

Milestones in Aerospace History

Aerospace Engineering · Practice Test · 25 Questions

1. Which experimental aircraft, first flown in 1947, was the first to officially break the sound barrier in level flight?

- A) Bell X-1
- B) Douglas D-558-1 Skystreak
- C) North American F-86 Sabre
- D) Lockheed P-80 Shooting Star

2. The NACA Cowling, developed in 1928, was an engineering breakthrough that primarily served what purpose?

- A) Increasing structural rigidity of wing spars
- B) Reducing aerodynamic drag of radial engines
- C) Improving high-altitude engine combustion
- D) Stabilizing flight during turbulence

3. What was the primary innovation of the Vought V-173 'Flying Pancake' aircraft design?

- A) Variable-sweep wings
- B) Blended wing-body architecture
- C) Low-aspect-ratio all-wing design for STOL
- D) Counter-rotating turbojet engines

4. The first human-made object to reach the Moon's surface was the Soviet Luna 2 probe. In what year did this impact occur?

- A) 1957
- B) 1959
- C) 1961
- D) 1963

5. The 'Tu-144' was the world's first supersonic transport aircraft. Which nation produced this aircraft?

- A) United Kingdom
- B) United States
- C) Soviet Union
- D) France

6. Project Gemini's 'Gemini 8' mission achieved a historic first in aerospace engineering by completing:

- A) First successful EVA
- B) First space docking between two spacecraft
- C) First lunar orbit
- D) First recovery of a payload from Earth orbit

7. What is the specific name of the aerodynamic phenomenon where shock waves form at the trailing edge of a wing during transonic flight?

- A) Mach tuck
- B) Wave drag
- C) Area rule
- D) Vortex shedding

8. Which aircraft was the first to use an ejection seat as a standard safety feature for the pilot?

- A) Heinkel He 280
- B) Messerschmitt Me 262
- C) Gloster Meteor
- D) Northrop P-61 Black Widow

9. In 1930, Frank Whittle was granted the patent for the first turbojet engine. What was his specific innovation?

- A) The centrifugal compressor
- B) The axial flow compressor
- C) The afterburner
- D) The variable geometry nozzle

10. The 'C-5 Galaxy', introduced in 1970, utilized what specific high-bypass turbofan engine design to achieve massive payload capacity?

- A) General Electric TF39
- B) Pratt & Whitney JT9D
- C) Rolls-Royce RB211
- D) CFM International CFM56

11. Which spacecraft was the first to perform a flyby of Pluto, reaching its destination in July 2015?

- A) Voyager 1
- B) Cassini-Huygens
- C) New Horizons
- D) Galileo

12. The 'Area Rule' (Whitcomb area rule) was a critical discovery for supersonic flight. Where was Richard Whitcomb employed when he formulated it?

- A) Lockheed Skunk Works
- B) NACA Langley Research Center
- C) Boeing Phantom Works
- D) Douglas Aircraft Company

13. What was the first artificial satellite launched into Earth orbit by a multi-stage rocket with a liquid-fueled booster?

- A) Vanguard 1
- B) Sputnik 1
- C) Explorer 1
- D) Luna 1

14. The 'SR-71 Blackbird' utilized which specialized fuel to manage high temperatures during sustained Mach 3 flight?

- A) JP-4
- B) JP-7
- C) RP-1
- D) Liquid Hydrogen

15. Which early rocket propulsion pioneer is credited with the development of the first liquid-fueled rocket, launched in 1926?

- A) Konstantin Tsiolkovsky
- B) Hermann Oberth
- C) Robert Goddard
- D) Wernher von Braun

16. What significant structural failure mode caused the grounding of the de Havilland Comet in the 1950s?

- A) Engine turbine blade fatigue
- B) Metal fatigue from cabin pressurization cycles
- C) Control surface flutter
- D) Fuel system cavitation

17. The 'Saturn V' rocket used what type of propellant combination in its first stage (S-IC)?

- A) Liquid Hydrogen/Liquid Oxygen
- B) RP-1/Liquid Oxygen
- C) Solid Polybutadiene
- D) Hydrazine/Nitrogen Tetroxide

18. Which aircraft was the first to feature a 'fly-by-wire' control system, replacing traditional mechanical linkages?

- A) F-16 Fighting Falcon
- B) Avro Canada CF-105 Arrow
- C) Apollo Lunar Module
- D) NASA F-8 DFBW

19. The 'X-15' rocket plane set a world record for the highest speed ever reached by a manned powered aircraft. In what year was this record set?

- A) 1962
- B) 1967
- C) 1971
- D) 1975

20. What was the primary aerodynamic purpose of the 'winglets' first pioneered by NASA's Richard Whitcomb in the 1970s?

- A) Increasing lift at low speeds
- B) Reducing wingtip vortex drag
- C) Stabilizing supersonic flight
- D) Enhancing maneuverability in aerial combat

21. The 'Viking 1' mission was the first to successfully land and operate on the surface of which planet?

- A) Venus
- B) Mars
- C) Mercury
- D) Jupiter

22. What was the first jet-powered aircraft to enter operational service in World War II?

- A) Gloster Meteor
- B) Messerschmitt Me 262
- C) Heinkel He 162
- D) Arado Ar 234

23. Which aerospace manufacturer produced the 'Spirit of St. Louis' used by Charles Lindbergh?

- A) Ryan Aeronautical Company
- B) Lockheed Corporation
- C) Curtiss-Wright
- D) Douglas Aircraft

24. The 'Pioneer 10' probe was the first spacecraft to achieve what specific milestone in 1973?

- A) Exit the solar system
- B) Perform a flyby of Jupiter
- C) Land on an asteroid
- D) Capture images of the Sun

25. What was the primary function of the 'Sabatier reactor' proposed for use on the International Space Station?

- A) Carbon dioxide reduction
- B) Oxygen generation
- C) Water reclamation
- D) Thermal energy storage