TELESCOPING THE TIMES *A New Industrial Age*

READ & TAKE NOTES - QUIZ

***CHAPTER OVERVIEW** Technological innovations and the growth of the railroad industry help fuel an industrial boom. Some business leaders follow corrupt practices, and workers, suffering harsh working conditions, try to organize.*

1 The Expansion of Industry

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

As settlement continued in the West, the nation was being transformed by vast changes in technology. Fuel—in the form of kerosene refined from oil or coal—helped spur growth. So did plentiful supplies of iron. Iron became even more useful when the Bessemer process, developed about 1850, allowed workers to efficiently turn it into steel. With the open-hearth method, devised in 1886, even more steel was produced.

Steel came to be used in railroads, in farm tools such as the plow and reaper, and to make cans for preserving food. Engineers also used steel to make the new bridge connecting New York City and Brooklyn and to build skyscrapers.

Thomas Alva Edison established a research laboratory in 1876 in order to develop new inventions. He devised an incandescent light and began to organize power plants to generate electricity. Cities built electric railways, and businesses built factories powered by electricity.

The typewriter (1867) and the telephone (1876) appeared for the first time. These and other inventions changed daily life. More women began to work in offices; by 1910, women were about 40 percent of the clerical work force. The average work week decreased by about ten hours, and people enjoyed more leisure time.

2 The Age of the Railroads

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

By 1890, rail lines totaled more than 200,000 miles. But building and running the railroads was difficult and dangerous work for thousands of workers. By 1888, more than 2,000 railroad workers had died and another 20,000 had been injured. Workers earned very little—and Asians and African Americans less than white workers.

The railroads helped link the nation. Schedules were difficult to maintain, however, as each community set its own time standard. So, in 1883, the railroads and many towns began using four standard time zones.

Railroads stimulated growth of the iron, steel, coal, lumber, and glass industries. They also helped towns and cities grow. George Pullman built a factory to make railroad sleeping cars. As demand for his cars rose, he built a large town south of Chicago to house the workers he needed. While the housing was of good quality, Pullman tried to control his workers' lives. They conducted a violent strike in 1894.

Some business practices led to corruption. In the Crédit Mobilier scandal of 1868, some officers of the Union Pacific used trickery to earn millions for themselves. They also gave stock to some government officials to buy silence.

These scandals helped fuel the anger of the Grangers, farmers who wanted to limit rail companies' power. They persuaded some states to pass laws regulating railroad rates. In 1877, the Supreme Court said government could regulate industry for the public good. Congress passed the Interstate Commerce Act in 1887, but the commission it created was not strong enough to control the railroads.

The depression of 1893 and 1894 changed the industry. Many railroads failed, and a few survivors seized many of the rest. By 1900, seven companies owned most of the nation's railways.

3 Big Business and Labor

***MAIN IDEA** The expansion of industry resulted in the growth of big business and prompted laborers to form unions to better their lives.*

Consolidation occurred in other industries as well. Andrew Carnegie built a giant steel-producing firm. Carnegie used cost-saving technology, strict accounting, and effective managers. He bought out competitors and companies that provided raw materials or transportation of his goods.

Studying the success of business leaders like Carnegie helped spur an intellectual movement called Social Darwinism. Drawing on Charles Darwin's ideas of evolution, Social Darwinists said that government should allow free competition in business to allow the best individuals to succeed. Most ordinary citizens could support this idea. It appealed to their work ethic and sense of personal responsibility.

Business leaders tried to gain control over an industry to ensure rising profits. Some used mergers to acquire other companies. If a firm controlled all the competition in an industry, it held a monopoly and could dictate business practices. J. P. Morgan became the largest steel producer by setting up a holding company. This kind of company bought out the stock of other companies. John D. Rockefeller controlled the oil refining industry by using trusts, in which different companies agreed to work together. Critics called such practices unfair to consumers and labeled business leaders as "robber barons."

In 1890, Congress decided to act and passed the Sherman Antitrust Act. It outlawed trusts, but the law was difficult to enforce, and the Supreme Court did not support it.

While industry boomed in the North, the South stayed agriculturally and economically depressed. Only industries such as mining, tobacco, and textiles grew. The devastation of the Civil War, lack of capital, and lack of urban centers were contributing factors.

Workers in these growing industries worked long hours in dangerous conditions for low wages. Wages were so low that all family members, including women and children, had to work. To improve their status, many workers began to organize into unions.

The National Labor Union, formed in 1866, persuaded the government to adopt an eight-hour day in government offices. The Knights of Labor pushed for an eight-hour day and equal pay for women. The American Federation of Labor (AFL) won higher wages and shorter work weeks for its members, skilled workers. Other unions organized unskilled workers. Some included women and African Americans. Japanese and Mexican workers also formed unions in the West.

Industry and government fought the unions. A great strike in 1877 stalled the nation's railroads for a week. Some cities erupted in riots. President Rutherford B. Hayes ordered the strikers to return to work. Labor organizers continued to try to enlist workers. Then a mass meeting in Chicago's Haymarket section became a riotous battle between police and workers. Steelworkers in Homestead, Pennsylvania, shut a Carnegie Steel plant until state troops allowed management to reopen the mill with strikebreakers. The strike continued, but eventually the strikers had to give in. A strike at Pullman's railcar factory in 1894 also resulted in violence and federal troops being brought in. All the workers lost their jobs.

Women labor organizers included Mary Harris "Mother" Jones and Pauline Newman, who organized garment workers. In 1911, a fire broke out in a clothing factory. Almost 150 women workers died, in part because they had been locked inside. The public was outraged and some reforms favoring workers were passed.

Business leaders used many tactics to prevent workers from organizing. They banned union meetings or fired union workers. When strikes did occur, some asked the courts to end them, saying that they violated the Sherman Antitrust Act by harming interstate commerce. By 1910, union membership was down to five percent of workers.