

Name _____

Date _____

Wright and Curtiss: Innovation of Flight

Read this passage with your partner or small group. Use a highlighter or colored pen to mark vocabulary that you would like to explore further.

Bicycles were all the rage at the end of the 1800s. The idea of being able to travel wherever you wanted without walking or riding a horse made a big difference to Americans. But three people directly involved in the bicycle industry went on to revolutionize travel on a much bigger scale. We all think we know the story of the invention of the airplane, don't we? The Wright brothers are credited with the first flight in Kitty Hawk, North Carolina. But you might not know the rest of the story. In fact, there is another American innovator of the time that may deserve some of the credit for the airplane industry as it exists today. But we'll let you decide after you hear the story . . .

Orville and Wilbur Wright were brothers who grew up in Dayton, Ohio. They had a little bicycle repair shop around the turn of the 20th century. They were so good at repairing bicycles that they soon realized that they could design better bicycles than the ones they were trying to fix. Soon, they were making and selling bicycles of their own design. Wilbur, the inventor, was also interested in flight. By watching birds, he came up with the idea that would revolutionize the way inventors thought about flying . . . after tinkering with airplane wing design, he came up with the idea of "wing warping."

Meanwhile, in Hammondsport, NY, Glenn Curtiss, in his own bicycle shop, focused on engines. He was already known for building and racing motorcycles. Just like Orville and Wilbur, Glenn was fascinated by the idea of a flying machine, but his interests leaned toward designing engines.

Wilbur Wright knew that you need to solve several problems in order to invent an airplane. You need to build wings of sufficient lift, to use an engine of sufficient power, and to balance and steer the machine in flight. They had their first successful flight in 1903, at Kitty Hawk, North Carolina. But there was a small problem. Only a few people saw that first flight, and the Wright brothers often refused to demonstrate their flying for the public. Wilbur wanted to make sure that they held a patent for their designs before letting others see it. The public wasn't happy. Some began to murmur that the Wrights had made it all up.

Curtiss began working with a different group interested in creating a flying machine. Begun by Alexander Graham Bell, this group was called the Aerial Experiment Association (AEA). This group heard about the Wright brothers' success and was even more motivated to stake a claim in the

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race to flight. Curtiss had heard about the brothers' use of wing warping to balance their airplane. Curtiss didn't want to copy their designs. So instead the AEA decided to attach small, separate, wing-like surfaces to the main wings. The angles of these could be changed, leaving the wings steady.

Five years after the Kitty Hawk flight Curtiss and the AEA completed their own successful test flight. But unlike the Wright brothers, his flight was public—an entry into a contest with about 1,000 witnesses to his success! He won a trophy, which also made him the first American to receive an aviation award. Records show that because of this flight, he also received the first pilot's license granted in this country. This made him more popular than Orville and Wilbur Wright. Curtiss eventually separated from the AEA and began trying to sell airplanes commercially.

How did the Wright brothers react to Curtiss's success? They sued him! The Wright brothers had received their patent for their wing-warping design three years before. The judge ruled that Curtiss's little wing-like additions were not different enough from the Wright's invention. Because of that, Glenn Curtiss would have to shut down his company. Curtiss fought the ruling, and the lawsuits went on for years. Many people believe that the Wright brothers' actions stifled the airplane industry in the United States, letting European inventors take the lead. Curtiss found a loophole in the patent law, though: because the patent law only worked in the U.S., he moved his wing production to Canada!

This stalemate between their two airplane companies went on, even after Wilbur Wright died in 1912. Orville blamed his brother's death on the stress caused by Curtiss. But America's entry into World War I in 1917 put an end to the fight. The government forced both companies to agree to a new plan. It would pay small royalties to both the Wright and Curtiss companies on the sale of all new American airplanes during the war.

Today, the Wright brothers are still known for inventing and building the world's first successful airplane and making the first controlled, powered and sustained heavier-than-air human flight. When you hear the words "First in Flight," you think of the Wright brothers and Kitty Hawk, North Carolina. Glenn Curtiss, on the other hand, took the government's offer and thrived during the war and beyond, building his business with more contracts with the government. Today he is remembered as the inventor of the seaplane and, because of his association with the U.S. Navy, holds the title of Father of Naval Aviation.

So, what do you think now? Is the story of flight in America different than you thought?