

# Understanding Airbags: A Vehicle Safety System

Automotive Safety · Answer Key · 20 Questions

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## 1. What is the primary purpose of an airbag in a vehicle?

- A) To provide entertainment for passengers
- B) To offer soft cushioning and restraint during a collision**
- C) To enhance the vehicle's aesthetic appeal
- D) To improve fuel efficiency

## 2. Which of the following is NOT a component of an airbag system?

- A) Airbag cushion
- B) Inflation module
- C) Impact sensor
- D) Engine control unit**

## 3. Airbags are considered what type of restraint system?

- A) Active restraint
- B) Passive restraint**
- C) Primary restraint
- D) Secondary restraint

## 4. Why are airbags classified as 'passive' restraints?

- A) Because they require occupant action to deploy
- B) Because they deploy automatically without occupant action**
- C) Because they are only active during high-speed collisions
- D) Because they are a backup to active restraints

## 5. Who is credited with independently developing the airbag specifically for automobile use in the United States?

- A) Arthur Parrott
- B) Harold Round
- C) John W. Hetrick**
- D) Walter Linderer

## 6. What was the primary reason for initial limited success and some fatalities with early commercial airbag designs in the 1970s?

- A) Lack of consumer interest
- B) Inability to inflate fast enough
- C) Technical design flaws and safety concerns**
- D) High manufacturing costs

**7. What chemical process is often used to inflate airbag modules?**

- A) Compressed air
- B) Nitrogen gas expansion
- C) Pyrotechnic process**
- D) Electric current activation

**8. What is the electronic controller unit (ECU) in an airbag system responsible for?**

- A) Inflating the airbag
- B) Detecting the collision type, angle, and severity**
- C) Providing occupant comfort
- D) Controlling the vehicle's braking system

**9. Modern vehicles can contain up to how many airbag modules?**

- A) Two
- B) Four
- C) Six
- D) Ten**

**10. What type of safety system is an Anti-lock braking system (ABS) considered?**

- A) Passive safety device
- B) Active safety device**
- C) Supplemental safety device
- D) Occupant restraint device

**11. The aviation safety community uses the terms 'active' and 'passive' in the opposite sense from the automotive industry. True or False?**

- A) True**
- B) False

**12. What breakthrough in developing airbag crash sensors occurred in 1967?**

- A) The invention of the pyrotechnic inflator
- B) The development of the ball-in-tube mechanism**
- C) The introduction of compressed air cylinders
- D) The patent for inflatable seat belts

**13. What was the name of General Motors' first airbag system marketed in the 1970s?**

- A) Auto-Ceptor
- B) Air Cushion Restraint System (ACRS)**
- C) Supplemental Inflatable Restraint
- D) Safety Net System

**14. In the 1970s, GM's ACRS system sometimes lacked which type of seat belt?**

- A) Lap belts
- B) Shoulder belts**
- C) Three-point belts
- D) Seat belt extenders

**15. What does SRS stand for in the context of airbags?**

- A) System for Rapid Safety
- B) Supplemental Restraint System**
- C) Smart Response System
- D) Safety Regulation Standard

**16. Which automaker introduced the airbag as an option on its flagship saloon model in West Germany in 1981?**

- A) Porsche
- B) Honda
- C) Mercedes-Benz**
- D) BMW

**17. What was the first car to have driver and passenger airbags as standard equipment in 1987?**

- A) Porsche 944 Turbo**
- B) Honda Legend
- C) Chrysler LeBaron
- D) Lincoln Town Car

**18. Which US automaker was the first to fit a driver-side airbag as standard equipment in 1988?**

- A) Ford
- B) General Motors
- C) Chrysler**
- D) Dodge

**19. The United States Intermodal Surface Transportation Efficiency Act of 1991 mandated airbags for which vehicles built after a certain date?**

- A) All vehicles
- B) Passenger cars and light trucks**
- C) Commercial trucks only
- D) Motorcycles and recreational vehicles

**20. What was the purpose of NHTSA initiating new rules for advanced airbags in 1998?**

A) To standardize airbag deployment speeds

**B) To provide automakers with more flexibility and improve occupant protection while minimizing risks to vulnerable occupants**

C) To mandate the use of compressed air for inflation

D) To eliminate the need for seat belts