

Progress with Problems

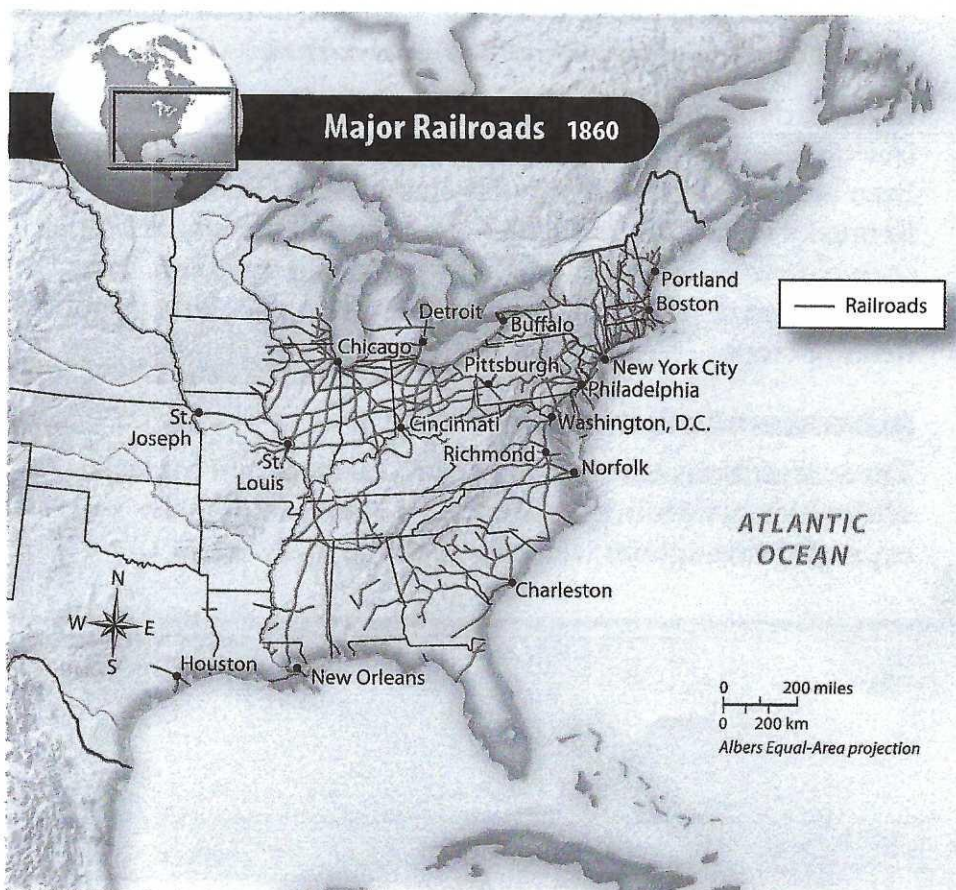
As more people moved more quickly along railways and waterways, the possibility of disaster also increased. Some tragic events occurred.

The SS *Central America* was a 270-foot side-wheel steamer that carried passengers and cargo between New York and the Central American country of Panama. The ship traveled one part of a widely traveled route between the East Coast and California. In September 1857, the *Central America* was carrying a full load of passengers and a large amount of gold when it steamed into a hurricane. The ship sank off the coast of the Carolinas, and hundreds of people drowned.

The Great Train Wreck of 1856 occurred between Camp Hill and Fort Washington, Pennsylvania, on July 17, 1856. Two trains slammed head-on into each other. An estimated 60 people were killed, and more than 100 were injured. At that point in time, it was considered one of the worst accidents in railroad history. The tragic news horrified the nation. Newspapers demanded that railroad companies improve their methods and equipment and make the safety of passengers their first concern.

Communications Breakthroughs

The growth of industry and the new pace of travel created a need for faster methods of communication. The **telegraph** (teh•luh•graf)—a device that used electric signals to send messages—filled that need.



GEOGRAPHY CONNECTION

Railroads were important not only for transporting people across the country, but they also allowed goods to be shipped greater distances than ever before.

1 REGION Which regions were least served by railroads in 1860?

2 CRITICAL THINKING
Making Connections Looking at the map, you can see that most of the railroad mileage runs between eastern and western points. Why do you think that is?

BIOGRAPHY



John Deere (1804–1886)

John Deere was born in Vermont. He trained as a blacksmith but found it difficult to make a living in his home state. He traveled to the state of Illinois in the 1830s. There he learned that farmers were having a difficult time plowing the region's rich but sticky soil with the rough iron plows of the day. Deere began making a polished steel plow that performed much better. Within 10 years, Deere was selling 1,000 plows per year. 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."

► CRITICAL THINKING

Drawing Conclusions What can you conclude about the benefit of Deere's invention for his farmer customers?

Samuel Morse, an American inventor, developed a system for sending coded messages instantly along electrical wires. After Morse showed his system could send messages over a short distance, Congress gave him money to test the device over a wider area. Morse strung wires between Washington, D.C., and Baltimore, Maryland. On May 24, 1844, he was ready to try out his system. A crowd of people watched as Morse tapped out the words "What hath God wrought" on his telegraph system. A few moments later, the operator in Baltimore sent the same message back in reply. Morse's telegraph had worked!

Telegraph operators sent messages quickly by using **Morse code**. This code uses different arrangements of short and long signals—dots and dashes—to represent letters of the alphabet. Telegraph companies formed, and workers put up telegraph lines across the country. By 1852, there were about 23,000 miles (37,015 km) of telegraph lines in the United States.

The telegraph allowed information to be communicated in minutes rather than days. People could quickly learn about news and events from other areas of the United States. The telegraph also allowed businesses to become more efficient with production and shipping.

✓ PROGRESS CHECK

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

Farming Innovations

GUIDING QUESTION *What changes made agriculture more profitable in the 1830s?*

In the early 1800s, few farmers were willing to settle in 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 old plows could not break the prairie's matted sod. They also worried that the soil would not be fertile enough to support fields of crops.

Advancements in Agriculture

Three inventions of the 1830s helped farmers overcome difficulties in farming the land. As a result, settlement expanded throughout wider areas of the Midwest.

Reading **HELPDESK**



Morse code a system of dots and dashes that represent the alphabet

One of these inventions was the steel-tipped plow developed by John Deere in 1837. This allowed farmers to cut through the hard-packed prairie sod. Knowing that they would be able to farm the land on the prairies helped people make the decision to move west. Equally important to the transformation of farming were the mechanical reaper, which sped up the harvesting of wheat, and the thresher, which quickly separated the grain from the stalk. Each of these innovations reduced the labor required for farming.

McCormick's Reaper

Cyrus McCormick was the genius behind the invention of the mechanical reaper. Before this invention, farmers had harvested grain with handheld cutting tools. McCormick's reaper greatly increased the amount of crop a farmer could harvest. Because farmers could harvest more wheat, they could plant more of it. Growing wheat became profitable. Raising wheat became and would remain the main economic activity on the Midwestern prairies.

New machines and the ease of access to railroads allowed farmers to plant more acres with cash crops. Midwestern farmers grew wheat and shipped it east by train and canal barge. Northeast and Middle Atlantic farmers increased their production of fruits and vegetables.

In spite of improvements in agriculture, the North was steadily becoming more industrial and urban. Agriculture in the region was still growing, but industry was growing faster.

PROGRESS CHECK

Identifying What innovation sped up the harvesting of wheat?

LESSON 1 REVIEW

Review Vocabulary

1. Use these two words in a sentence that shows their importance to American life in the early 1800s.
a. telegraph b. Morse code

Answer the Guiding Questions

2. **Explaining** How was water transportation improved in the 1800s?
3. **Summarizing** How were messages sent by telegraph?
4. **Identifying** List innovations in farming methods in the 1830s.
5. **ARGUMENT** Which individual do you think created the invention with the greatest impact on the nation's development, and why?
 - Samuel Morse
 - John Deere
 - Cyrus McCormick