

Name:

Date:

Vehicle Safety Standards

Instructions: Read the article. Then answer the questions that follow.

By 1965, automobile accidents had become the leading cause of death of Americans under age 44. Both government and manufacturers had largely ignored the issue, though, until a series of events focused national attention on automobile safety and culminated in legal battles and automobile recalls.

In 1966, the National Traffic Safety Agency was established to set federal safety standards for cars, buses, trucks, and motorcycles. Also created in 1966 was the National Highway Safety Agency. Its function was to set standards for state highway safety programs.

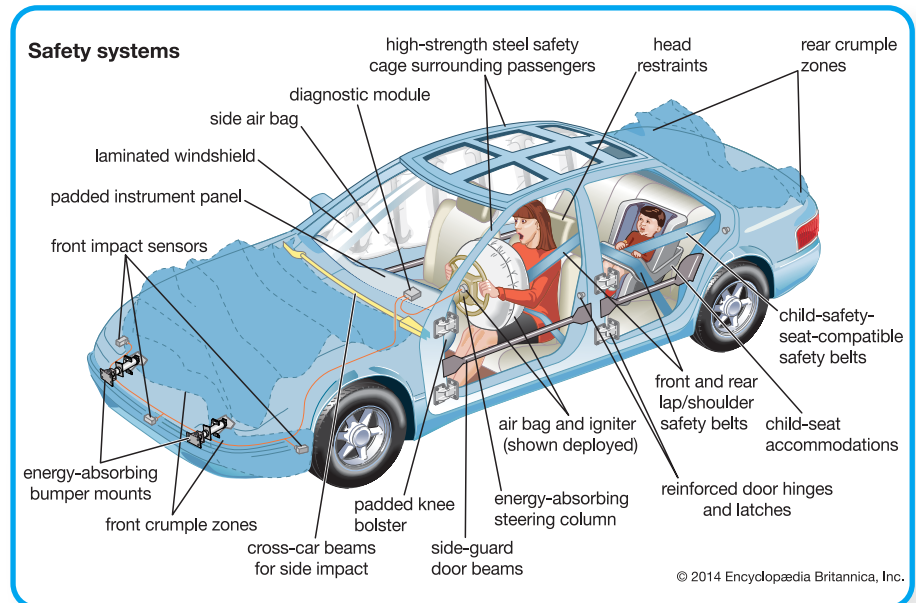
In 1967, the two agencies were merged into the National Highway Traffic Safety Bureau. The bureau was named the National Highway Traffic Safety Administration in 1970.

In 1978, Tennessee became the first U.S. state to adopt child passenger protection legislation, requiring some sort of child restraint device for children under four years of age. Since that time, all other states have passed similar child passenger protection laws.

Air Bags and Seat Belts

Since 1998, all new automobiles sold in the United States have required both driver and front passenger air bags. Hidden within a vehicle's interior, these inflatable pillow-like cushions are triggered to inflate instantly during a collision. Air bags are designed to prevent passengers and drivers from striking the dashboard, window, or windshield of a car in a collision. Side- and rear-impact air bags are also provided on many vehicles.

Air bags inflate to cushion the driver or passenger within 40 milliseconds (0.04 second) after a high-impact front-end collision. The inflation is initiated by sodium oxide, and nitrogen rapidly fills the air bag. The air bag absorbs the force of the human hitting it and then immediately deflates. The speed with which the air bag deploys is about 200 miles (320 kilometers) per hour.



Air bags and other safety systems are built into modern automobiles.

When air bags were introduced, the automobile industry predicted that risk of death in car accidents would decline by 40 percent. Two decades later it appeared that prediction was overly optimistic. There was concern in the late 1990s because air bags had caused injury and even death in some car accidents. Most of those who died from air-bag injury were children and small adults. Particularly vulnerable were infants in rear-facing car seats. Parents were warned never to place such car seats in the automobile's front seat. Infants placed in car seats in the front seat of a car with a passenger-side air bag could be crushed by the impact of the air bag.

Another risk factor was failure to use a seat belt, which helps prevent a person's being thrown from a car or tossed about in it when an accident occurs. Although seat belts can save lives, millions of people fail to use them. Seat belt use saved more than 250,000 lives between 1975 and 2010. Furthermore, it has been estimated that 46 percent of front-seat fatalities could be eliminated by air bags when they are used along with lap or lap-and-shoulder belts. This is a 10 percent improvement over the use of lap and shoulder belt systems alone.

1. What federal safety agencies and legislation were created to address automobile safety?
2. How do air bags and seat belts work together to reduce deaths in car accidents?
3. What do developments in automobile safety suggest about how science, technology, and government regulation influence public safety?

Vehicle Safety Standards Answer Key

1. What federal safety agencies and legislation were created to address automobile safety?

In 1966, the National Traffic Safety Agency and the National Highway Safety Agency were created. They were merged in 1967 into the National Highway Traffic Safety Bureau, which was renamed the National Highway Traffic Safety Administration in 1970. Later, child passenger protection laws were passed beginning with Tennessee in 1978. Then the requirement that all new cars sold since 1998 include driver and front passenger air bags was adopted to improve automobile safety.

2. How do air bags and seat belts work together to reduce deaths in car accidents?

Air bags cushion the driver or passenger during a crash to prevent them from hitting the dashboard or windshield. Seat belts keep people from being thrown around or out of the car. When used together, they can eliminate 46 percent of front-seat fatalities. This is 10 percent more than just using a seat belt alone.

3. What do developments in automobile safety suggest about how science, technology, and government regulation influence public safety?

The creation of safety agencies, the introduction of seat belts and air bags, and the improvement of safety standards show that government regulation and scientific and technological innovation can work together to reduce injuries and save lives on the road.