



NTSB 2017-2018

MOST WANTED LIST OF

TRANSPORTATION SAFETY IMPROVEMENTS

Increase Implementation of Collision Avoidance Technologies



HIGHWAY

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Collision avoidance technologies can reduce fatalities and injuries over the long term.

What is the issue?

Motor vehicle crashes continue to be a leading cause of death and injury in the United States. More than 35,000 people died in traffic crashes in 2015, a 7.2 percent increase in deaths from 2014. The last single year increase of this magnitude was in 1966, when fatalities rose 8.1 percent from the previous year.

Vehicles become involved in crashes for numerous reasons, but driver error is the single biggest factor. In 2015, the National Highway Traffic Safety Administration (NHTSA) found that drivers were the primary cause of 94 percent of highway crashes. The cause of driver error can vary from distraction to impairment, but most frequently, it is due to driver inattention.

Driver inattention played a critical role in 11 crashes we investigated between 2012 and 2015. These crashes involved drivers failing to respond in time to obstacles ahead of them, and they resulted in 32 fatalities and 115 injuries. For example, in one accident that occurred on March 3, 2013, in Elizabethtown, Kentucky, a truck-tractor in combination with a semitrailer struck a sport utility vehicle (SUV) after the driver failed to slow down in time. A postcrash fire ensued, killing six of the SUV's eight occupants.

Crashes involving sudden roadway departures are also common and frequently preventable. In one such 2014 crash in Red Lion, Delaware, a motorcoach driver failed to negotiate a curve. The bus departed the roadway and overturned, killing three passengers and injuring the driver and 47 others.

What can be done?

Technology can help drivers avoid crashes, whether they result from driver error or from circumstances outside the driver's control, such as sudden intrusions into the driver's lane (for example, road hazards and other vehicles).

In-vehicle collision avoidance technologies, such as forward collision warning systems (FCWSs) and autonomous emergency braking (AEB), are especially helpful for avoiding or mitigating the impact of rear-end crashes, which represent nearly half of all two-vehicle crashes. Other collision avoidance technologies, such as adaptive cruise control, lane departure warning systems (LDWSs), blind spot detection, and advanced lighting technology can help prevent a crash regardless of the cause. These technologies improve a driver's view of the roadway, alert drivers to impending danger ahead or on the side of the vehicle,



Continued on next page

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Continued from previous page

maintain safe travel distances between vehicles, and warn drivers if they perform a maneuver that could increase the risk of a crash (such as a sudden lane change). Some technologies even initiate braking if drivers don't (or can't).

Collision avoidance technologies can reduce fatalities and injuries over the long term. In 2012, NHTSA predicted that AEB (meeting certain requirements) could prevent 13,000 to 28,000 minor injuries and 500 to 700 serious injuries from rear-end crashes, and could save as many as 65 lives each year.

In a 2015 study by the University of Michigan Transportation Research Institute, researchers found that in the large motor carriers they surveyed, LDWS reduced crashes by 14 percent, electronic stability control by 19 percent, FCWS by 14 percent, blind spot detection by 5 percent, and vehicle communications systems by 9 percent.

We have encouraged technological countermeasures to prevent or mitigate crashes since 1995. In 2001, we released a special investigation report that focused on how collision avoidance technologies could mitigate or prevent passenger and commercial vehicle rear-end crashes. We updated that report in 2015.

Passenger vehicles: Currently, the availability of these technologies to consumers varies by passenger vehicle manufacturer and by model. In some cases, crash avoidance technologies are bundled with optional luxury packages. We believe that automakers should offer collision avoidance technologies—at a minimum, FCWSs—as standard features in their vehicles.

We are encouraged that there has been some progress in this area. For example, on March 17, 2016, 10 months after we recommended it, passenger vehicle manufacturers agreed to install collision avoidance systems as standard equipment. NHTSA and the Insurance Institute for Highway Safety (IIHS) announced a commitment by more than 99 percent of the US auto market to make AEB a standard feature on all new cars no later than NHTSA's 2022 reporting year. NHTSA estimates that the agreement will make AEB standard on new cars 3 years faster than could be achieved through the regulatory process, preventing as many as 28,000 crashes and 12,000 injuries in just that time period.

In our 2015 report, we recommended that NHTSA expand its New Car Assessment Program (NCAP) to include ratings for collision avoidance systems, which would incentivize passenger vehicle manufacturers to include collision avoidance systems as standard equipment in all new vehicles. In late 2015, NHTSA announced it added two AEB systems to its NCAP and will update its 5-star rating system to include AEB as a recommended safety technology beginning in model year 2018. Although these are important developments, we must ensure this becomes reality and that other technologies are rated and displayed on vehicle window stickers so prospective purchasers have the information they need to make the safest choice.

Commercial vehicles: We recommended that, as soon as possible, NHTSA develop performance standards for collision avoidance systems in commercial vehicles. But companies and commercial vehicle operators shouldn't wait to be told what to do by regulators; they should install these technologies—at a minimum FCWSs—in all their fleets. In a recent study of motor carriers, the Federal Motor Carrier Administration found some collision avoidance technologies to be beneficial and endorsed (but did not require) their voluntary use.

All drivers—commercial and private—need to understand how collision avoidance technologies work. We encourage consumers to choose vehicles with collision avoidance systems, particularly those with FCWSs and AEB, and we urge fleet owners to install collision avoidance technologies and train their drivers on their capabilities.

In October 2016, the NTSB, in conjunction with the National Safety Council, held a public panel event and roundtable, called: [Reaching Zero Crashes: A Dialogue on the Role of Advanced Driver Assistance Systems](#). The message from all participants was clear: saving lives and reducing injuries from crashes depends on the broad deployment of collision avoidance technology in all new vehicles and a focus on training and educating drivers. ■

The NTSB Most Wanted List highlights safety issues identified from the NTSB's accident investigations to increase awareness about the issues and promote recommended safety solutions.

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the federal government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

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Related Accidents*

Date	Location	Accident ID
March 2, 2013	Elizabethtown, KY	HWY13FH008
January 27, 2014	Naperville, IL	HWY14FH002
September 21, 2014	Red Lion, DE	HWY14FH013
December 2, 2014	Knoxville, TN	HWY15FH002
March 30, 2015	Moore Haven, FL	HWY15FH008

*For detailed accident reports visit www.nts.gov

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Critical changes needed to reduce transportation accidents and save lives.

