

# Lap belts, windshield adhesives help reduce highway deaths

*Safety upgrades have saved 328,551 US lives since lap belts became standard equipment in 1960*

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By Frank Greve, KRT News Service

Let us now praise improvements that make cars and trucks safer.

A new analysis by the National Highway Traffic Safety Administration in the US finds that safety upgrades have saved 328,551 US lives since lap belts became standard equipment in 1960. That's roughly the population of Pittsburgh.



In 1960, 4.6 people were killed for every 100 million passenger-vehicle miles on America's highways. Today, according to NHTSA, the fatality rate is 1.25 deaths per 100 million miles.

The improvements include obvious things such as padded dashboards, air bags, child safety seats and shoulder belts, and some things most people never notice, such as better adhesives that help keep windshields - and passengers - in cars in crashes.

Here, in order, are the improvements that have made the biggest difference:

Seat belts. NHTSA credits them with saving 168,524 lives since 1960, more than half the total. In the early 1980s, only 1 in 10 drivers used seat belts. Today, four out of five do.

- **Energy-absorbing steering assemblies.** Rigid steering wheels that impaled drivers were once a leading cause of US highway deaths. Today, steering assemblies collapse like a telescope in a frontal crash and are thrust downward rather than into a driver's chest. That's saved an estimated 53,017 lives.
- **Better door locks.** The safest place to be in a crash is in the car, truck or van - the three vehicles NHTSA studied. Better locks and hinges that won't yield to the force of a crash have saved 28,902 lives.
- **Instrument panel improvements.** Automakers voluntarily switched from metal to padded materials for dashboards beginning in the 1960s, and redesigned them to keep passengers upright during crashes. That's saved 21,043 lives.
- **Side door beams and other strengthening to withstand side crashes.** In cars since 1973 and other vehicles since 1993 they've saved 14,703 lives,
- **Dual brake master cylinders and front disc brakes.** Brakes almost never fail catastrophically anymore. That's saved an estimated 13,053 lives.
- **Front air bags.** New in the 1990s, they ranked third among vehicle lifesaving devices in 2002 the latest year tallied, despite the fact that only 63 per cent of the vehicles on the road had them. Air bags help in accidents for virtually all front passengers 13 and older, though younger children are better off in back seats. Total lives saved: 12,074.
- **Adhesive windshield bonding.** Windshields often popped out in crashes in the days when they were mounted in rubber gaskets glued to the vehicles' frames. Now, most windshields are fastened directly to the frame. In a crash, they remain there, even when partially shattered, and passengers don't fly through them. Lives saved: 6,710.

- **Child safety seats.** Most fatal crashes involve adults driving alone, especially late at night. Indirectly, that's why child safety seats don't get to save more lives. Another reason is that children are often unrestrained or improperly restrained. Saved: 5,954 kids.
- **Improved roof crush strength.** Lives saved: 3,466, mainly thanks to pillars built into frames.
- **"Conspicuity tape" for heavy trailers.** Reflective red – and - white tape on the rear edges of big trucks gives drivers who are following them an earlier alert to the size and speed of the behemoth ahead. Cost: minimal. Lives saved: 1,105.

Now NHTSA is shifting its focus from passive measures such as these to technologies that can help drivers avoid accidents, the agency's administrator, Dr Jeffrey Runge, said recently. Anti-lock brakes, which help drivers stop shorter and straighter on slippery roads, are one example of these active safety improvements.

"We can make big gains by focusing on crash avoidance," Runge told the Automotive News World Congress in Dearborn, Mich., citing electronic stability control, a newer development, as an example. The technology, which can correct for skids and loss of control faster than drivers can, is standard in many 2005 high-end vehicles and available as an option on others for \$500 and up.

The Insurance Institute for Highway Safety, a research and information center in Arlington, Va., estimates that electronic stability control could save 7,000 lives a year.

NHTSA has concluded that highway safety enhancements since the 1960s now cost buyers roughly \$840 per car, van or light truck, the three vehicles studied. By NHTSA's calculation, they've saved one life for every \$750,782 spent on them.

The Department of Transportation considers a regulation reasonable if it saves at least one life per \$3 million spent.

Several safety devices, including side air bags and head air bags, are impressive but too new to rate. But they're proving popular, unlike seat belts, which took decades to get buckled.

"Increasingly, safety does sell," said Susan Ferguson, senior vice president for research at the Insurance Institute for Highway Safety.

"If you have studies to show effectiveness, and the public finds out about them, people do look for safety improvements when they go out to buy a car."

# Car improvements that made the biggest difference

US lives saved  
since 1960:

# 328,551

## US lives saved since 1960

**Seat belts**  
**168,524**

**1** Around 1980, only 1 of 10 drivers used seat belts; today, 4 of 5 do

**Steering assemblies**  
**53,017**

**2** Today, steering assemblies collapse like a telescope in a frontal crash

**3 Improved door locks**  
**28,902**

**Softer instrument panels**  
**21,043**

**4** Automakers switched from metal to energy-absorbent materials for dashboards

**Side door beams**  
**14,703**

**5** Strengthening has helped in side crashes

**Improved brakes**  
**13,053**

**6** Dual brake master cylinders and front disc brakes almost never fail catastrophically

**Frontal air bags**  
**12,074**

**7** Air bags help in accidents for virtually all front passengers 13 and older

**Trailer tape**  
(for heavy trailers)  
**1,105**

Reflective red-and-white tape on rear edges of big trucks helps following drivers see them

**Improved roof crush strength**  
**3,466**

**10** Mainly thanks to pillars built into frames

**Child safety seats**  
**5,954**

**9** Most fatal crashes involve adults driving alone; indirectly, that is why child safety seats do not save more lives

**Adhesive windshield bonding**  
**6,710**

**8** Most windshields are now fastened directly to the frame

