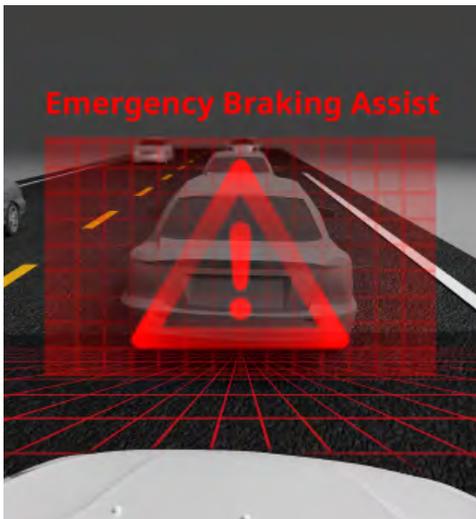


Advanced Driver Assistance Systems: What Drivers Should Know



Many systems start with attention-grabbers such as beeping, a flashing dashboard icon or a vibrating steering wheel. If the driver does not respond, more advanced systems may take control of the vehicle to prevent an imminent crash. What will your vehicle do? How should you respond?

We continue to see integration of Advanced Driver Assist Systems (ADAS) in new vehicle lines as safety technology develops and evolves. ADAS are designed to assist drivers by warning drivers of hazardous conditions and/or taking over vehicle control when imminent crashes are detected. An Insurance Institute for Highway Safety (IIHS) study found there are clear benefits of crash avoidance technologies. For example, vehicles equipped with forward collision warning (FCW) and automatic emergency braking (AEB) had 50% fewer rear-end collisions.¹ A University of Michigan Transportation Research Institute study found similar benefits of using ADAS.²

Key Items Drivers Should Know About ADAS

As with any new technology, drivers need to understand how ADAS functions to receive the full benefit and prevent potential negative impacts:

1. Drivers must understand what systems their vehicle is equipped with and how the systems function:
 - a. While sounding similar, ADAS among manufacturers, vehicle models and vehicle years are different. The terminology can be confusing; is emergency braking assist the same as automatic emergency braking? Don't assume a vehicle's system works like another vehicle you have driven.
 - b. Understand the difference between alerts (warnings) and systems that take control.
 - c. Review your vehicle's operator's manual to:
 - i. Identify what systems your vehicle has.
 - ii. Understand how the system operates and how you are supposed to respond when they are activated.
 - iii. Understand limitations of the system.
2. Do not turn off or disable an ADAS unless directed by the driver's manual or your employer for certain driving situations or if it is malfunctioning. Disabling the system:
 - a. Places you in a less safe environment.
 - b. Endangers another driver of the vehicle, who may not realize the system has been turned off and may be relying on it.

¹ Real-world benefits of crash avoidance technologies, Insurance Institute for Highway Safety, Highway Loss Data Institute, June 2019. [iihs.org](https://www.iihs.org).

² Analysis of the Field Effectiveness of General Motors Production Active Safety and Advanced Headlighting Systems, University of Michigan Transportation Research Institute, September 2019.



Do not become over-reliant on your ADAS. ADAS has many limitations, such as problems identifying pedestrians and bicyclists and not working well in all road configurations and weather environments. Focus 100% on your driving duties.

c. May expose you and your organization to additional liability in an accident that could have been prevented if the ADAS had not been disabled.

3. Do not become over-reliant on ADAS.

a. ADAS is designed to assist a driver but the driver must still maintain full control of the vehicle. Always practice good defensive driving skills. This includes full attention on your driving, maintaining adequate space around your vehicle, scanning, and anticipating and reacting to the actions of others.

b. Do not take risks like following too close or performing distracting activities, thinking the ADAS will cover for you. These systems do not work in all driving situations and for all hazards.

i. Many ADAS systems are good at recognizing cars but are not good at recognizing motorcycles, bikes, pedestrians, animals or other objects on the roadway.

ii. Many systems do not function well when on roadways without proper lane markings, on curves, during inclement weather or when sensors are obstructed or damaged.

COMMON ADAS TECHNOLOGY

Forward Collisions

Adaptive Cruise Control (ACC): Similar to cruise control, it is set by the driver when desired, typically on interstates. The system will maintain a constant following distance from the vehicle in front. Designed to prevent rear-end collisions and maintain proper following distance.

Forward collision warning (FCW): This feature warns a driver with audio and/or visual warnings that there is a possibility of a collision with an object in the front of the vehicle. This feature is sometimes paired with automatic emergency braking to stop the vehicle on its own before the driver reacts.

Automatic Emergency Braking (AEB): Often paired with FCW, this feature applies the brakes automatically when the vehicle senses a possibility of a collision in front of the vehicle.

Pedestrian Automatic Braking: Detects pedestrian crossing in front of the vehicle and warns driver; applies brakes automatically if collision is imminent.

Adaptive Lighting: Automatically switches your vehicle's headlights to the lower beam when an oncoming vehicle approaches and back to the high beam when it passes.

Lane Change and Blind Spots

Lane departure warning: Alerts the driver when they are drifting out of their lane of traffic. Typically, does not alert if the driver has turned on a blinker.

Active lane keeping: Provides corrective steering and braking to keep the vehicle in the current lane if the driver is not intentionally changing lanes.

Lane Centering Assist: Provides continual steering to keep vehicle centered in its lane.

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Blind Spot Detection: Warns of a vehicle in the driver's blind spot. Often only triggered when the blinker is activated or the driver turns the steering wheel to change lanes.

Backing and Parking

Rearview Video or Back-up Camera: Provides the driver with a clear view directly behind the vehicle.

Rear Automatic Braking: Detects a potential rear collision and automatically engages the brakes if a crash is imminent.

Rear Cross Traffic Alert: Warns the driver of potential rear collisions that may be outside the view of the backup camera.

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