

The North's Economy

Essential Question

What innovations in industry, travel, and communications changed the lives of Americans in the 1800s?

Reading Guide

Content Vocabulary

clipper ship (p. 390)

telegraph (p. 391)

Morse code (p. 392)

Academic Vocabulary

innovation (p. 389) transform (p. 391)

Key People

Elias Howe (p. 389)

Robert Fulton (p. 390)

Peter Cooper (p. 390)

Samuel Morse (p. 391)

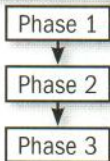
John Deere (p. 393)

Cyrus McCormick (p. 393)

Reading Strategy

Taking Notes As you read, use the diagram below to describe the three phases of the development of industrialization in the North.

Development of Industrialization

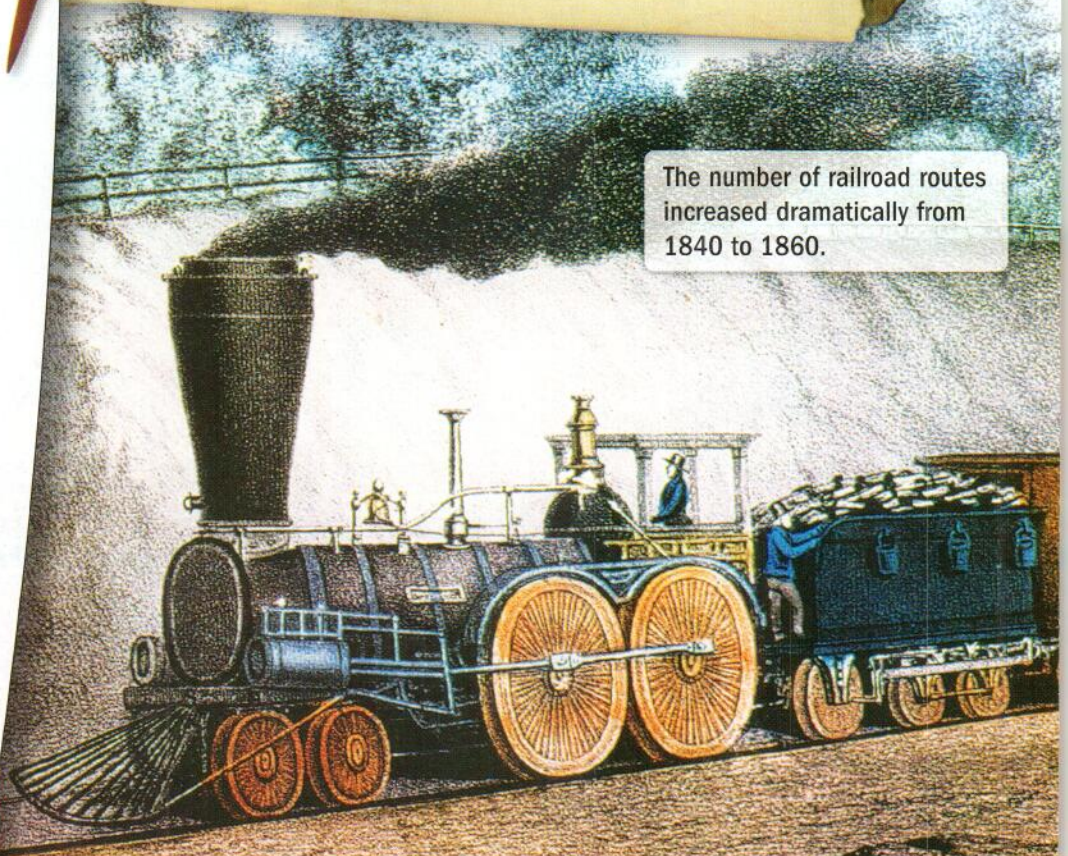


American Diary

Railroad travel in the mid-1840s was uncomfortable. English novelist Charles Dickens described what it was like to travel on a train. "There is a great deal of jolting, a great deal of noise, a great deal of wall, not much window, a locomotive engine, a shriek, and a bell. The cars are like shabby omnibusses, but larger; holding thirty, forty, fifty people. . . . In the center of the carriage there is usually a stove, fed with charcoal . . . which is for the most part red-hot. It is insufferably close."

—from *American Notes for General Circulation*

The number of railroad routes increased dramatically from 1840 to 1860.



Technology and Industry

Main Idea Industry, travel, and communications greatly expanded during the 1800s.

History and You How often do you use e-mail or text messaging during any one day? Read to learn about the invention of the telegraph, which greatly improved communications in the 1800s.

Early trains differed from and offered few of the comforts of modern-day trains. They were noisy and often dirty. As Charles Dickens noted, they also provided a jolty ride. Locomotives were part of the wave of industrialization during the 1800s. **Innovations**—new ideas or methods—in industry and technology began changing the way Americans worked, traveled, and communicated.

Industrialization

The industrialization of the North developed in three phases. In the first phase, manufacturers made products by dividing the tasks involved among the workers. For example, one worker would spin thread all day, and another would weave cloth. This was faster than having one

person spin and then weave. During the second phase, manufacturers built factories to bring specialized workers together. Products could be made more quickly than before.

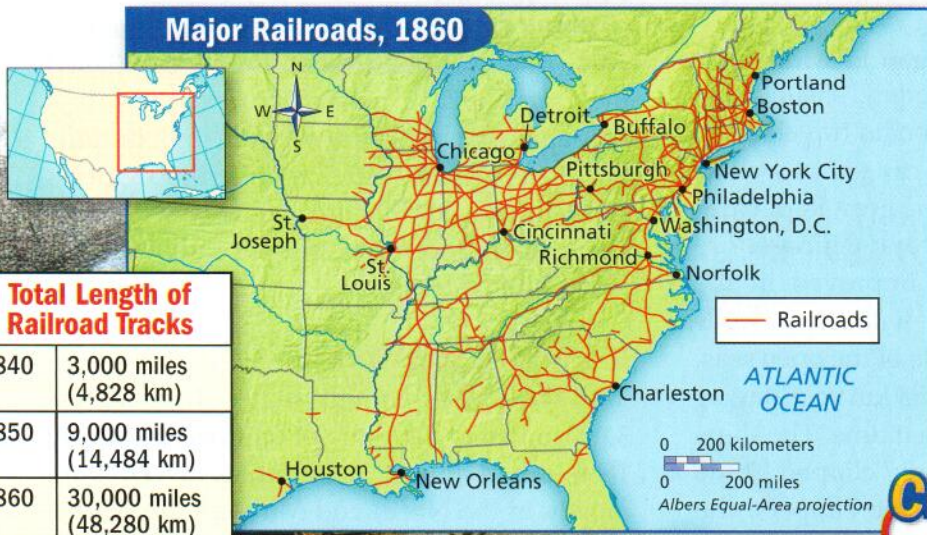
In the third phase, factory workers used machinery to perform some of their work. Many of the new machines ran on water-power or steam power. For example, power-driven looms took over the task of weaving. The worker's job changed from weaving to tending the machine. This change produced more fabric in less time.

Mass production of cotton textiles began in New England in the early 1800s. **Elias Howe** invented the sewing machine in 1846. Using this machine and machine-made fabrics, workers produced clothing on a large scale. Other types of industries developed during the same period. By 1860, the Northeast's factories produced at least two-thirds of the country's manufactured goods.

Improved Transportation

Transportation improvements contributed to the success of America's new industries. Between 1800 and 1850, construction crews built thousands of miles of roads and canals.

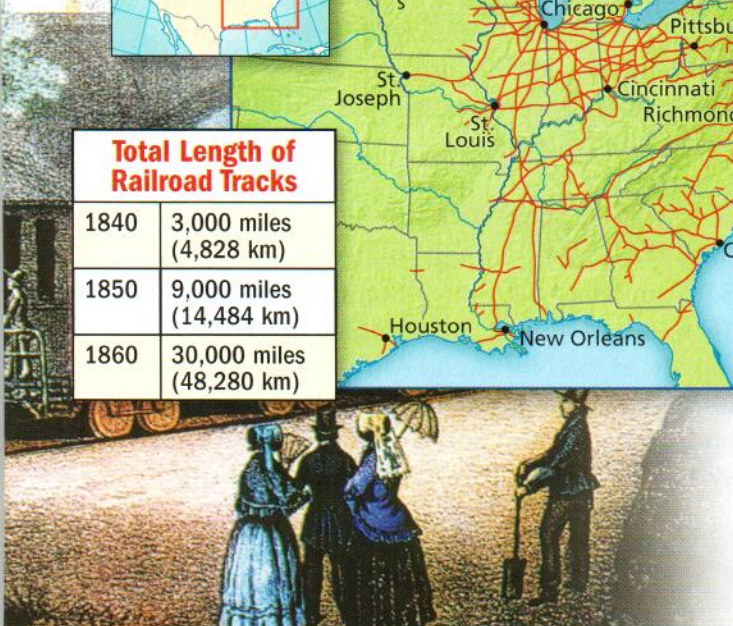
Primary Source Railroad Expansion, 1860



Making Tracks Trains were important not only for transporting people across the country, but they also allowed goods to be shipped greater distances than ever before. Beginning in the early 1800s, industrialization and technology began to change the way Americans worked, traveled, and communicated.

Critical Thinking

Making Inferences What region might have an advantage for transporting goods and people more easily?

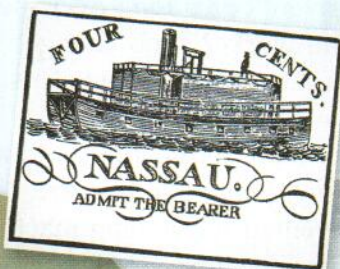


Powered by Steam In 1807 Robert Fulton launched his first steamboat, the *Clermont*, on the Hudson River. The first upriver voyage on the Mississippi, from New Orleans to Pittsburgh, was made in 1815. Within a few years, a large fleet of steamboats traveled on the Mississippi and its tributaries. Steamboats revolutionized transportation and played a large part in the settling of the Midwest.

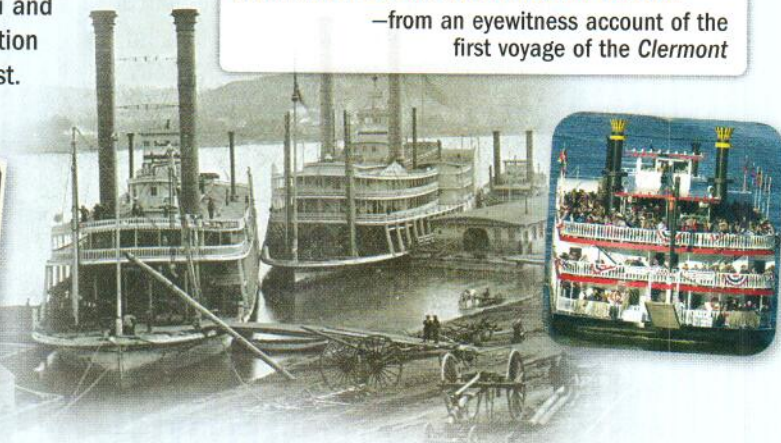
“From every point on the river whence the boat, announced by the smoke of its chimney, could be seen, we saw the inhabitants collect; they waved their handkerchiefs and hurrahed for Fulton.”

—from an eyewitness account of the first voyage of the *Clermont*

Robert Fulton's *Clermont* ▼



▲ Ticket for the first steam ferry from Manhattan to Brooklyn in 1814



▲ Steamboats congregated in great numbers at Cincinnati, a major river port, in the 1800s. Today, Cincinnati celebrates that heritage with a yearly festival (above far right).

Canals opened new shipping routes by connecting many lakes and rivers. Upstream travel against the current was extremely difficult though. That changed in 1807, when inventor **Robert Fulton** demonstrated a reliable steamboat. Steamboats could carry goods and passengers more cheaply and quickly along inland waterways than flatboats or sail-powered vessels.

In the 1840s, builders began to widen and deepen canals to accommodate steamboats. By 1860 about 3,000 steamboats traveled the country's major rivers and canals, as well as the Great Lakes, spurring the growth of cities such as Cincinnati, Buffalo, and Chicago.

Sailing ships also were improved in the 1840s. The **clipper ships**—with sleek hulls and tall sails—were the pride of the open seas. They could sail 300 miles (483 km) per day, as fast as most steamships at that time. The ships got their name because they “clipped” time from long journeys. Before the clippers, the voyage from New York to Great Britain took about 21 to 28 days. A clipper ship could usually make that trip in half the time.

Locomotives

The development of railroads in the United States began with short stretches of tracks to connect mines with nearby rivers. Horses, rather than locomotives, pulled the early trains. The first steam-powered passenger locomotive, the *Rocket*, began operating in Britain in 1829.

Peter Cooper designed and built the first American steam locomotive in 1830. Called the *Tom Thumb*, it got off to a bad start. In a race against a horse-drawn train in Baltimore, the *Tom Thumb's* engine failed. Engineers soon improved the engine, and within 10 years steam locomotives were pulling trains in the United States.

A Railway Network

In 1840 the United States had almost 3,000 miles (4,828 km) of railroad track. By 1860, it had almost 31,000 miles (49,890 km), mostly in the North and Midwest areas. One railway linked the cities of New York City and Buffalo. Another connected the Pennsylvania cities of Philadelphia and Pittsburgh.

Wind in the Sails Clipper ships were designed to carry small, but highly profitable, cargoes over long distances at high speeds. In 1851 one of those ships, the *Flying Cloud*, made the passage from New York to San Francisco in 89 days—a record never beaten by another sailing ship. The age of the clipper ship ended in the late 1800s due to decreased shipping costs on steamships. After that, only ships that could carry large cargoes could make a profit.

“Steamers were improving, but they could not stand up with the clippers in honest competition. . . . The editor of Harper’s Magazine . . . predicted ‘if our steam-men do not look to their oars [there will be] a return to the old and wholesome service of wind and sail.’”

—from *Clipper Ship Men*

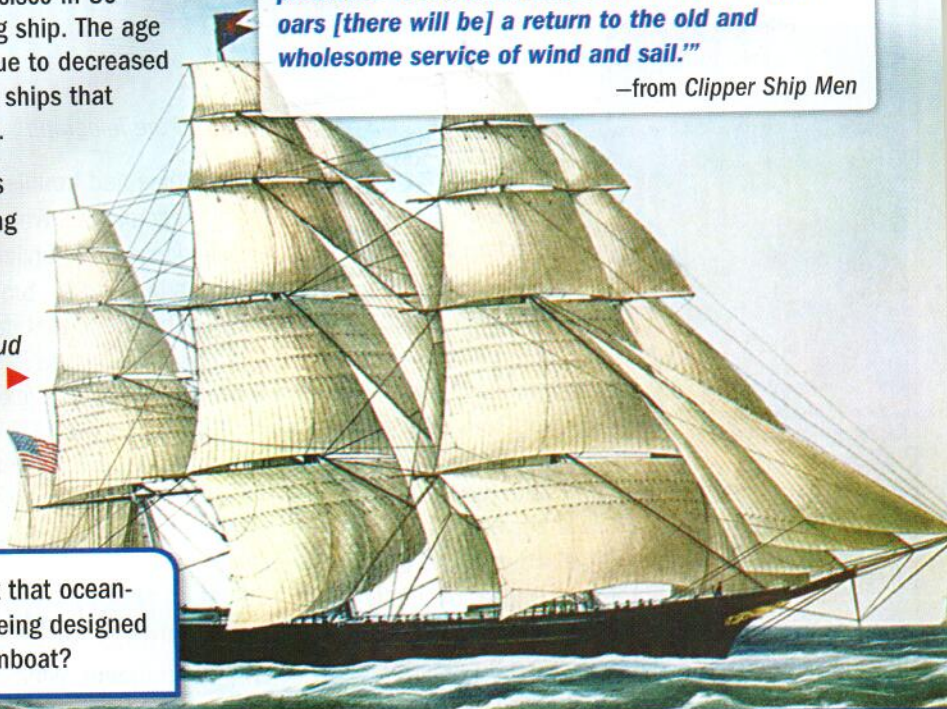


◀ A poster announces a clipper ship sailing from New York to San Francisco.

The *Flying Cloud* under full sail ▶

Critical Thinking

Speculating Why do you think that ocean-going sailing ships were still being designed after the invention of the steamboat?



Yet another linked Baltimore and Wheeling, Virginia (now West Virginia). Railway builders connected these eastern lines to lines being built farther west in Ohio, Indiana, and Illinois. By 1860, a network of railroad track united the Midwest and the East.

Moving Goods and People

Along with canals, the railways **transformed**, or changed, trade in the nation’s interior. The changes began with the opening of the Erie Canal in 1825 and the first railroads of the 1830s. Before this time, agricultural goods were carried down the Mississippi River to New Orleans. From there they were shipped to the East Coast or to other countries.

The development of the east-west canal and the rail network allowed grain, livestock, and dairy products to move directly from the Midwest to the East. Goods could now be moved faster and more cheaply. As a result, manufacturers in the East could offer them at lower prices.

The railroads also played an important role in the settlement and industrialization of the

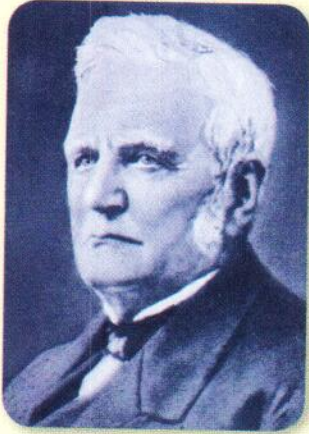
Midwest. Fast, affordable train travel brought people into Ohio, Indiana, and Illinois. The populations of these states grew. As more people moved into the area, new towns and industries developed.

Faster Communication

The growth of industry and the new pace of travel created a need for faster methods of communication over the vast distances. The **telegraph**—an apparatus that used electric signals to transmit messages—filled that need.

Samuel Morse, an American inventor, was seeking support for a system of telegraph lines. On May 24, 1844, Morse got the chance to demonstrate that he could send messages instantly along wires. As a crowd in the U.S. capital watched, Morse tapped in the words “What hath God wrought!” A few moments later, the telegraph operator in Baltimore sent the same message back in reply. The telegraph worked! Soon telegraph messages were flashing back and forth between Washington, D.C., and Baltimore.

People IN HISTORY



John Deere

Inventor of the Steel-Tipped Plow

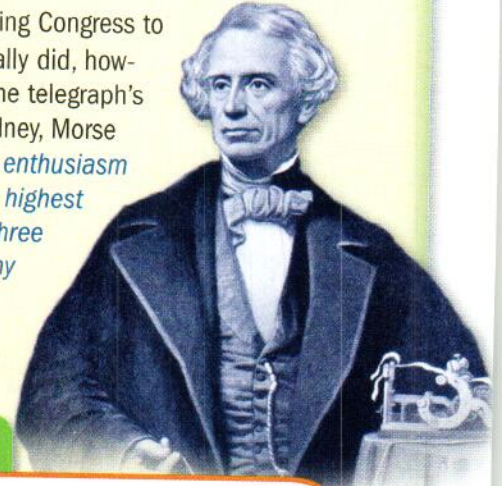
Because the heavy Midwestern soil stuck to cast-iron plows, farmers had to stop every few feet to clean the plow blades. Blacksmith John Deere

set out to create a polished steel plow that would clean itself. The plows became a successful new business. Within 10 years he was selling 1,000 plows per year. Deere constantly improved his design. He was quoted as saying, *"I will never put my name on a product that does not have in it the best that is in me."*

Samuel Morse

Inventor of the Telegraph

Samuel Morse had trouble convincing Congress to build a telegraph line. When he finally did, however, Americans were thrilled with the telegraph's speed. In a letter to his brother, Sidney, Morse described the scene that day: *"The enthusiasm of the crowd . . . was excited to the highest pitch. . . . They gave the Telegraph three cheers, and I was called to make my appearance at the window where three cheers were given to me by some hundreds present."*



CRITICAL Thinking

1. **Analyzing** What did Samuel Morse and John Deere have in common?
2. **Identifying** What showed the popularity of the telegraph? Of the steel-tipped plow?

Morse transmitted his message in **Morse code**. This code, which Morse developed and which bears his name, is a series of dots and dashes representing the letters of the alphabet. A skilled Morse code operator could rapidly tap out words in the dot-and-dash alphabet.

Americans adopted the telegraph eagerly. A British visitor marveled at the speed with which Americans formed telegraph companies and erected telegraph lines. Americans, he wrote, were driven to "annihilate [wipe out] distance" in their vast country. To speed the transmission of news using the telegraph, the Associated Press was formed in 1848. By 1852, there were about 23,000 miles (37,015 km) of telegraph lines in the United States.

Reading Check **Explaining** How did canals and railways transform trade in the interior of the United States?

Agriculture

Main Idea Revolutionary inventions in the 1830s changed farming methods, and agriculture became more profitable.

History and You Have you or your family ever bought produce from a farmers market? Read to learn how agriculture boomed during the 1800s.

The railroads gave farmers access to new markets far from their homes in which to sell their products. At the same time, advances in agricultural technology allowed farmers to greatly increase the size of the harvests they produced.

In the early 1800s, few farmers had ventured into the treeless Great Plains west of Missouri, Iowa, and Minnesota. Even areas of mixed forest and prairie west of Ohio and Kentucky seemed too difficult for farming.

Settlers worried that their wooden plows could not break the prairie's matted sod. Further, they worried that the soil would not be fertile enough to support fields of crops.

Revolution in Agriculture

Three revolutionary inventions of the 1830s changed farming methods and encouraged settlers to cultivate larger areas of the Midwest. One invention was the steel-tipped plow that **John Deere** invented in 1837. Far sturdier than the wooden plow, Deere's plow easily cut through the hard-packed prairie sod. Equally important were the mechanical reaper, which sped up the harvesting of wheat, and the thresher, which quickly separated the grain from the stalk.

McCormick's Reaper

Born on a Virginia farm, **Cyrus McCormick** became interested in machines that would ease the burden of farmwork. McCormick designed and constructed the mechanical reaper. He made a fortune manufacturing and selling it.

For hundreds of years, farmers harvested grain with handheld sickles, or cutting tools. McCormick's reaper could harvest grain much faster than a person using a sickle.

History ONLINE

Student Web Activity Visit glencoe.com and complete the Chapter 13 Web Activity about agriculture in the mid-1800s.

Because farmers could harvest wheat so quickly, they began planting more of it. Growing wheat became profitable. McCormick's reaper ensured that raising wheat would remain the main economic activity on the Midwestern prairies.

New machines and the accessibility to railroads allowed farmers to devote more acres to cash crops—crops raised strictly for sale. Midwestern farmers began growing wheat as a cash crop and shipping it east by train and canal barge. Farmers in the Northeast and Middle Atlantic states increased their production of fruits and vegetables.

Despite improvements in agriculture, the North turned away from farming and toward industry. It was difficult to make a living farming the rocky soil of New England. Industry, however, flourished in the area. The number of people working in factories continued to rise.

 **Reading Check** **Identifying** What innovation sped up the harvesting of wheat?

Section 1 Review

History ONLINE
Study Central™ To review this section, go to glencoe.com.

Vocabulary

- Write a paragraph in which you explain why each of these terms appears in a chapter about American life in the first half of the nineteenth century:
[innovation](#), [clipper ship](#),
[transform](#), [telegraph](#), [Morse code](#).

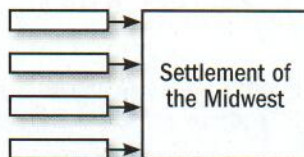
Main Ideas

- Summarizing** How were messages sent via telegraph? Why was this invention important?

- Identifying** List innovations in farming methods in the 1830s.

Critical Thinking

- Making Connections** Use a diagram like the one below to show factors that encouraged the settlement of the Midwest.



- Expository Writing** Write a paragraph discussing why industrial growth and the new pace of travel created a desire for faster communication.

Answer the Essential Question

- Essential Question** What innovations in industry, travel, and communications changed the lives of Americans in the 1800s?