

Section 1: The Second Industrial Revolution

STEEL AND RAILROADS

America's **Second Industrial Revolution** started in the late 1800s. The new **Bessemer process** reduced the amount of time it took to make steel. The price of steel dropped because of this innovation. This made the steel industry an important part of the revolution.

Cheaper, more available steel led to more railroad building. Other changes made train travel safer and smoother for passengers. Trains helped strengthen the economy by moving people and goods to their destinations quickly and inexpensively.

USE OF OIL AND ELECTRICITY

In the 1850s scientists figured out how to turn crude oil into kerosene. Kerosene was used for both heat and light. As a result, the demand for oil exploded. In 1859 Edwin L. Drake's Titusville, Pennsylvania, oil well started producing 20 barrels of oil a day. Oil quickly became big business in Pennsylvania. Oil was also important in Ohio and West Virginia.

RUSH OF INVENTIONS

Thomas Alva Edison was an inventor. In fact, Edison was so productive that he eventually held more than 1,000 **patents** to his inventions.

Edison experimented with electricity. He realized it offered hope as a source of light and power. In 1879 Edison and his assistants created the electric lightbulb. To create a market for his lightbulb, Edison built a power plant to supply industries with electricity. In the late 1880s, George Westinghouse built a power plant that could send electricity far distances to faraway markets. With the help of Edison and Westinghouse, the use of electricity in homes and businesses boomed.

Technological advances also changed the way people communicated. First, telegraphs made longdistance communication possible. Then in 1876 inventor **Alexander Graham Bell** unveiled the telephone. By 1900 almost 1.5 million telephones were in operation.

The late nineteenth century also saw changes in transportation. The invention of a gasoline-powered engine made automobiles possible. It also allowed **Wilbur and Orville Wright** to invent the airplane.

Section 2: Big Business

THE GROWTH OF BIG BUSINESS

In the late 1800s entrepreneurs began to form **corporations**. A corporation is owned by people who buy shares of stock in that corporation. Stockholders share the corporation's profits. But if the corporation fails, stockholders lose the money that they invested. Entrepreneurs could spread the risk of loss across all the stockholders.

BUSINESS LEADERS

One successful entrepreneur of the late 1800s was **Andrew Carnegie**. He made money in several industries, but he focused on steel. Carnegie bought all of the businesses involved in making steel. This process is called **vertical integration**.

John D. Rockefeller made his fortune in oil. Like Carnegie, he used vertical integration. He also used **horizontal integration**, buying out most of his competitors. He grouped his companies into a **trust** in an effort to control oil production and prices.

Leland Stanford was another successful business leader of the time. He made money selling mining equipment to miners. He also helped found the California Central Pacific railroad.

SOCIAL DARWINISM

In the late 1800s many people believed in **social Darwinism**. Charles Darwin proposed that in nature, the law was "survival of the fittest." Social Darwinists believed the same was true of humans-those who got rich were the fittest.

Other wealthy business leaders claimed that the rich had a duty to help the poor. As a result, some leaders gave millions of dollars to charities.

THE ANTITRUST MOVEMENT

Big business caused problems for small businesses. A big business would lower its prices until small businesses, unable to offer the same low prices, went bankrupt. Consumers then had to pay higher prices because there was no longer any competition.

Americans demanded that Congress pass laws to control **monopolies** and trusts. Congress finally passed the **Sherman Antitrust Act**. However the act was weak and did little to curb corporations.

Section 3: Industrial Workers

THE NEW WORKPLACE

During the Second Industrial Revolution, machines did more and more work. The unskilled workers who ran the machines could not complain about conditions, for they knew they could be replaced.

In the early 1880s **Frederick W. Taylor** wrote a book that took a scientific look at how businesses could increase profits. One way was to ignore workers and their needs. As a result, conditions for workers got worse.

LABOR UNIONS

Workers began to form labor unions. The **Knights of Labor** started out as a secret organization. However by the end of the 1870s, under the leadership of **Terence V. Powderly**, the Knights became a national labor union. The Knights included both skilled and unskilled members. The **American Federation of Labor**, under the leadership of **Samuel Gompers**, was different from the Knights of Labor. It organized national unions, and its members were all skilled workers.

Workers hoped that if they acted together-that is, if they used **collective bargaining**-they might actually be able to improve pay and working conditions.

Many women participated in unions. **Mary Harris Jones**, for example, helped organize strikes and educate workers.

THE HAYMARKET RIOT

In 1886 thousands of Chicago union members went on strike. After police killed two strikers, workers met at Haymarket Square to protest the killings. Someone threw a bomb, and officers fired into the crowd. The **Haymarket Riot** ended with more than 100 people killed or wounded.

LABOR STRIKES

On June 29, 1892, at a Carnegie steel plant in Homestead, Pennsylvania, the **Homestead Strike** began. Workers protested the introduction of new machinery and the loss of jobs. It ended in violence and death, and the union was defeated. Two years later, the **Pullman Strike** over layoffs

and pay cuts also ended in bloodshed. President Grover Cleveland sent federal troops to break the strike.