas Alva Edison** became a pioneer on the new industrial frontier when he established the world's first research laboratory in Menlo Park, New Jersey. There Edison and his associates worked to perfect the incandescent light bulb, applying for a patent for his version of the bulb in 1880. **Lewis H. Latimer**, an African American inventor, played a key role in improving the light bulb when he invented a carbon filament in 1881. This filament lasted longer than filaments made from other materials that had been used in the past. Latimer later went to work for Edison's company. Eventually, Edison and his team improved the light bulb even further by using tungsten filaments, which are still used today.

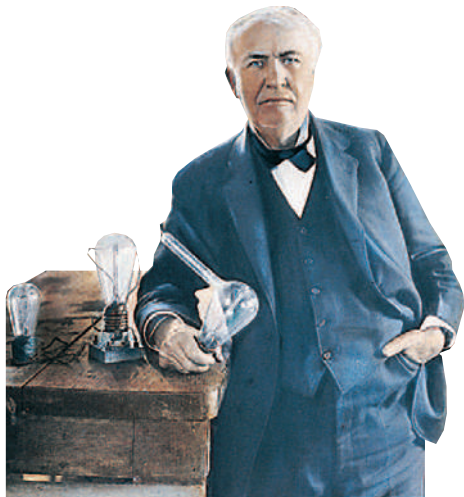
Thomas Edison also invented an entire system for producing and distributing electrical power. Another inventor, George Westinghouse, along with Edison, added innovations that made electricity safer and less expensive. The harnessing of electricity completely changed the nature of business in America. By 1890 electric power ran numerous machines, from fans to printing presses. This inexpensive, convenient source of energy soon became available in homes and spurred the invention of time-saving appliances. Electric streetcars made urban travel cheap and efficient and also promoted the outward spread of cities.

More important, electricity allowed business owners greater freedom in deciding where to locate their plants. Many factories in the past, including textile mills, were powered by water. That meant they had to be located near rivers or streams. The availability of electric power meant that

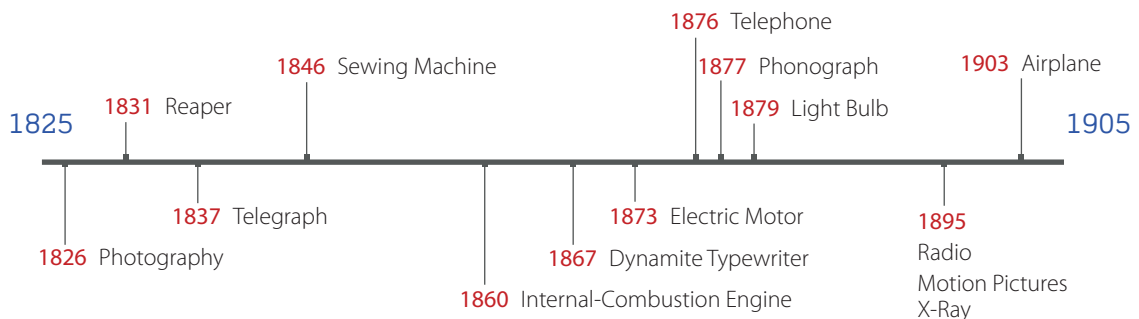
### Vocabulary

**incandescent** giving off visible light as a result of being heated

Edison hoped to create a long-lasting light bulb with a soft glow.



The Technological Explosion, 1825–1905





manufacturers could consider other factors such as population and the availability of natural resources when determining where to locate their plants. Many automobile manufacturers, for example, chose to locate their plants in Detroit, Michigan. There rail and water shipping routes were easily accessible and coal and iron mines were nearby. Greater flexibility enabled industries to grow as never before.

**INVENTIONS CHANGE LIFESTYLES** Edison's light bulb was only one of several revolutionary inventions of the late 1800s. **Christopher Sholes** invented the typewriter in 1867 and changed the world of work. Next to the light bulb, however, perhaps the most dramatic invention was the telephone. **Alexander Graham Bell** and Thomas Watson unveiled this invention in 1876. It allowed people to talk to each other over long distances and opened the way for a worldwide communications network. Companies quickly found the telephone to be an essential business tool.

The typewriter and the telephone particularly affected office work and created new jobs for women. Businesses began to hire women as typists to manage company correspondence. Women made up less than 5 percent of all office workers in 1870. By 1910 they accounted for nearly 40 percent of the clerical work force.

The typewriter shown here dates from around 1890.



New inventions also had a tremendous impact on factory work, as well as on jobs that traditionally had been done at home. For example, women had previously sewn clothing by hand for their families. With industrialization, clothing could be mass-produced in factories. This created a need for garment workers, many of whom were women.

Industrialization freed some factory workers from backbreaking labor and helped make their jobs easier. Shoemaker Jan Ernst Matzeliger designed a machine that could attach the upper part of shoes to the soles, helping to automate the shoe manufacturing process. Margaret E. Knight invented

**Reading Check**  
**Analyze Effects** How  
did electricity change  
American life?

several machines that made the shoemaking process more efficient. Matzelter's and Knight's contributions to the footwear industry helped lower the cost of production. Automation made it possible to make larger quantities of shoes in a shorter amount of time.

By 1890 the average workweek in the United States had been reduced by about ten hours. However, many laborers felt that the mechanization of so many tasks reduced human workers' worth. As consumers, though, workers regained some of their lost power in the marketplace.

The inventions and processes of the late 1800s and early 1900s increased the standard of living in the United States and created notable wealth for business owners. The increased living standards attracted new immigrants seeking opportunities for a better life.

The rise of immigration brought a new set of challenges and concerns to the democratic system of the United States. It also brought new workers and potential consumers to the economy. The country's expanding urban population provided a vast potential market for the new inventions and products of the late 19th century.

### Lesson 1 Assessment

1. **Organize Information** Use a chart to list resources, ideas, and markets that affected the industrial boom of the 19th century. In the second column, note how each item contributed to industrialization.

Resources, Ideas, Markets	Impact

2. **Key Terms and People** For each key term or person in the lesson, write a sentence explaining its significance.

3. **Analyze Effects** Which invention or development described in this lesson had the greatest impact on society? Justify your choice.

**Think About:**

- the applications of inventions
- the impact of inventions on people's daily lives
- the effect of inventions on the workplace

4. **Make Inferences** Do you think consumers gained power as industry expanded in the late 19th century? Why or why not?
5. **Hypothesize** If the United States had been poor in natural resources, how would industrialization have been affected?

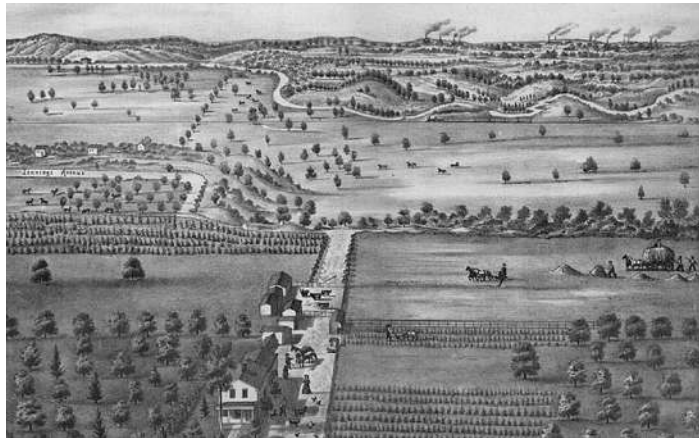


## Industry Changes the Environment

By the mid-1870s, new ideas and technology were well on the way to changing almost every aspect of American life. The development of waterways enabled people and goods to move quickly across the United States, promoting the growth of a nationwide economy. The location of Cleveland, Ohio, on the shores of Lake Erie, gave the city access to raw materials and made it ripe for industrialization. What no one foresaw were the undesirable side effects of rapid development and technological progress.

### 1 FROM HAYSTACKS TO SMOKESTACKS

In 1874 parts of Cleveland were still rural, with farms like the one pictured dotting the landscape. The smokestacks of the Standard Oil refinery in the distance, however, indicate that industrialization had begun.



### 2 REFINING THE LANDSCAPE

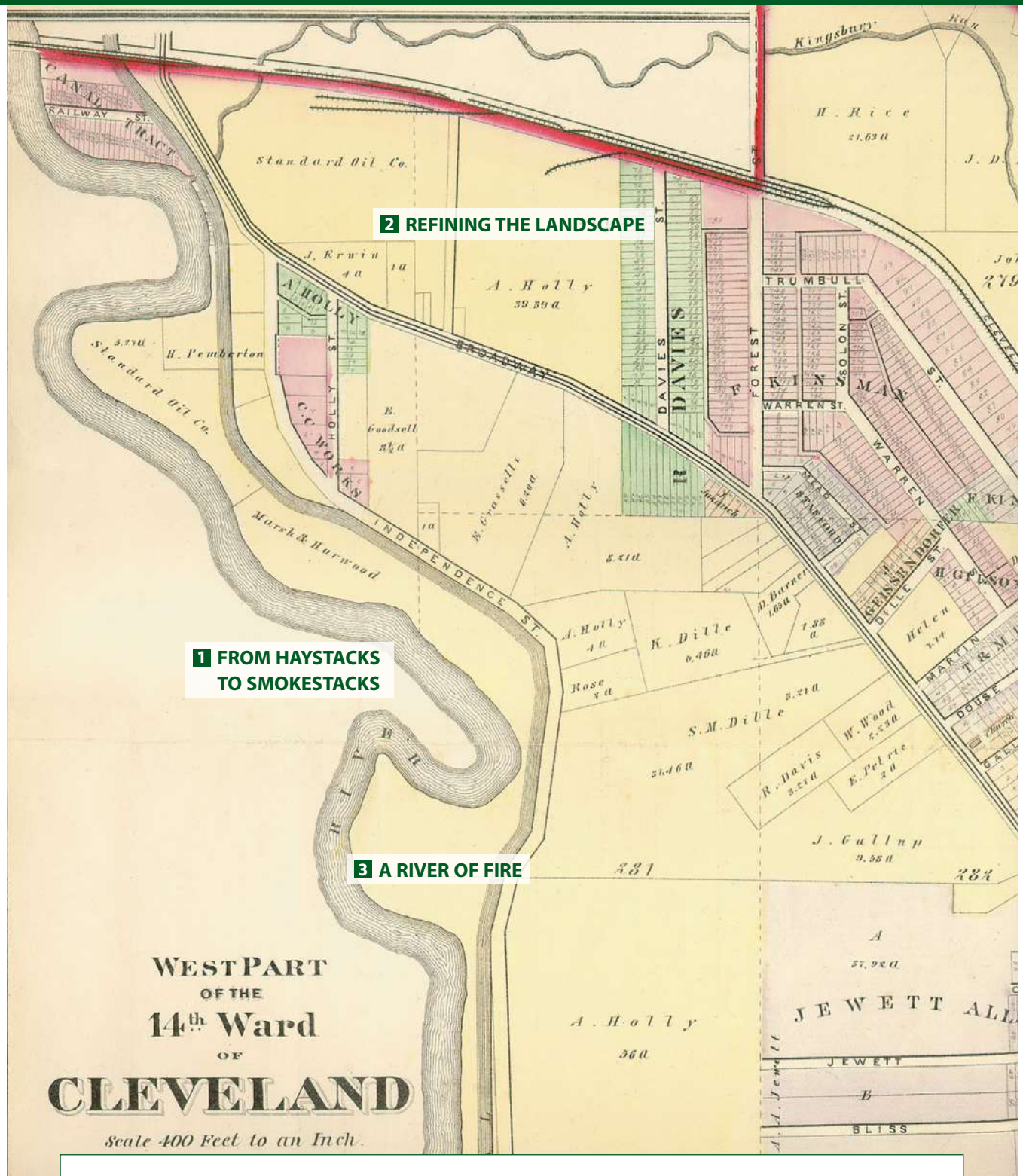
Industries like the Standard Oil refinery shown in this 1889 photo soon became a source of prosperity for both Cleveland and the entire country. The pollution they belched into the atmosphere, however, was the beginning of an ongoing problem: how to balance industrial production and environmental concerns.



### 3 A RIVER OF FIRE

Industrial pollution would affect not only the air but also the water. Refineries and steel mills discharged so much oil into the Cuyahoga River that major fires broke out on the water in 1936, 1952, and 1969. The 1952 blaze (pictured at right) destroyed three tugboats, three buildings, and the ship-repair yards. In the decade following the 1969 fire, changes in the way industrial plants operated, along with the construction of wastewater treatment plants, helped restore the quality of the water.





### Critical Thinking

**1. Analyze Patterns** Locate the Standard Oil Company on the map of Cleveland. What can you conclude about where industry was located as compared with the location of residential neighborhoods?

**2. Create a Thematic Map** Pose a historical question about the relationship between industry and areas of the Midwest. For example, what types of industry developed near Chicago and why? Then research and create a map that answers your question.



# The Age of the Railroads

## The Big Idea

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

## Why It Matters Now

Railroads made possible the expansion of industry across the United States.

## Key Terms and People

George M. Pullman  
transcontinental railroad  
Cornelius Vanderbilt  
Crédit Mobilier  
*Munn v. Illinois*  
Interstate Commerce Act

## One American's Story

In October 1884 the economist Richard Ely visited the town of Pullman, Illinois, to write about it for *Harper's* magazine. At first Ely was impressed with the atmosphere of order, planning, and well-being in the town **George M. Pullman** had designed for the employees of his railroad-car factory. But after talking at length with a dissatisfied company officer, Ely concluded the town had a fatal flaw: it too greatly restricted its residents. Pullman employees were compelled to obey rules in which they had no say. Ely concluded that "the idea of Pullman is un-American."

*"It is benevolent, well-wishing feudalism [a medieval social system of nobles and peasants], which desires the happiness of the people, but in such way as shall please the authorities. . . . If free American institutions are to be preserved, we want no race of men reared as underlings."*

—Richard Ely, from "Pullman: A Social Study"



The town of Pullman was carefully laid out and strictly controlled.

As the railroads grew, they came to influence many facets of American life. This included, as in the town of Pullman, the personal lives of the country's citizens. They caused the standard time and time zones to be set and influenced the growth of towns and communities. However, the unchecked power of railroad companies led to widespread abuses that spurred citizens to demand federal regulation of the industry.



## Railroads Span Time and Space

Rails made local transit reliable and westward expansion possible for business as well as for people. Realizing how important railroads were for settling the West and developing the country, the government made huge land grants and loans to the railroad companies.

**A NATIONAL NETWORK** By 1856 the railroads extended west to the Mississippi River. Three years later, they crossed the Missouri. Just over a decade later, crowds across the United States cheered as the Central Pacific and Union Pacific Railroads met at Promontory, Utah, on May 10, 1869. A golden spike ceremony marked when the first **transcontinental railroad** spanned the nation. Other transcontinental lines followed, and regional lines multiplied as well. At the start of the Civil War, the nation had about 30,000 miles of track. By 1890 that figure was nearly six times greater.

**Cornelius Vanderbilt** of New York was one of the key figures in the expansion of regional railroads. After the Civil War, Vanderbilt purchased several small railroads in the New York area. Like most regional railroads of the time, each of them was very short, linking only two cities. Vanderbilt, however, chose to link these small railroads into a larger network. Over time, he expanded his network westward from New York into the Midwest, greatly improving interstate travel. Before Vanderbilt's consolidation, a train trip from New York City to Chicago required a passenger to change trains 17 times and took at least 50 hours. On Vanderbilt's new network, the same trip took place on a single train and took less than half the time. By the time he died, Vanderbilt controlled more than 4,500 miles of track and was one of the wealthiest men in the country.

**ROMANCE AND REALITY** The railroads brought the dreams of available land, adventure, and a fresh start within the grasp of many Americans.

This romance was made possible, however, only by the harsh lives of railroad workers.

The Central Pacific Railroad employed thousands of Chinese immigrants. The Union Pacific hired Irish immigrants and desperate, out-of-work Civil War veterans. Although the railroads paid all their employees poorly, Asians usually earned less than whites. The average pay for whites working a ten-hour day was \$40 to \$60 a month plus free meals. Chinese immigrants hired by the Central Pacific performed similar tasks from dawn to dusk for about \$35 a month—and they had to supply their own food.

The working conditions for all immigrants, though, were equally horrendous. Accidents and diseases disabled and killed thousands of men each year. In 1888, when the first railroad statistics were published, the casualties totaled more than 2,000 employees killed and 20,000 injured.



Chinese immigrants and other railroad laborers worked in grueling conditions and all kinds of weather.

**Reading Check**  
**Analyze Effects**  
What were the effects  
of railroad expansion?

**RAILROAD TIME** In spite of these difficult working conditions, the railroad laborers helped to transform the diverse regions of the country into a united nation. Though linked in space, each community still operated on its own time, with noon when the sun was directly overhead. Noon in Boston, for example, was almost 12 minutes later than noon in New York. Travelers riding from Maine to California might reset their watches 20 times.

In 1869, to remedy this problem, Professor C. F. Dowd proposed that the earth's surface be divided into 24 time zones, one for each hour of the day. Under his plan, the United States would contain four zones: the Eastern, Central, Mountain, and Pacific time zones. The railroad companies endorsed Dowd's plan enthusiastically, and many towns followed suit.

Finally, on November 18, 1883, railroad crews and towns across the country synchronized their watches. In 1884 an international conference set worldwide time zones that incorporated railroad time. The U.S. Congress, however, didn't officially adopt railroad time as the standard for the nation until 1918. As strong a unifying force as the railroads were, however, they also opened the way for abuses that led to social and economic unrest.

## Opportunities and Opportunists

The growth of the railroads influenced the industries and businesses in which Americans worked. Iron, coal, steel, lumber, and glass industries grew rapidly as they tried to keep pace with shortages as the railroads' demand for materials and parts increased. The rapid spread of railroad lines also fostered the growth of towns, helped establish new markets, and offered rich opportunities for both visionaries and profiteers.

### ANOTHER PERSPECTIVE

#### On the Wrong Track

While the railroads captured the imagination of most 19th-century Americans, there were those who didn't get on the bandwagon. The writer Herman Melville raged against the smoke-belching iron horse and the waves of change it set in motion as vehemently as his character Captain Ahab raged against the white whale and the sea in *Moby-Dick*. "Hark! here comes that old dragon again—that gigantic gadfly . . . snort! puff! scream! Great improvements of the age," Melville fumed. "Who wants to travel so fast? My grandfather did not, and he was no fool!"

**SUPPLY AND DEMAND** The increased output of iron, coal, and other railway materials was in response to the economic principles of supply and demand. In economics, the term *supply* refers to the amount of a good or service that companies are willing to produce for sale. *Demand* is the amount of that product that consumers are willing or able to purchase. The two concepts are linked. In general, as the demand for a product rises, companies produce more of it, hoping to increase their sales and profits. Miners, smelters, and lumberers were happy to increase their output as railroad construction increased. The increased demand caused their profits to skyrocket.

**NEW TOWNS AND MARKETS** By linking previously isolated cities, towns, and settlements, the railroads promoted trade and interdependence. As part of a nationwide network of suppliers and markets, individual towns began to specialize in particular products.

Chicago soon became known for its stockyards and Minneapolis for its grain industries. These cities prospered by selling large quantities of their products to the entire country. In Florida railroads helped create a tourism industry. Henry Flagler purchased and built railroad lines to link Florida, including the Florida Keys, to the rest of the country. He hoped to capitalize on the state's warm climate to attract northern visitors.

New towns and communities also grew up along the railroad lines. As a result, parts of the country that had been sparsely populated began to fill with residents. Cities as diverse as Abilene, Kansas; Flagstaff, Arizona; Denver, Colorado; and Seattle, Washington, owed their prosperity, if not their very existence, to the railroads.



Pullman cars brought luxury to the rails, as shown in this advertisement from around 1890.

**PULLMAN** The railroads helped cities not only grow up but branch out. In 1880, for example, George M. Pullman built a factory for manufacturing sleepers and other railroad cars on the Illinois prairie. His Pullman Palace Car Company was known for creating sleeper cars that made long-distance travel more comfortable.

The nearby town that Pullman built for his employees followed in part the models of earlier industrial experiments in Europe. Whereas New England textile manufacturers had traditionally provided housing for their workers, the town of Pullman provided for almost all of workers' basic needs. Pullman residents lived in clean, well-constructed brick houses and apartment buildings with at least one window in every room—a luxury for city dwellers. In addition, the town offered services and facilities such as doctors' offices, shops, and an athletic field.

As Richard Ely observed, however, the town of Pullman remained firmly under company control. Residents were not allowed to loiter on their front steps or to drink alcohol. Pullman hoped that his tightly controlled environment would ensure a stable work force. However, Pullman's refusal to lower rents after cutting his employees' pay led to a violent strike in 1894.

**CRÉDIT MOBILIER** Pullman was driven to create his company town by profit motive. This economic principle states that the main goal of a business is to make money. For some other railroad magnates, or powerful and influential industrialists, this profit motive turned into self-serving corruption. In one of the most infamous schemes, stockholders in the Union Pacific Railroad formed, in 1864, a construction company called **Crédit Mobilier** (krěd'it mō-bēl'yər). The stockholders gave this company a contract to lay track at two to three times the actual cost—and pocketed the profits. They donated shares of stock to about 20 representatives in Congress in 1867.

A congressional investigation of the company, spurred by reports in the *New York Sun*, eventually found that the officers of the Union Pacific had taken up to \$23 million in stocks, bonds, and cash. Testimony implicated such well-known and respected federal officials as Vice-President Schuyler Colfax and Congressman James Garfield, who later became president. Although these public figures kept their profits and received little more than a slap on the wrist, the reputation of the Republican Party was tarnished.

**Reading Check**  
**Summarize** How did the railroads affect the growth of cities and industries?



## Major Railroad Lines, 1870–1890



### Interpret Maps

- 1. Human-Environment Interaction** What factor led to rapid growth in Chicago, Minneapolis, and Denver?
- 2. Movement** Why was rail construction concentrated in the East before 1870 and in the West after 1870?

## The Grange and the Railroads

Farmers were especially disturbed by what they viewed as railroad corruption. The Grangers were members of the Grange, a farmers' organization founded in 1867. They began demanding governmental control over the railroad industry.

**RAILROAD ABUSES** Farmers were angry with railroad companies for a host of reasons. They were upset by misuse of government land grants, which the railroads sold to other businesses rather than to settlers, as the government intended. The railroads also entered into formal agreements to fix prices, which helped keep farmers in their debt. In addition, they charged different customers different rates. They often demanded more for short hauls—for which there was no alternative carrier—than they did for long hauls.

**GRANGER LAWS** In response to these abuses by the railroads, the Grangers took political action. They sponsored state and local political candidates, elected legislators, and successfully pressed for laws to protect their interests. In 1871 Illinois authorized a commission “to establish maximum freight and

### Background

Price fixing occurs when companies within an industry all agree to charge the same price for a given service, rather than competing to offer the lowest price.

passenger rates and prohibit discrimination.” Grangers throughout the West, Midwest, and Southeast convinced state legislators to pass similar laws, called Granger laws.

The railroads fought back, challenging the constitutionality of the regulatory laws. In 1877, however, in the case of **Munn v. Illinois**, the Supreme Court upheld the Granger laws by a vote of seven to two. The states thus won the right to regulate the railroads for the benefit of farmers and consumers. The Grangers also helped establish an important principle—the federal government’s right to regulate private industry to serve the public interest.

**INTERSTATE COMMERCE ACT** The Grangers’ triumph was short-lived, however. In 1886 the Supreme Court ruled, in *Wabash v. Illinois*, that a state could not set rates on interstate commerce—railroad traffic that either came from or was going to another state. This overturned their earlier decision in *Munn v. Illinois*. In response to public outrage, Congress passed the **Interstate Commerce Act** in 1887. This act reestablished the right of the federal government to supervise railroad activities and set up a five-member Interstate Commerce Commission (ICC). The ICC’s objective was to make railroad rates fair for all customers by requiring rates to be “reasonable and just.” However, due to poorly defined language in the act and resistance from the railroads, the ICC had difficulty regulating rates. The law had the most success in preventing the railroads from arranging special rates among themselves, which offered consumers some protection.

The final blow to the commission came in 1897. After several court cases challenged the act, the Supreme Court ruled that the ICC could not set maximum railroad rates. Not until 1906, under President Theodore Roosevelt, did the ICC gain the power it needed to be effective. Still, the law was a historic milestone, marking the first time that the federal government had regulated an industry. It served as a model for later attempts.

### Document-Based Investigation Historical Source

#### “The Modern Colossus of (Rail) Roads”

Joseph Keppler drew this cartoon in 1879, featuring the railroad “giants” William Vanderbilt (top), Jay Gould (bottom right), and Cyrus W. Fields (bottom left). The three magnates formed a railroad trust out of their Union Pacific, New York Central, and Lake Shore & Dependence lines. The title of this cartoon is a pun on the Colossus of Rhodes, a statue erected in 282 BC on an island near Greece. According to legend, the 100-foot-tall statue straddled Rhodes’s harbor entrance.

#### Analyze Historical Sources

The reins held by the railroad magnates attach not only to the trains but also to the tracks and the railroad station. What does this convey about the magnates’ control of the railroads?



**Vocabulary**  
consolidation the  
act of uniting or  
combining

**PANIC AND CONSOLIDATION** Although the ICC presented few problems for the railroads, corporate abuses, mismanagement, overbuilding, and competition pushed many railroads to the brink of bankruptcy. Their financial problems played a major role in a nationwide economic collapse known as the panic of 1893.

Economic downturns like the one that occurred in 1893 are part of a cycle of growth and contraction that all industrial societies experience. Economists call this pattern the business cycle. After a period of expansion, during which overall industrial production increases and prices rise, a country will experience a crisis. The crisis will often result in widespread bankruptcy and the closing of many businesses, as happened in 1893. By the end of that year, around 600 banks and 15,000 businesses had failed. By 1895, 4 million people had lost their jobs. An economic crisis will generally be followed by a recession, during which time the country's overall productivity drops. Prices fall, and banks raise interest rates, making it more difficult for many people to repay loans.

The panic of 1893 caused the worst recession in American history up to that time, and it was particularly hard on the railroad industry. By the middle of 1894 a quarter of the nation's railroads had been taken over by financial companies. Large investment firms such as J. P. Morgan & Company reorganized the railroads. As the 20th century dawned, seven powerful companies held sway over two-thirds of the nation's railroad tracks.

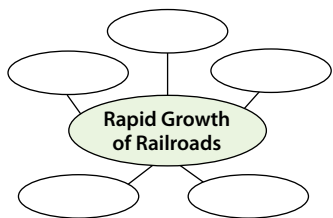
However, no recession lasts forever. In the business cycle, a recession is followed by a period of recovery as new businesses open, production increases, and consumers begin to spend more money. By 1897 the U.S. economy had begun to recover from the downturn. The next decade would witness a new period of rapid expansion and success.

### Reading Check

**Analyze Issues** How did the Grangers, who were largely poor farmers, do battle with the giant railroad companies?

## Lesson 2 Assessment

1. **Organize Information** Create a web diagram and fill in effects of the rapid growth of railroads.



How did the growth of railroads affect people's everyday lives? How did it affect farmers?

2. **Key Terms and People** For each term or person in the lesson, write a sentence explaining its significance.

3. **Make Inferences** Do you think the government and private citizens could have done more to curb the corruption and power of the railroads? Give examples to support your opinion.

### Think About:

- why the railroads had power
- the rights of railroad customers and workers
- the scope of government regulations

4. **Synthesize** The federal government gave land and made loans to the railroad companies. Why was the government so eager to promote the growth of railroads? What effects did this eagerness have on average citizens, such as farmers and workers?

5. **Analyze Motives** Reread "Another Perspective" on railroads. Why do you think that some Americans disliked this new means of transportation?



# Big Business

## The Big Idea

The expansion of industry resulted in the growth of big business.

## Why It Matters Now

Many of the strategies used today in industry, such as consolidation, have their origins in the late 19th century.

## Key Terms and People

Andrew Carnegie

laissez-faire

Social Darwinism

vertical and horizontal integration

J. P. Morgan

John D. Rockefeller

trust

monopoly

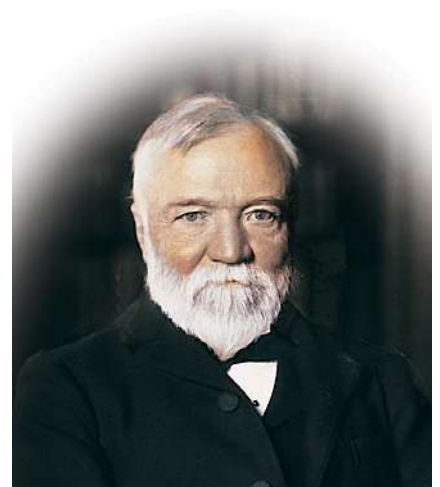
Sherman Antitrust Act

## One American's Story

Born in Scotland to penniless parents, **Andrew Carnegie** came to this country in 1848 at age 12. Six years later he was the private secretary to the local superintendent of the Pennsylvania Railroad. One morning, Carnegie single-handedly relayed messages that unsnarled a tangle of freight and passenger trains. His boss, Thomas A. Scott, rewarded Carnegie by giving him a chance to buy stock. Carnegie's mother mortgaged the family home to make the purchase possible. Soon Carnegie received his first dividend.

*"One morning a white envelope was lying upon my desk, addressed in a big John Hancock hand, to 'Andrew Carnegie, Esquire.' . . . All it contained was a check for ten dollars upon the Gold Exchange Bank of New York. I shall remember that check as long as I live. . . . It gave me the first penny of revenue from capital—something that I had not worked for with the sweat of my brow. 'Eureka!' I cried. 'Here's the goose that lays the golden eggs.'"*

—Andrew Carnegie, from  
*Autobiography of Andrew Carnegie*



Nineteenth-century industrialist Andrew Carnegie gave money to build public libraries, hoping to help others write their own rags-to-riches stories.

Andrew Carnegie was one of the first industrial moguls to make his own fortune. His rise from rags to riches made him a model of the American success story.

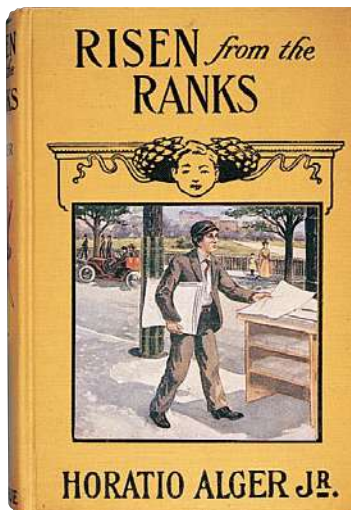
## A Favorable Climate

The economic climate of the United States in the late 1800s was ripe for ambitious individuals like Carnegie to build huge companies and amass great fortunes. Americans of the time believed that a strong work ethic could make someone successful. The business world welcomed new entrepreneurs willing to take risks in search of profits. They were driven by the idea that individuals could better themselves and society through their own efforts.

**BELIEF IN FREE MARKETS** The positive view of entrepreneurship grew out of the American economic system. The U.S. economy is based on a form of capitalism called free enterprise. As in any capitalist economy, individuals and private businesses run most industries. Companies in some capitalistic countries have to follow strict government policies about pricing and wages. However, those in a free enterprise system are free to set their own. Generally, their decisions are driven by such factors as competition and consumer demand.

By the late 1800s most business leaders believed in **laissez-faire** (lěs'ā fār') capitalism. The term laissez-faire is French for "to let do." Laissez-faire capitalism allows companies to conduct business without intervention by the government. Business leaders believed that government regulation would destroy individual self-reliance, reduce profits, and harm the economy. And by and large, the government maintained a hands-off attitude toward business.

Even though business owners generally wanted the government to stay away, at times they still turned to the government for help. Some railroad builders, for example, accepted grants of land and money from the government. Hoping to eliminate foreign competition, many business leaders also were in favor of protective tariffs that the government placed on imported goods.



Popular literature promoted the possibility of rags-to-riches success for anyone who was virtuous and hard-working.

**SOCIAL DARWINISM** Americans understood that there were inequalities in the free enterprise system. Some people became very rich while others remained very poor. But many thinkers believed that inequalities were part of the social order. To explain why some people prospered and others did not, economists, social philosophers, and business leaders embraced the philosophy of **Social Darwinism**. This philosophy adapted the ideas of the British naturalist Charles Darwin and applied them to human society. Darwin had studied plants and animals and concluded that members of a species compete for survival. Those best adapted to their environment thrive and pass their traits to the next generation. Less-suited members gradually die out. Darwin called this process natural selection.

The English philosopher Herbert Spencer used Darwin's biological theories to explain the evolution of human society. Economists found in Social Darwinism a way to justify the doctrine of laissez-faire. Stronger people, businesses, and nations would prosper. Weaker ones would fail. According to Social Darwinists, the market should not be regulated because no one had the right to interfere with this process.

The premise of the survival and success of the most capable naturally made sense to the 4,000 millionaires who had emerged since the Civil War. Because the theory supported the notion of individual responsibility and

**Reading Check**  
Find Main Ideas  
What conditions  
created a favorable  
climate for business  
during the late 1800s?

blame, it also appealed to the Protestant work ethic of many Americans. According to Social Darwinism, riches were a sign of God's favor. Therefore the poor must be lazy or inferior people who deserved their lot in life.

Some people found fault with the attitude of the rich toward the working class. Walter Rauschenbusch, a minister who lived among the poor in New York City, said, "Competitive commerce exalts selfishness to the dignity of a moral principle. It pits men against one another in a gladiatorial game in which there is no mercy and in which ninety percent of the combatants finally strew the arena. . . . If the rich had only what they earned, and the poor had all that they earned, . . . Life would be more sane."

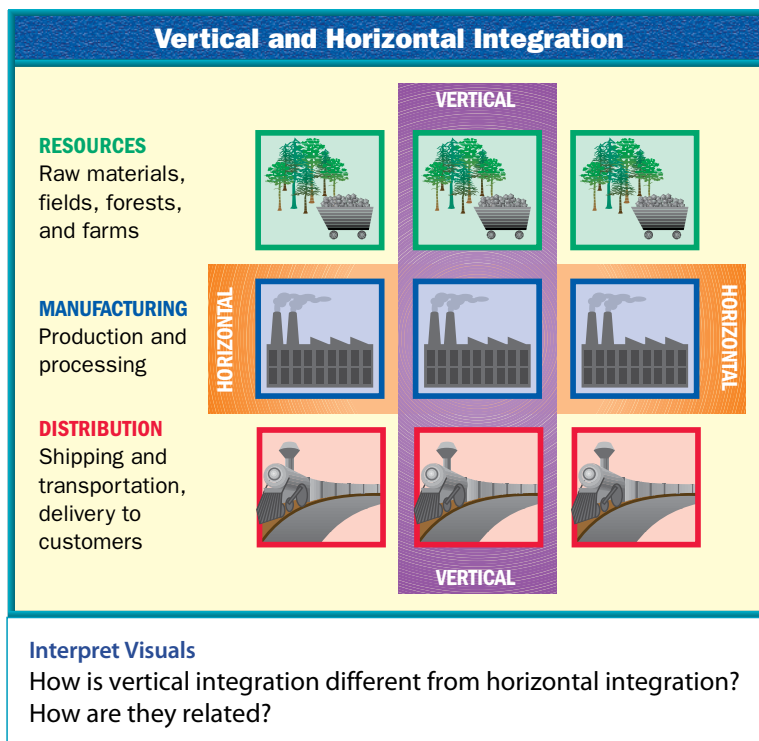
## New Business Strategies

Although some entrepreneurs endorsed the "natural law" in theory, in practice many business owners did everything they could to gain dominance. They tried new ways to maximize profits, get rid of competition, and control production. As they did so, business organizations became more and more complex.

**MAXIMIZING PROFITS** By 1865 Carnegie was so busy managing the money he had earned in dividends that he happily left his job at the Pennsylvania Railroad. He entered the steel business in 1873 after touring a British steel mill and witnessing the awesome spectacle of the Bessemer process in action. By 1899 the Carnegie Steel Company manufactured more steel than all the factories in Great Britain. Carnegie's success was due in part to management practices that he initiated and that soon became widespread. First, he continually searched for ways to make better products more cheaply. He incorporated new machinery and techniques, such as accounting systems that enabled him to track precise costs. Second, he attracted talented people

by offering them stock in the company, and encouraged competition among his assistants.

In addition to improving his own manufacturing operation, Carnegie attempted to control as much of the steel industry as he could. He did this mainly by **vertical integration**. Using this process, he 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 pursued mergers with competing steel producers as a form of **horizontal integration**, a process that joins together companies producing similar products. A merger usually occurred when one corporation bought out the stock of another. Having gained control over his suppliers and having limited his





competition, Carnegie controlled almost the entire steel industry. By the time he sold his business in 1901, Carnegie's companies produced, by far, the largest portion of the nation's steel.

Steel was not the only industry to embrace the business practices that made Carnegie so rich. Chicago meatpackers, for example, used vertical integration to drive their own success. In the 1870s Gustavus Swift, owner of the Swift & Company packing plant, tried to convince railroad manufacturers to build refrigerated boxcars that he could use to ship beef over long distances. The manufacturers refused. So Swift decided to build the cars himself, hiring an engineer to design them, a production company to build them, and a rail line to pull them. Before long he was able to ship meat anywhere in the country, changing the meat industry forever and earning himself a vast fortune. One of Swift's major rivals, Philip Danforth Armour of Armour & Company likewise looked for ways to increase his company's profits. He bought a factory near his packing plant and hired scientists to research new uses for the animal byproducts the plant produced. Before long, Armour was selling a wide range of products besides meat, from soap and glue to leather and brushes.

**ELIMINATING THE COMPETITION** Carnegie made his fortune building a single business. Some tycoons, such as banker **J. P. Morgan**, made theirs by taking over and merging other people's businesses. Morgan created holding companies—corporations that did nothing but buy out the stock of other companies. Morgan used his holding companies to gain control of the railroad, steel, and farm equipment industries. In 1901 he merged the Carnegie Steel Company and other steel companies to form the United States Steel Corporation. It was the world's largest business at the time. Morgan was known for his dedication to efficiency. Although he didn't build his own businesses, many believe that his consolidation methods made some mismanaged and inefficient companies better.

In another approach to mergers, **John D. Rockefeller** formed **trusts**. In a trust, competing companies put control of their businesses under a single

## New Business Organizations

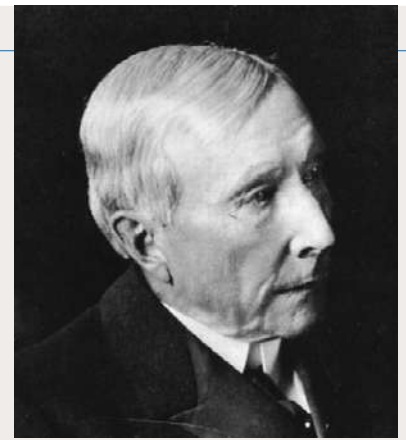
<b>corporation</b>	A business owned by investors who buy part of the company through shares of stock. Selling stock was a way for business owners to raise money to invest back into the company.
<b>monopoly</b>	A single seller of a product, good, or service. Without competition, a company that has a monopoly can raise prices higher or reduce the quality of its products lower than it otherwise might.
<b>trust</b>	Competing companies put control of their businesses under a single group of trustees—people who run the separate companies as one corporation. The trust can manage the companies without owning them.
<b>pool</b>	An arrangement whereby companies in the same industry divide up the businesses. Each takes a share of the market and agrees not to compete for a larger share.
<b>holding company</b>	A corporation that does nothing but buy out the stock of competing companies to strengthen their control over the market. Operates in much the same way as trusts.

## John D. Rockefeller (1839–1937)

At the height of John Davison Rockefeller's power, an associate noted that he "always sees a little farther than the rest of us —and then he sees around the corner."

Rockefeller's father was a flashy peddler of phony cancer cures with a unique approach to raising children. "I cheat my boys every chance I get. . . . I want to make 'em sharp," he boasted.

It seems that this approach succeeded with the oldest son, John D., who was sharp enough to land a job as an assistant bookkeeper at the age of 16. Rockefeller was very proud of his own son, who succeeded him in the family business. At the end of his life, Rockefeller referred not to his millions, but to John D. Jr. as "my greatest fortune."



group of trustees. The trustees run the separate companies as one large corporation. Rockefeller's company, Standard Oil, began as a refinery. He then acquired companies that supplied his business, buying barrel factories, oil fields, oil-storage facilities, pipelines, and railroad cars. These companies were all placed under the control of a trust agreement. This trust allowed Rockefeller to eventually gain total control of the oil industry in America. In 1870 his company processed about three percent of the country's crude oil. Within a decade, Standard Oil controlled 90 percent of the refining business. Businessmen in other industries followed Rockefeller's example. Trusts were formed in the sugar, cottonseed oil, and lead-mining industries.

Sometimes business owners in the same industry would pool their businesses to eliminate competition. The businesses would then be divided amongst the owners. Each owner would take a share of the market and fix prices, agreeing to not compete with the others in the pool.

**FEWER CHOICES** Carnegie, Morgan, and Rockefeller had achieved nearly complete **monopolies**, or complete control over an industry's production, wages, and prices. These monopolies meant that consumers had fewer choices in the marketplace. Without competition, a company that had a monopoly could raise prices on its products or lower quality much more freely than it otherwise might. Consumers either have to accept the company's price for its product or choose not to buy it. For example, Rockefeller drove his competitors out of business by selling his oil at a lower price than it cost to produce it. Then, when he controlled the market, he hiked prices far above original levels. The public had to pay the price because they couldn't buy oil from anyone else. Monopolies also meant that workers had fewer choices in the companies they could work for. If a company paid low wages, a worker could not easily find a better paying job.

**A MIXED LEGACY** Many Americans admired Carnegie, Morgan, Rockefeller, and other "captains of industry." They credited these entrepreneurs with using their business skills to make the American economy more productive and, in turn, stronger. Andrew Carnegie said that he and his fellow tycoons were "the bees that make the most honey, and contribute most to the hive even after they have gorged themselves full."

### Reading Check

Summarize What strategies enabled big businesses to eliminate competition?

Carnegie and other wealthy industrialists felt they had a duty to put their fortunes towards the public good. While they generally opposed financial handouts, they supported philanthropy. In the name of Social Darwinism, they built libraries and funded colleges and other institutions. These institutions provided opportunities for the fittest to succeed, regardless of their financial background. Carnegie explained his philosophy in an 1889 article called “The Gospel of Wealth.” He wrote, “This, then, is held to be the duty of the man of Wealth . . . to consider all surplus revenues which come to him simply as trust funds . . . to produce the most beneficial result for the community.” Carnegie donated about 90 percent of the wealth he accumulated during his lifetime. His fortune still supports the arts and learning today. John D. Rockefeller gave away over \$500 million, establishing the Rockefeller Foundation. His foundation provided funds to found the University of Chicago, and created a medical institute that helped find a cure for yellow fever.

Despite these charitable contributions, some Americans came to view industrialists more as robber barons than as revered “captains of industry.” They believed that these tycoons were taking advantage of workers and consumers. Critics argued that these tycoons profited unfairly by squeezing out competitors and using other tough tactics. Their huge mansions and luxurious lifestyles seemed like ill-gotten rewards.

## Government and Business

For a time, the government was content to allow the laissez-faire system to continue unregulated for fear of harming the economy. Industrialization was raising the standard of living, but income inequality was also increasing. Eventually, the government grew uneasy about the power of big corporations and stepped in to regulate some of the business practices of the industrialists.

**GOVERNMENT REGULATION** The government was concerned that expanding corporations would stifle free competition. In 1890 Congress passed the **Sherman Antitrust Act**, which made it illegal to form a trust that interfered with free trade between states or with other countries. It also prohibited monopolies and other activities that hindered competition.

Prosecuting companies under the Sherman Act was not easy. The act didn’t clearly define terms such as trust. Also, if firms such as Standard Oil felt pressure from the government, they simply reorganized into single corporations. The Supreme Court threw out seven of the eight cases the federal government brought against trusts. Eventually, the government stopped trying to enforce the Sherman Act. The consolidation of businesses continued.

The Sherman Act was also unclear about whether it could outlaw monopolies in the *manufacturing* of a good, as well as in the trade of it. The question had to be decided in 1894 by the Supreme Court. In *United States v. E. C. Knight Co.*, the court ruled that the government could not enforce the Sherman Act against the manufacturing operations of the E. C. Knight Company, which had control of 98 percent of the sugar refining industry. The decision meant that the Sherman Act could do little to stop most monopolies.



**"What a Funny Little Government!"**

This 1900 cartoon—captioned "What a funny little government!"—is a commentary on the power of the Standard Oil empire. John D. Rockefeller holds the White House in his hand.

**Analyze Historical Sources**

What is the cartoonist suggesting by showing the White House in the hands of a tycoon like Rockefeller?

**Reading Check****Draw Conclusions**

Were the Sherman Antitrust Act and other government actions effective in responding to the challenges associated with rapid industrialization? Explain.

**BUSINESS BOOM BYPASSES THE SOUTH** Industrial growth concentrated in the North, where natural and urban resources were plentiful. In contrast, the South was still trying to recover from the Civil War. It was 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. The South remained mostly agricultural, with farmers at the mercy of railroad rates. Entrepreneurs suffered not only from excessive transportation costs, but also from high tariffs on raw materials and imported goods, and from a lack of skilled workers. The post-Reconstruction South seemed to have no way out of economic stagnation. However, growth in forestry and mining, and in the tobacco, furniture, and textile industries, offered hope.

**Lesson 3 Assessment**

- 1. Organize Information** Create a cause and effect chart. For each item in the "Cause" column, list some effects.

Cause	Effects
Laissez-faire capitalism	
Businesses consolidate through mergers	
Big businesses become very powerful	

- 2. Key Terms and People** For each key term or person in this lesson, write a sentence explaining its significance.
- 3. Evaluate** Do you think that the tycoons of the late 19th century are best described as ruthless robber barons or as effective captains of industry?
- Think About:**
- their management tactics and business strategies
  - their contributions to the economy and society
  - their attitude toward competition
- 4. Compare** Compare Andrew Carnegie's business practices to the philosophy of Social Darwinism. Do they support or counter each other? Explain.
- 5. Analyze Effects** How did new business structures such as corporations, pools, trusts, and holding companies lead to the growth of an industrialized economy? What was their impact on consumers and workers?
- 6. Synthesize** How did economic factors limit industrialization in the South?

# The Rise of the Labor Movement

## The Big Idea

The expansion of industry prompted laborers to form unions to better their lives.

## Why It Matters Now

Many of the strategies used today in the labor movement, such as the strike, have their origins in the late 19th century.

## Key Terms and People

Samuel Gompers

collective bargaining

American Federation of Labor (AFL)

Eugene V. Debs

Industrial Workers of the World (IWW)

Mary Harris Jones

## One American's Story

The son of Jewish immigrants, **Samuel Gompers** came to the United States with his parents at age 13. He worked as a cigar maker and joined a local union, eventually becoming its president. Gompers would go on to become a key figure in the labor movement, dedicating his life to helping working Americans. He campaigned for basic trade-union rights, such as the right to picket and to organize boycotts and strikes. His efforts on behalf of workers helped organized labor gain national recognition and respect. Samuel Gompers had this to say in response to the question: *What does labor want?*

*"We want more school-houses and less jails; more books and less arsenals; more learning and less vice; more constant work and less crime; more leisure and less greed; more justice and less revenge; in fact, more of the opportunities to cultivate our better natures, to make manhood more noble, womanhood more beautiful and childhood more happy and bright. . . . These are the demands made by labor upon modern society and in their consideration is involved the fate of civilization."*

—Samuel Gompers, from a speech before the International Labor Congress, 1893



Labor leader Samuel Gompers worked tirelessly to improve working conditions and wages for American workers.

Gompers' ideas were shared by thousands of workers across the country. Soon they would join the rising labor movement to help turn these ideas into reality.

## Labor Unions Emerge

As business leaders merged and consolidated their forces, it seemed necessary for workers to do the same. Although northern wages were generally higher than southern wages, exploitation and unsafe working conditions drew workers together across regions in a nationwide labor movement. Laborers—skilled and unskilled; female and male; black, brown, and white; immigrant and non-immigrant—joined together in unions to try to improve their lot.



This 1917 photograph shows a 14-year-old boy linking bed springs at a factory in Boston, Massachusetts.

**LONG HOURS AND DANGER** One of the largest employers, the steel mills, often demanded a seven-day workweek. Seamstresses, like factory workers in most industries, worked 12 or more hours a day, six days a week. Employees were not entitled to vacation, sick leave, unemployment compensation, or reimbursement for injuries suffered on the job.

Yet injuries were common. In dirty, poorly ventilated factories, workers had to perform repetitive, mind-dulling tasks, sometimes with dangerous or faulty equipment. In 1882 an average of 675 laborers were killed in work-related accidents each week. In addition, wages were so low that most families could not survive unless everyone held a job. Between 1890 and 1910, for example, the number of women working for wages doubled, from 4 million to more than 8 million. Twenty percent of the boys and ten percent of the girls under age 15 also held full-time jobs. Some were as young as five years old. With little time or energy left for school, child laborers forfeited their futures to help their families make ends meet.

Not surprisingly, jobs for women and children paid the lowest wages. The pay was often as little as 27 cents for a child's 14-hour day. In 1899 women earned an average of \$267 a year, nearly half of men's average pay of \$498. In contrast, the very next year Andrew Carnegie made \$23 million—with no income tax.

### Document-Based Investigation Historical Source

#### Sweatshops

In sweatshops, or workshops in tenements rather than in factories, workers had little choice but to put up with the conditions. Sweatshop employment, which was tedious and required few skills, was often the only avenue open to women and children. Jacob Riis described the conditions faced by “sweaters.”

#### Analyze Historical Sources

According to Jacob Riis, how were working conditions for children in sweatshops?

*“The bulk of the sweater’s work is done in the tenements, which the law that regulates factory labor does not reach. . . . In [them] the child works unchallenged from the day he is old enough to pull a thread. There is no such thing as a dinner hour; men and women eat while they work, and the ‘day’ is lengthened at both ends far into the night.”*

—Jacob Riis, from *How the Other Half Lives*



### Vocabulary

**arbitration** a method of settling disputes in which both sides submit their differences to a mutually approved judge

### Reading Check

**Analyze Issues** How did industrial working conditions contribute to the growth of the labor movement?

**EARLY LABOR ORGANIZING** Skilled workers had formed small, local unions since the late 1700s. The first large-scale national organization of laborers, the National Labor Union (NLU), was formed in 1866 by ironworker William H. Sylvis. The refusal of some NLU local chapters to admit African Americans led to the creation of the Colored National Labor Union (CNLU). Isaac Meyers, a caulker from Baltimore, led the CNLU. Nevertheless, NLU membership grew to 640,000. In 1868 the NLU persuaded Congress to legalize an eight-hour day for government workers.

NLU organizers concentrated on linking existing local unions. In 1869 Uriah Stephens focused his attention on individual workers and organized the Noble Order of the Knights of Labor. Its motto was “An injury to one is the concern of all.” Membership in the Knights of Labor was officially open to all workers, regardless of race, gender, or degree of skill. Like the NLU, the Knights supported an eight-hour workday and advocated “equal pay for equal work” by men and women. They saw strikes, or refusals to work, as a last resort and instead advocated arbitration. At its height in 1886, the Knights of Labor had about 700,000 members. Although the Knights declined after the failure of a series of strikes, other unions continued to organize.

**THE POWER OF UNIONS** As more and more workers joined, the unions were able to exert increased power on business leaders. Unions concentrated on bread-and-butter issues—higher wages, shorter hours, better working conditions. Many union leaders felt that the best way to obtain these benefits was through **collective bargaining**. In collective bargaining, union officials representing the workers negotiate with management. If negotiation fails, workers may strike or organize a boycott to support union demands.

Some businesses had union contracts that stated that only members of the union could work there. In order to be hired at such a business, which was called a closed shop, workers had to join the union. An open shop could hire anyone. Even the threat of a strike at a closed shop could give a union much more negotiating power with management.

With increased union membership also came increased political power. Each union member was a potential voter. Unions could leverage this fact to influence sympathetic politicians. These politicians would in turn draft and pass laws favorable to labor. In addition, unions could use their influence among members to raise money for and run their own political candidates. Still, divergent ideas among union leadership managed to keep some unions from working together.

## Union Movements Diverge

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

**CRAFT UNIONISM** One form of labor organization was craft unionism, which included skilled workers from one or more trades. Samuel Gompers led the Cigar Makers’ International Union to join other craft unions in 1886. The **American Federation of Labor (AFL)**, with Gompers as its president, was



In New York City's Union Square in 1914, IWW members protest violence against striking coal miners in Colorado.

able to reach written agreements on wages, hours, and working conditions. Unlike the Knights of Labor, the AFL used strikes as a major tactic. Successful strikes helped the AFL win higher wages and shorter workweeks. Between 1890 and 1915, the average weekly wages in unionized industries rose from \$17.50 to \$24. The average workweek fell from almost 54.5 hours to just under 49 hours.

**INDUSTRIAL UNIONISM** Some labor leaders felt that unions should include all laborers—skilled and unskilled—in a specific industry. This concept captured the imagination of **Eugene V. Debs**, who attempted to form such an industrial union—the American Railway Union (ARU). Most of the new union's members were unskilled and semiskilled laborers, but skilled engineers and firemen joined too. Debs believed that the strike was “the weapon of the oppressed.” In 1894 the new union won a strike for higher wages. Within two months, its membership climbed to 150,000, dwarfing the 90,000 enrolled in the four skilled railroad brotherhoods. Though the ARU, like the Knights of Labor, never recovered after the failure of a major strike, it added to the momentum of union organizing.

**SOCIALISM AND THE IWW** In an attempt to solve the problems faced by workers, Eugene Debs and some other labor activists eventually turned to socialism. Socialism is an economic and political system based on government control of business and property and equal distribution of wealth. Socialism carried to its extreme form is communism, as advocated by the German philosopher Karl Marx. Socialism would result in the overthrow of the capitalist system. Most socialists in late-19th-century America drew back from this goal, however, and worked within the labor movement to achieve better conditions for workers. In 1905 a group of radical unionists and socialists in Chicago organized the **Industrial Workers of the World (IWW)**, or the Wobblies. Headed by William “Big Bill” Haywood, the Wobblies included miners, lumberers, and cannery and dock workers. Unlike the ARU, the IWW welcomed African Americans, but membership never topped 100,000. Its only major strike victory occurred in 1912. Yet the Wobblies, like other industrial unions, gave dignity and a sense of solidarity to unskilled workers.



### Reading Check

**Compare and Contrast** How did craft unions and industrial unions differ?

**OTHER LABOR ACTIVISM IN THE WEST** In April 1903 about 1,000 Japanese and Mexican immigrant workers organized a successful strike in the sugar-beet fields of Ventura County, California. They formed the Sugar Beet and Farm Laborers' Union of Oxnard. In Wyoming, the State Federation of Labor supported a union of Chinese and Japanese immigrant miners who sought the same wages and treatment as other union miners. These small, independent unions increased both the overall strength of the labor movement and the tension between labor and management.

## 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** In July 1877 workers for the Baltimore and Ohio Railroad (B&O) struck to protest their second wage cut in two months. The work stoppage spread to other lines. Most freight and even some passenger traffic, covering over 50,000 miles, was stopped for more than a week. Several state governors asked President Rutherford B. Hayes to intervene, saying that the strikers were impeding interstate commerce. Federal troops ended the strike.

**THE HAYMARKET AFFAIR** Encouraged by the impact of the 1877 strike, labor leaders continued to press for change. On the evening of May 4, 1886, 3,000 people gathered at Chicago's Haymarket Square to protest police brutality. A striker had been killed and several had been wounded at the McCormick Harvester plant the day before. Rain began to fall at about 10 o'clock, and the crowd was dispersing when police arrived. Then someone tossed a bomb into the police line. Police fired on the workers. Seven police officers and several workers died in the chaos that followed. No one ever learned who threw the bomb, but the three speakers at the demonstration and five other radicals were charged with inciting a riot. All eight were convicted; four were hanged and one committed suicide in prison. The three surviving men were later pardoned by the governor of Illinois. He justified the pardon because he believed that the accused had not received a fair trial. After Haymarket, the public began to turn against the labor movement.

**THE HOMESTEAD STRIKE** Despite the violence and rising public anger, workers continued to strike. On June 29, 1892, after company president Henry Clay Frick announced his plan to cut wages, workers at the Carnegie Steel Company's Homestead plant in Pennsylvania called a strike. Frick hired armed guards from the Pinkerton Detective Agency to protect the plant so that he could hire scabs, or strikebreakers, to keep it operating. In a pitched battle, at least three detectives and nine workers died. The steelworkers forced out the Pinkertons and kept the plant closed until the Pennsylvania National Guard arrived on July 12. The strike continued until November, but by then the union had lost much of its support and gave in to the company. It would take 45 years for steelworkers to mobilize once again.



**THE PULLMAN COMPANY STRIKE** Strikes continued in other industries, however. During the panic of 1893 and the economic depression that followed, the Pullman company laid off more than 3,000 of its 5,800 employees. It cut the wages of the rest by 25 to 50 percent, without cutting the cost of its employee housing. After paying their rent, many workers took home less than \$6 a week. A strike was called in the spring of 1894, when the Pullman company failed to restore wages or decrease rents. Eugene Debs asked for arbitration, but Pullman refused to negotiate with the strikers. So the ARU began boycotting Pullman trains.

After Pullman hired strikebreakers, the strike turned violent. President Grover Cleveland sent in federal troops. In the bitter aftermath, Debs was jailed. Pullman fired most of the strikers, and the railroads blacklisted many others, so they could never again get railroad jobs.

**WOMEN ORGANIZE** Although women were barred from many unions, they united behind powerful leaders to demand better working conditions, equal pay for equal work, and an end to child labor. Perhaps the most prominent organizer in the women's labor movement was **Mary Harris Jones**. Jones supported the Great Strike of 1877 and later organized for the United Mine Workers of America (UMW). She endured death threats and jail with the coal miners, who gave her the nickname Mother Jones. In 1903, to expose the cruelties of child labor, she led 80 mill children—many with hideous injuries—on a march to the home of President Theodore Roosevelt. Their crusade influenced the passage of child labor laws.

— BIOGRAPHY —



*Eugene V. Debs* (1855–1926)

Born in Indiana, Eugene V. Debs left home at the age of 14 to work for the railroads. In 1875 he helped organize a local lodge of the Brotherhood of Locomotive Firemen. After attempts to unite the local railroad brotherhoods failed, Debs organized the American Railway Union.

While in prison following the Pullman strike in 1894, Debs read the works of Karl Marx. He became increasingly disillusioned with capitalism. He became a spokesperson for the Socialist Party of America and was its candidate for president five times. In 1912 he won about 900,000 votes—an amazing 6 percent of the total.



*Mother Jones* (1830–1930)

Mary Harris “Mother” Jones was a native of Ireland who immigrated to North America as a child. She became involved in the American labor movement after receiving assistance from the Knights of Labor. According to a reporter who followed “the mother of the laboring class” on her children’s march in 1903, “She fights their battles with a Mother’s Love.” Jones continued fighting until her death at age 100.

Jones was definitely not the kind of woman admired by industrialists. “God almighty made women,” she declared, “and the Rockefeller gang of thieves made ladies.”



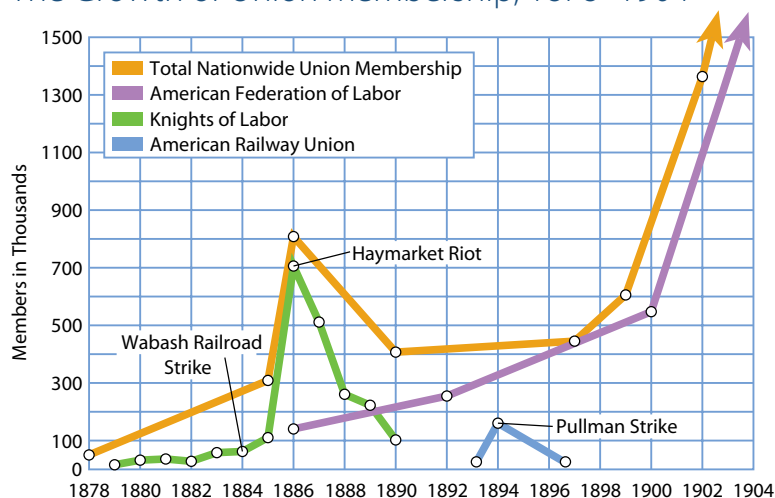
The fire department's ladders reached only to the sixth floor, two floors below the burning Triangle Shirtwaist Company.

Other organizers also achieved significant gains for women. In 1909 Pauline Newman, just 16 years old, became the first female organizer of the International Ladies' Garment Workers' Union (ILGWU). A garment worker from the age of eight, Newman also supported the "Uprising of the 20,000." This 1909 seamstresses' strike won labor agreements and improved working conditions for some strikers.

The public could no longer ignore conditions in garment factories after a fire broke out at the Triangle Shirtwaist factory in New York City on March 25, 1911. The fire spread swiftly through the oil-soaked machines and piles of cloth, engulfing the eighth, ninth, and tenth floors. As workers, mostly immigrant women, attempted to flee, they discovered that the company had locked all but one of the exit doors to prevent theft. The unlocked door was blocked by fire. The factory had no sprinkler system, and the single fire escape collapsed almost immediately. In all, 146 women died. Some were found huddled with their faces raised to a small window. Public outrage flared after a jury acquitted the factory owners of manslaughter. In response, the state of New York set up a task force to study factory working conditions.

During the Paterson Silk Strike of 1913, women actually gained a place among male union leadership. Encouraged by the IWW, local leaders, such as Italian immigrant Carrie Golzio and Jewish immigrant Hannah Silverman, held "women only" meetings for female weavers. The silk workers were demanding a halt to the new four-loom system, which required a worker to run four room-sized looms, instead of two. For nearly five months, striking

### The Growth of Union Membership, 1878–1904



#### Interpret Graphs

1. Which union's membership increased in 1889–1890?
2. What effect(s) did the Haymarket Riot have on union membership?

workers shut down all 300 silk mills and dye houses in Paterson, New Jersey, the center of the American silk industry. Even though the strike was ultimately a failure, the strikers did manage to put aside their differences in gender, ethnicity, and skill level to unite for a common cause.

**MANAGEMENT AND GOVERNMENT PRESSURE UNIONS** The more powerful the unions became, the more employers came to fear them. Management refused to recognize unions as representatives of the workers. Many employers forbade union meetings and fired union members. They also forced new employees to sign “yellow-dog contracts,” swearing that they would not join a union.

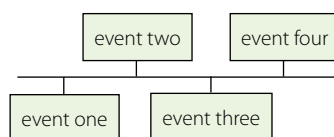
Business leaders, mainly in the South, also took advantage of state laws that allowed them to hire prison laborers at much lower wages than free laborers. In Tennessee, this led to the Coal Creek Saga. When mine owners at Coal Creek replaced free workers with prisoners, armed miners, over the course of a year, repeatedly attacked the company’s buildings, freeing hundreds of convicts. Although the uprising was ultimately put down in 1892, and many of the armed miners arrested, the events did fuel public outrage. By 1896 Tennessee ended its practice of allowing businesses to hire prison laborers.

Finally, industrial leaders, with the help of the courts, turned the Sherman Antitrust Act against labor. All a company had to do was say that a strike, picket line, or boycott would hurt interstate trade, and the state or federal government would issue an injunction against the labor action. Legal limitations made it more and more difficult for unions to be effective. Despite these pressures, workers—especially those in skilled jobs—continued to view unions as a powerful tool. By 1904 the AFL had about 1,700,000 members in its affiliated unions. By the eve of World War I, AFL membership would climb to over 2 million.

**Reading Check**  
Summarize What factors made the Triangle Shirtwaist fire so lethal?

#### Lesson 4 Assessment

1. **Organize Information** Make a timeline of the notable achievements and setbacks of the labor movement between 1876 and 1913.



In what ways did strikes threaten industry?

2. **Key Terms and People** For each term or person in the lesson, write a sentence explaining its significance.

3. **Evaluate** What influence do you think unions and labor leaders had in improving working conditions and wages for American workers?

**Think About:**

- their tactics and strategies
- their organizational abilities
- their influence on public opinion

4. **Make Inferences** How might things have turned out differently if Eugene Debs had succeeded in pushing for arbitration before the Pullman Strike?
5. **Hypothesize** If the government had supported unions instead of management in the late 19th century, how might the lives of workers have been different?



# Module 12 Assessment

## Key Terms and People

For each term or person below, write a sentence explaining its connection to the industrialization of the late 19th century.

1. Thomas Alva Edison
2. Alexander Graham Bell
3. George M. Pullman
4. transcontinental railroad
5. Interstate Commerce Act
6. Andrew Carnegie
7. Sherman Antitrust Act
8. Samuel Gompers
9. American Federation of Labor (AFL)
10. Mary Harris Jones

## Main Ideas

Use your notes and the information in the module to answer the following questions.

### The Expansion of Industry

1. How did the growth of the steel industry influence the development of other industries?
2. What effects did the introduction of mechanical farming equipment have on some rural areas?
3. In what ways did the invention of the telephone impact the United States?
4. How did inventions and developments in the late 19th century change the way people worked?

### The Age of the Railroads

5. What impact did Cornelius Vanderbilt have on transportation networks in the United States?
6. What affect did the principles of supply and demand have on businesses and industries during this time period?
7. How did railroad owners use Crédit Mobilier to make huge, undeserved profits?
8. Why did people, particularly farmers, demand regulation of the railroads in the late 19th century?

9. Why were attempts at railroad regulation often unsuccessful?

## Big Business

10. How did American economic principles and the ideas of Social Darwinists encourage the growth of big business?
11. Why did business leaders oppose government regulation?
12. Why were business leaders such as John D. Rockefeller called robber barons?
13. Why did the South industrialize more slowly than the North did?

## The Rise of the Labor Movement

14. Why did workers form unions in the late 19th century?
15. What factors limited the success of unions?
16. What were the results of the Homestead Strike for steelworkers?
17. How was the Paterson Silk Strike different from other labor strikes?

## Critical Thinking

1. **Categorize** In a chart, list what you see as the overall costs and benefits of industrialization.

Industrialization	
Costs	Benefits

2. **Develop Historical Perspective** In 1902 George Baehr, head of the Philadelphia and Reading Railway Company, said, "The rights and interests of the labor man will be protected and cared for not by the labor agitators but by the Christian men to whom God in his infinite wisdom has given the control of the property interests of the country." What bias does this statement reveal? How does Baehr's view reflect Social Darwinism?

# Module 12 Assessment, continued

3. **Identify Problems** Consider the problems that late-19th-century workers faced and the problems that workers face today. How important do you think unions are for present-day workers? Support your answer.
4. **Compare** In 1903, Mother Jones led a march of 80 children to expose the cruelties of child labor. In 1911, 146 women died in the Triangle Shirtwaist factory fire. How did the government respond to each of these events?
5. **Evaluate** Think about all of the tactics used by unions. Which tactics do you think were the most successful?
6. **Synthesize** How did the growth of capitalism and industrialization affect American democracy in the late 1800s? Consider such factors as the debate over government involvement in the economy, the role of labor unions in politics, and the increase in immigration in your answer.

## Engage with History

Imagine that you are a journalist during the industrial age. Write a newspaper editorial about the Great Strike of 1877, supporting the position of either the railroad owners or the striking workers. Be sure to discuss the effects of railroad expansion and business consolidation on society and the economy and how they support your point of view.

## Focus on Writing

Imagine you are a union leader in a factory. If your demands for better working conditions are not met, all of the employees will stop work and go on strike. Write a persuasive letter in which you urge your employer to adopt specific reforms to improve working conditions.

## Multimedia Activity

In a small group read and discuss the “One American’s Story” at the beginning of Lesson 1. Consider the following question: What qualities did Pattillo Higgins have that made him successful? Then make a poster describing Pattillo Higgins’s personal qualities and how they helped him to achieve his dream. What present-day figures share Higgins’s traits? Add images of these people, with captions, to the poster and display it in your classroom.