

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 ^[2]. 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. ^[3]

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

^[3] Deploying Safety Technologies in Commercial Vehicles, B. M. Belzowski, (January 2015), University of Michigan Transportation Research Institute.

Four Types of ADAS Solutions

There are four general performance categories of ADAS which have the most potential to prevent fatalities, injuries, and crashes: **braking, steering, warning, and monitoring.**

1. ADAS — Braking

This category includes automatic emergency braking (AEB), and adaptive cruise control (ACC) systems. AEB systems detect when a truck is in danger of striking the vehicle in front of it and braking automatically if needed. ACC helps 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. While not required for ADAS, air disc brakes (ADB) are foundation brake systems that use calipers to squeeze pairs of pads against a disc or rotor (instead of using shoes to apply pressure against a drum in traditional drum brakes) to create friction needed to stop the vehicle. They can offer improved brake performance in certain applications — *check with your vehicle and/or component manufacturer to determine whether ADBs or drum brakes are best for your application.*



Automatic Emergency Braking

2. ADAS — Steering

This category includes lane keep assist (LKA), lane centering (LC), and adaptive steering control (ASC), all of which help drivers maintain proper vehicle control and traffic spacing.



Lane Centering Assist

3. ADAS — Warning

This category includes lane departure warning (LDW), forward collision warning (FCW), and blind spot warning (BSW). These systems help drivers by warning them of encroaching vehicles, unintentional moves or lane drifting.



Lane Departure Warning

4. ADAS — Monitoring

This category includes driver-facing and road-facing cameras for training, and camera-based mirror systems (CMS) for enhancing driver filed-of-view. These systems help industry stakeholders provide driver feedback and improve driver performance.



Driver- and Road-Facing Cameras

Saving Lives Is In Your Hands!

Turn ADAS on and 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 2017, 4,761 people died in 4,237 crashes involving large trucks. Additionally that year, there were 102,000 crashes, resulting in 148,000 injuries, according to the Federal Motor Carrier Safety Administration (FMCSA)^[1].

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. 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 spec'ing ADAS technology on your next vehicle purchase or learn how you can retrofit ADAS technology at www.tech-celeratenow.org.

[1] Large Truck and Bus Crash Facts 2017 (May 2019), Federal Motor Carrier Safety Administration

About Tech-Celerate Now . . .

The Federal Motor Carrier Safety Administration's (FMCSA) new initiative in partnership with the Intelligent Transportation Systems (ITS) Joint Program Office — entitled "**Tech-Celerate 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 "**Tech-Celerate 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.tech-celeratenow.org**



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

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



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