

Aerospace Engineering Milestones

Aerospace Engineering · Answer Key · 10 Questions

1. What groundbreaking propulsion system, patented by Frank Whittle in 1930 and independently by Hans von Ohain in 1935, revolutionized aircraft speed and altitude capabilities?

- A) Ramjet engine
- B) Turboprop engine
- C) Turbojet engine**
- D) Rocket engine

2. Which pioneering aircraft, designed by Igor Sikorsky, is credited as the first successful single-rotor helicopter to fly in 1939?

- A) Focke-Wulf Fw 61
- B) Vought-Sikorsky VS-300**
- C) Mil Mi-1
- D) Bell 47

3. The development of which material, first produced in significant quantities in the early 20th century, was crucial for building lighter and stronger aircraft structures, leading to improved performance?

- A) Titanium alloys
- B) Carbon fiber composites
- C) Aluminum alloys**
- D) Magnesium alloys

4. Who is credited with the first successful sustained flight of a heavier-than-air powered aircraft in 1903?

- A) Alberto Santos-Dumont
- B) Glenn Curtiss
- C) Louis Blériot
- D) Orville and Wilbur Wright**

5. The V-2 rocket, developed by Wernher von Braun's team in Germany during World War II, is considered a significant precursor to modern spaceflight due to its innovative use of what type of fuel?

- A) Solid propellant
- B) Cryogenic liquid oxygen and ethanol**
- C) Hydrazine
- D) Nuclear thermal propulsion

6. What aerodynamic principle, first fully described by Daniel Bernoulli in the 18th century, is fundamental to understanding how wings generate lift?

A) Newton's Third Law

B) Bernoulli's Principle

C) Coanda Effect

D) Kutta-Joukowski Theorem

7. The Bell X-1 achieved the first supersonic flight in 1947. What was the primary technological challenge overcome to enable this breakthrough?

A) Developing an effective airframe design

B) Achieving stable control at high speeds

C) Designing a propulsion system capable of thrust greater than drag

D) Creating a pilot escape system for extreme conditions

8. Which early unmanned aerial vehicle (UAV) technology, developed during World War I, was a precursor to modern drones and often used for reconnaissance or as target practice?

A) Autogyro

B) Cruise missile

C) Kettering Bug

D) Pilotless aircraft

9. The development of the swept wing design, popularized by aircraft like the Messerschmitt Me 262 and later the F-86 Sabre, was a major advancement that significantly improved what aspect of flight at high speeds?

A) Fuel efficiency

B) Takeoff performance

C) Maneuverability

D) Stability and reduced drag (wave drag)

10. What significant discovery by Robert Goddard in the early 20th century laid the foundation for liquid-fueled rocketry and space exploration?

A) The theory of relativity

B) The principles of liquid propellant combustion

C) The concept of orbital mechanics

D) The development of the gyroscopic stabilizer