Charles A. Lindbergh was one of many young men and women learning to fly in 1922.

He toured as a wing walker and parachutist in a barnstorming act, and then a pilot. He joined the Army in 1924 and graduated first in his flying class in 1925, but did not receive a regular commission. He joined the Army Reserve and returned to civilian life. He then spent a year as a pilot for the new airmail service.

In September 1926 he decided to try to fly across the Atlantic. He had his eye on the Orteig prize—$25,000 for the first pilot to fly solo nonstop from New York City to Paris, France.

Lindbergh knew that other pilots were after the same prize, so he moved fast. He had $2,000 of his own savings, plus $13,000 he’d collected from businessmen in St. Louis. He struck a deal with Ryan Aircraft Inc. to build him a plane. He wanted a high-wing monoplane with a single air-cooled 220-horsepower Wright Whirlwind engine.

Just 60 days after the contract was signed, Ryan delivered the aircraft. After a few weeks of test flights, Lindbergh was ready. He named the aircraft the *Spirit of St. Louis*, in honor of the men who had supported him.

On 10 May 1927, he flew nonstop from San Diego to St. Louis. After a brief stop, he flew on to New York City. He made it in 21 hours and 20 minutes of flying time. No one had ever flown across the country so fast. He had set a record before he even took off for Paris. On 20 May, after waiting a while for the weather to clear, he took off from a rain-soaked runway at Roosevelt Field.

Lindbergh had no radio. He had only a compass to guide him as he flew above the stormy skies over the North Atlantic. And he was alone.
But 27 hours after taking off, he saw a promising sight: the green western edge of the British Isles. Circling low, he spotted some boats in the water. He leaned out of his plane and called down to the fishermen: “Which way is Ireland?”

He was on course. And he was ahead of schedule. He crossed the Irish Sea and the English Channel. Finally he entered the French skies.

He touched down 21 May 1927 at Le Bourget Airport outside Paris. He’d flown 3,600 miles in 33½ hours. He won the Orteig prize for the first pilot to fly solo nonstop from New York to Paris.
Charles Lindbergh’s Famous Contribution to Aviation

The minute his plane touched down in Paris, Lindbergh became an international hero. Newspapers and magazines around the world reported on his achievement.

The barnstormers had built public interest in aviation by giving farmers five-minute spins over their cornfields. Lindbergh’s transatlantic flight opened people’s minds to larger possibilities of air travel.

In July 1927, still piloting the Spirit of St. Louis, Lindbergh embarked on a tour of the country. A high-level kind of barnstorming, you might call it. In a little more than three months, he flew 22,350 miles back and forth across the United States. He made speeches in 72 cities. Lindbergh encouraged people to get pilot training. His efforts to promote civil aviation led to the construction of hundreds of airports. He was a true goodwill ambassador for aviation.

In December Lindbergh capped off a historic year with a 3,200-mile all-American tour. He began with a nonstop flight from Washington, D.C., to Mexico City. He then continued southward to a dozen other Latin American countries.

Over the next several years, Lindbergh and his wife, Anne Morrow Lindbergh, worked in civil aviation. They made survey flights to determine the best routes for new airlines.

The Significance of the First Transatlantic Solo Flight

In times past, travelers would often see big stones or slate tablets along the road. These stones marked the distance to the next town. These were called milestones. Today people use the word milestone to describe an important event, such as a breakthrough in the advancement of knowledge in a field.

The Wright brothers’ flight on 17 December 1903 was a milestone flight. So was Lindbergh’s transatlantic solo flight, which opened the door to the daily international air travel we enjoy today. In the early 20th century, the golden age of aviation, such milestone flights came one after another.

Today, jumbo jets fly from New York to Paris in less than one-third the time Lindbergh took. But his flight—which demonstrated the potential of the airplane as a safe, reliable mode of transportation—still stands as one of the greatest individual achievements of all time.
Charles Lindbergh—“Lucky Lindy”—appeared to lead a charmed life in many ways, but his life was not without controversy or tragedy.

He and his wife suffered personal tragedy when their infant son was kidnapped and murdered in 1932. The case was one of the most sensational crimes of the first half of the 20th century. Weary of life in the public eye, the Lindberghs moved to England.

But Europe wasn’t all that peaceful in the 1930s. War was brewing. Lindbergh assessed the strength of the air forces of different countries in Europe. As a result, he called for the United States and its Allies to make an agreement with the Germans that would end the war. He thought the Germans were too strong to defeat in battle.

Lindbergh returned to the United States in 1939 and made a survey for the War Department. He gave speeches for the America First Committee, a group that opposed the US entry into World War II. For this, some people branded him pro-Nazi, and he resigned his Army Reserve commission.

But in 1941, when the United States entered World War II, he offered his services to the Army Air Force. Later, he went on several missions as a civilian consultant to the Ford Motor Company and the United Aircraft Corporation. Although officially an “observer,” he flew 50 combat missions during a tour of duty in the Pacific.

In 1954, President Eisenhower and the US Senate returned Lindbergh to the Air Force Reserve as a brigadier general. Lindbergh died in 1974.
Anne Morrow Lindbergh—Aviator and Writer

In 1927 Anne Morrow was in Mexico City when Charles Lindbergh showed up for Christmas dinner at her parents’ house.

He was on the goodwill tour of Latin American countries that he made after his historic transatlantic flight. Anne’s father, Dwight Morrow, was the US ambassador to Mexico. Lindbergh had stopped to spend the holiday with him and his family.

Anne and Charles fell in love, and in 1929 they married. They formed a remarkable partnership. She learned to fly. The sky was the one place they could be alone together, away from hero-worshipping crowds.

She referred to herself as “Charles’s faithful page.” Her husband said of her, “No woman exists or has existed who is her equal.”

As an aviator, Anne Lindbergh is best known for her 1931 flight to China via the “Great Circle Route.” She accompanied her husband, serving as his copilot, navigator, and radio operator. The Lindberghs showed it was possible to reach Asia from the United States by flying over Canada and the North Pole, rather than across an ocean.

She wrote about the trip in a book called North to the Orient. Writing was a way for her to establish her own identity and to step out of her husband’s shadow. She also wrote Listen: The Wind and Gift from the Sea.
**Amelia Earhart’s Record Flights**

Amelia Earhart also made two milestone flights across the Atlantic. The story of her achievement sheds light on the state of aviation at the time.

Lindbergh’s historic solo crossing did not lead to routine air travel right away. Flying was still dangerous. In 1927, the year Lindbergh achieved fame, 19 men and women died in unsuccessful attempts to fly across the Atlantic.

Amelia Earhart was the first woman to fly across the Atlantic. But she went as a passenger, not a pilot. She’d had some flight training. But Earhart hadn’t yet devoted her life to aviation.

In April 1928, however, aviator Wilmer Stultz asked her a favor. He and his navigator, Louis Gordon, wanted Earhart to accompany them as they crossed the Atlantic. They were seeking a prize offered by Pittsburgh heiress Amy Phipps Guest. She wanted to get a woman across the ocean in the air—even if only as a passenger.

The plane Stultz, Gordon, and Earhart flew was the *Friendship*—a Fokker C-2 trimotor with a gold and flame-red paint job. It was a long, cold, dangerous trip. They lost radio contact on the way. They had only a gallon of fuel left when they landed. And they landed in the wrong country—Wales instead of Ireland. But they made it across the Atlantic.

Stultz got a $20,000 award. Gordon got $5,000. Earhart received no money. After all, she had gone along, as she later indicated in the title of her autobiography, “for the fun of it.”

But the flight was a great opportunity for her to be an apprentice—a person who works with a skilled master to learn by practical experience.

Stultz was one of the best pilots of that day. And Earhart, even though wedged between two gas tanks for most of the trip, didn’t miss a thing. She watched every move Stultz made. She saw how he maneuvered through fog and storms. And she got it all down in her notebook.

The press hailed her as “Lady Lindy.” Like Lindbergh, Earhart gained fame overnight. And like him, she toured the country.

But not everyone accepted Earhart as a hero. Some critics said she’d gotten a free ride. They said she’d depended on the luck and the skill of her male pilot. She struggled with self-doubt. But finally she proved her courage: she made more milestone flights. She set the altitude record for an autogiro, an early, helicopter-like aircraft, reaching 18,415 feet. Then she became the first woman, and second person, to make a transcontinental—coast-to-coast—flight in an autogiro.

But Earhart still wasn’t content. For her, the milestone that mattered most was a solo crossing of the Atlantic. She wanted to be the first woman to do it.

On 20 May 1932 she took off in her Lockheed Vega from Harbour Grace, Newfoundland. It was the fifth anniversary of Lindbergh’s famous flight.
Fifteen hours later, she touched down at a farm outside Londonderry in Northern Ireland. She had covered 2,065 miles, braving storms, heavy clouds, and strong winds. She had coped with iced-up wings, instrument problems, and a broken weld in the exhaust system.

But she made it. No free ride this time. She proved she was a skilled and brave aviator.

Earhart reached another milestone in 1935 as the first pilot to fly from Honolulu to Oakland, California. That trip took 18 hours and 16 minutes.

At that point, she felt the only goal left was a “true” round-the-world flight. Other pilots had flown around the world by that time. But they’d made their circuits in the northern hemisphere, where there is more land. A circuit is a route that passes through one or more points and then returns to the starting point. Pilots could make a circuit of the globe by “island hopping”—making periodic stops to refuel. Earhart’s goal was to circle the globe as close as possible to the equator—the imaginary circle that divides Earth into northern and southern halves.

Earhart took off 2 June 1937. With her was copilot Frederick Noonan. All went well for 40 days. They racked up 22,000 miles. But on the longest leg of the trip, from Lae, New Guinea, to Howland Island in the Pacific, the plane disappeared. President Franklin D. Roosevelt ordered a massive search. It was not successful. On 18 July 1937, the US Navy declared Earhart and Noonan lost at sea.
Other Significant Contributions That Helped Flight Become Mainstream

1st Lt James Harold Doolittle made another milestone flight on 24 September 1929. His milestone was the first successful blind flight—the act of taking off and landing relying solely on instruments inside the cockpit for guidance. He took off, flew five miles, and landed safely—all without looking out of the plane. Because of his work, manufacturers started equipping planes with instruments and two-way radios.

Doolittle’s blind flight built on the work of Sgt William C. Ocker, the third enlisted man in the Army to become a pilot.

Ocker worked with Capt David A. Myers, the flight surgeon at Crissy Field, California, to solve the problem of spatial disorientation. Spatial disorientation is a condition in which a person’s sense of direction does not agree with reality. A pilot who is spatially disoriented literally doesn’t know which end is up.

In the early days, even experienced pilots could get confused when visibility was poor. They sometimes thought they were banking left when they were banking right. This happened because they’d lost sight of the horizon, which they used to orient themselves.
Lt Gen James “Jimmy” Doolittle—Versatile Aviator

Lt Gen James Harold “Jimmy” Doolittle (1896–1993) was one of the most versatile figures in American aviation. Despite his name, this famous aviator could do just about anything.

He was born in Alameda, California. He attended the University of California and the Massachusetts Institute of Technology. He got flight training during World War I.

He made the first successful blind takeoff and landing in 1929. He left the Army Air Corps in 1930 and entered private business, But first and foremost a Soldier, he returned to the Air Corps in 1940.

Early in WW II, Doolittle led a surprise raid on Tokyo, Japan’s capital, on 18 April 1942. It involved 16 twin-engine B-25 bombers. For this daring raid, the planes took off from the aircraft carrier USS Hornet. He won the Medal of Honor for his role in this raid.

Later, he served in North Africa and Europe. He became a lieutenant general in 1944. When the war ended in 1945, he returned to private business. In 1989, President Ronald Reagan awarded him a Presidential Medal of Freedom.
Ocker’s “lightbulb” moment came when he realized that the times when
the indicator seemed wrong were exactly the times when he needed it most.
When he was disoriented, the indicator was correct.

Ocker failed an orientation test when Capt Myers spun him around in a special
chair designed to simulate the conditions that gave pilots so much trouble.
But Ocker passed when he brought along and used his trusty turn-and-bank
indicator.

Many early pilots took pride in their ability to “fly by the seat of their pants.”
But Ocker and Myers realized that pilots of the future would have to rely more
heavily on instruments. Their work led to Doolittle’s successful blind flight.

Ocker developed a number of devices that became critical to pilot training
and aviation in general. These inventions are forerunners of today’s flight
simulators. A flight simulator is a training device that simulates, or imitates,
the experience and sensation of flight. It lets pilots train without having to go
up in the air.

Katherine Sui Fun Cheung—
First Asian-American Woman Pilot

Katherine Sui Fung Cheung (1904–2003) left China at 17 to study music in Los Angeles. At age 26, she
started flying lessons. She made her first solo flight after only 12½ hours of instruction. She became
the first licensed Asian-American woman pilot in the United States. A member of the exclusive
“Ninety-Nines” club—an organization of 99 women pilots, such as Amelia Earhart and Phoebe Fairgrave
Omlie, who worked to further women’s interest in aviation and aviation in general—she took part
in air shows and air races. (The Ninety-Nines organization continues today.) Cheung amazed
crowds with her rolls and loops in the air.

Cheung planned to go to China to train pilots there. But a tragic crash that killed her cousin ended those
plans. At 38, she promised her dying father she would give up flying. She kept her promise and in later years
went into the flower business.
Sgt William C. Ocker—
A Flying Hero Moves Up
Through the Ranks

When William Charles Ocker enlisted in the US Army in 1898, most Soldiers were still on the ground. Ocker helped give the Army wings. He became an excellent pilot. When he took the test for his license, the examiner wrote, “It was the most remarkable series of landings ever made by a student flying for a pilot’s license. Ocker’s mastery of the machine was superb. . . .” He got his license on 29 April 1914.

But his great achievements were in laying the foundation for blind flight and developing testing and training equipment.

Ocker was born in Philadelphia. He left school at the end of seventh grade. He enlisted during the Spanish-American War. He saw action in that conflict and the Philippine Insurrection as well.

On guard duty in Fort Myer, Virginia, in 1909, he’d seen the Wright brothers demonstrate their aircraft. From then on, he knew he wanted to fly. He became the third enlisted man allowed to serve as a pilot.

Later Ocker became an officer. Among his many aviation inventions was the 1938 development of a new type of airplane propeller that made less noise and vibrated less. This meant less stress on the propeller blades.

His ambition, he often said, was to be not the best pilot, but the oldest pilot. He was indeed one of the oldest pilots in time of service in the Army Air Corps. He retired as a colonel and died in 1942 at age 62.

His contributions to aviation safety helped countless aviators live longer, saving many lives during World War II. In 1955, the Air Force presented the Legion of Merit medal to his widow, Doris Ocker.
The First Air Refueling of the Question Mark

Another hurdle to mainstream aviation was providing enough fuel for long-distance runs. Pilots needed a system for aerial refueling, which is taking on more fuel in flight. Two Army lieutenants, 1st Lt Lowell H. Smith and 1st Lt J. P. Richter, achieved this in 1923. They tanked up by running a 50-foot hose from a supply aircraft to a plane making a long trip. They could pump about 50 gallons of fuel each time. They were able to stay aloft for 37 hours and 15 minutes.

On New Year's Day 1929, Maj Carl Spaatz took off in the Question Mark, a Fokker C-2 Trimotor. By the time he landed—almost a week later—he had set an endurance record. Spaatz and his crew—Capt Ira C. Eaker, 1st Lt Harry A. Halverson, 2d Lt Elwood R. Quesada, and SSgt Roy W. Hooe—stayed up 150 hours, 40 minutes, and 15 seconds. They had refueled 37 times.

Two Douglas C-1 aircraft, each with a three-man crew, provided the fuel for the Question Mark. Capt Ross G. Hoyt, 1st Lt Auby C. Strickland, and 2d Lt Irvin A. Woodring served as one tanker crew. Members of the second crew were 1st Lt Odas Moon, 2d Lt Andrew F. Solter, and 2d Lt Joseph G. Hopkins. Their feat demonstrated the practicality of in-flight refueling.
The Birth of Airmail and Airlines

Aerial refueling was important for the Army. But other, everyday things brought aviation into the mainstream for most Americans. Two of the most important were airmail service and commercial airlines.

The Post Office Department started the first airmail service on 15 May 1918. It used a few planes borrowed from the Army. Regular airmail service started 1 July 1924.

Airmail not only sped up mail delivery—it contributed a great deal to the development of the airlines. The Airmail Act of 1925 allowed private companies to carry mail under contract with the US government. This was a big boost for the aviation industry. Government contracts ensured a steady flow of money to the new airlines. In fact, the money from carrying the mail was so good for the airlines that their planes often had hardly any room for people. Most mail planes carried only two or three passengers.

That changed with the passage of the Air Commerce Act on 20 May 1926. The act provided for the first federal safety regulation of aviation for pilots and aircraft. It also sparked the growth of commercial airlines.

In 1934 Congress passed another airmail act. It separated the air-transport companies from the aircraft manufacturers. It also set the stage for a well-organized air-transport system using government payments for carrying mail by air.
CHECKPOINTS

Lesson 2 Review

Using complete sentences, answer the following questions on a sheet of paper.

1. Why did Lindbergh want his plane built quickly?
2. Where did Lindbergh get the money for the plane?
3. What record did Lindbergh set before he took off for Paris?
4. What record did Lindbergh set when he landed in Paris?
5. What milestone did Earhart achieve on the five-year anniversary of Lindbergh’s record?
6. Why was blind flight important to aviation?
7. Why does a pilot want to see the horizon?
8. Who was the first licensed Asian-American woman pilot in the United States?
9. What was the importance of refueling the Question Mark in the air?
10. Why was airmail service important?

Applying Your Learning

11. What were the roles of heroes such as Lindbergh and Earhart in developing aviation? What was the role of the US government?