

# Bring it Home Safely . . . How You Can Use Technology to Prevent Crashes

## What Can Be Done?

*ADAS 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 (e.g., road hazards and other vehicles). ADAS technologies are especially helpful for avoiding or mitigating the impact of rear-end crashes, which represent nearly half of all two-vehicle crashes.

These technologies improve a driver's view of the roadway, alert drivers to impending danger ahead of or on the side of the vehicle, 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 systems even initiate braking if drivers don't (or can't).

*Collision avoidance can reduce fatalities and injuries over the long term.* NHTSA estimates that automatic emergency braking could prevent more than 11,000 crashes, 7,700 injuries, and more than 170 deaths involving heavy vehicles.<sup>[2]</sup> What's more, researchers from the University of Michigan Transportation Research Institute have found lane departure warning reduced crashes by 14 percent, electronic stability control by 19 percent, forward collision warning by 14 percent, and blind spot warning by five percent.<sup>[3]</sup>

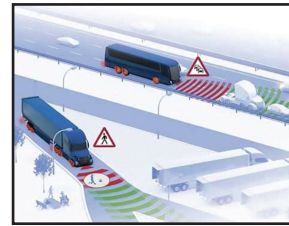
<sup>[2]</sup> A Target Population for Automatic Emergency Braking in Heavy Vehicles, (July 2017), National Highway Traffic Safety Administration

<sup>[3]</sup> eDeploying Safety Technologies in Commercial Vehicles, B. M. Belzowski, (January 2015), University of Michigan Transportation Research Institute

## Available ADAS Solutions

There are many types of ADAS solutions now available which have the most potential to prevent fatalities, injuries, and crashes. These include:

- automatic emergency braking, and adaptive cruise control systems,
- lane keep assist, lane centering, and adaptive steering control,
- lane departure, forward collision, and blind spot detection), and;
- driver- and road-facing cameras for driver training, and camera-based mirror systems for enhancing driver field-of-view).



**Automatic Emergency Braking**

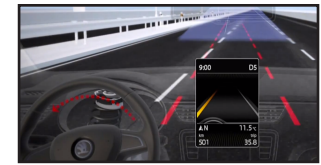
Automatic emergency braking or AEB systems detect when a truck is in danger of striking the vehicle in front of it and braking automatically if needed. Adaptive cruise control or ACC systems help with acceleration and/or braking to maintain a prescribed distance between it and the vehicle in front. Some systems can come to a stop and continue. Brake Hold Mode allows drivers to remove their foot from the brake pedal and keep their vehicle at a stop when sitting in traffic, at a weigh scale, or a loading dock.



**Lane Centering Assist**

Lane keep assist (LKA), side guard assist (SGA), lane centering (LC), and adaptive steering control (ASC), all help drivers maintain proper vehicle control and

traffic spacing. Adaptive steering control assists by determining road curvature and an apparatus for trimming the steering angle of the vehicle in response to road curvature. Features such as lane departure warning (LDW), forward collision warning (FCW), and blind spot warning (BSW) help drivers by warning them of encroaching vehicles, unintentional moves or lane drifting.



**Lane Departure Warning**

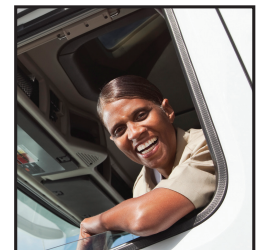
Road-facing cameras are useful for crash documentation and training, and camera-based mirror systems (CMS) for enhancing driver field-of-view. These systems help industry stakeholders provide driver feedback and improve driver performance. These and other features are now available thanks to new sensors and technologies that allow these options to be integrated for maximum efficiency.



**Road-Facing Cameras**

## Saving Lives Is In Your Hands!

If ADAS is present, leave it on! Leading industry organizations support ADAS-equipped trucks and ask that drivers keep ADAS activated on route. Disabling or improperly maintaining ADAS eliminates all of the benefits this life-saving technology has to offer. Smart operators support effective new technologies that help them do their jobs more safely and productively.



# ADAS Saves Lives . . .

## What's the Problem?

Motor vehicle crashes are a leading cause of preventable death in the U.S. In 2021, 5,991 people died in 5,149 crashes involving large trucks. Additionally that year, there were 110,000 crashes, resulting in 172,000 injuries, according to the Federal Motor Carrier Safety Administration (FMCSA).<sup>[1]</sup> Research shows a large percentage of these crashes not the commercial vehicle driver's fault.

## What's the Solution?

Advances in vehicle safety technology — called Advanced Driver Assistance Systems (ADAS) — can help substantially reduce the number of these crashes, injuries, and deaths. ADAS works in the background to protect truck drivers from other drivers' inattentiveness and bad behavior. Many of today's vehicles can be specified with ADAS technologies that monitor driver input and the environment around the vehicle and warn the driver when they detect the possibility of a collision. These ADAS-equipped vehicles may also automatically brake or steer the vehicle if the driver does not act to avoid the collision.

## How Can I Help?

Adoption of these lifesaving technologies has been slow on Class 3-8 medium- and heavy-duty trucks. While a one-size-fits-all approach will not work for today's diverse industry, owner-operators, small-, medium- and large-sized fleets, vocational operators and leasing operations can all specify ADAS to improve bottom lines and save lives.

**Consider specifying ADAS technology on your next vehicle purchase or learn how you can add ADAS technology to your existing vehicles at [www.techceleratenow.org](http://www.techceleratenow.org).**

<sup>[1]</sup> Large Truck and Bus Crash Facts 2021 (Nov. 2023), Federal Motor Carrier Safety Administration

# About TechCelerate Now . . .



U.S. Department of Transportation  
Federal Motor Carrier Safety Administration

The Federal Motor Carrier Safety Administration's (FMCSA) new initiative in partnership with the Intelligent Transportation Systems (ITS) Joint Program Office — entitled "**TechCelerate Now**" — is focused on accelerating the adoption of ADAS by the trucking industry to reduce fatalities and prevent injuries and crashes. Many industry leaders are working together on the "**TechCelerate Now**" Program, under the leadership of the American Transportation Research Institute (ATRI), the American Trucking Associations (ATA), ATA's Technology & Maintenance Council (TMC), and the Owner-Operator Independent Drivers Association (OOIDA) Foundation.



**Want more information on the Tech-Celerate Now Program or How to Specify ADAS on Your Next Truck?  
Visit [www.techceleratenow.org](http://www.techceleratenow.org)**

**Look for Bogie,  
your faithful ADAS  
companion for  
highway safety!**



# A Truck Operators' Guide to Advanced Driver Assistance Systems (ADAS)

**Learn how YOU can use ADAS Technology to improve your ride and save lives!**



**Accelerate Your Technology...**



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Federal Motor Carrier Safety Administration

[www.techceleratenow.org](http://www.techceleratenow.org)