ANSTSE
Association of National Stakeholders in Traffic Safety Education

What Driver Educators Should Know About Vehicle Technology

Driver educators play a critical role in educating new drivers about the rules of the road, safe driving habits, and the proper operation of the vehicle. The importance of this role has become more pronounced as vehicle technology has evolved, and new safety technologies have rapidly become standard on vehicles. The mere presence of new safety technologies alone may not produce reductions in collisions and fatalities if drivers do not understand the role of the driver in the safety equation, and if they are over-confident in the ability of the technologies to protect them.

To prepare young drivers to use these new technologies in tandem with safe driving practices, driver educators must keep pace with these advances and maintain a working knowledge of current technologies, and their limitations. This knowledge is essential to teach young drivers about the importance of adopting safe driving habits to help maximize the potential benefits offered by these features. It must be stressed that the mere presence of safety features on a vehicle is not sufficient to reduce crashes. Drivers must understand how these features work and driver educators have an important role to play in helping new drivers learn the core skills needed for safe driving. This fact sheet provides an overview of some of the latest safety features, and contains links to key resources to learn more about the different safety technologies that are now available.

Types of safety features:

Vehicle safety technology can be broadly classified into two categories of features: passive safety features and active safety features.

Passive safety features help protect vehicle occupants once a vehicle crash has already occurred or is occurring. Their main function is to protect the occupants while the crash is in progress and driver input is not necessary to engage these features. Examples of these features include: seatbelts, airbags, headrests, or engineering designs such as crumple zones.

Active safety features help prevent or mitigate a crash. Often features are designed to alert drivers to potentially hazardous situations and prompt them to take control of the vehicle. Some features may also help to correct driver error but often driver input such as steering or braking is required before these features are activated.

Some of the most common active safety features include:

- **Adaptive Cruise Control:** This is an advanced form of cruise control which can not only maintain your speed but also maintains following distance behind other vehicles as well. It provides some limited braking however it will need input from the driver in most situations and cannot perform lane-changes.
- **Automatic Emergency Braking:** This feature can sense slow or stopped traffic ahead and urgently apply the brakes if the driver fails to respond. This feature may typically be paired with a feature called forward collision warning. That feature scans the road ahead while you drive, warning you if you're about to crash into a car. If you don't react in time,

automatic emergency braking quickly slows down your car or can even bring your car to a stop. It can't always prevent a rear end collision, but may lessen the severity.

- **Curve Speed Warning:** This system will warn you when you are approaching a sharp turn or an exit too quickly. It uses a GPS system to navigate when these curves are approaching and some systems can even interact with national databases to alert the driver to high-risk curves. However it will not navigate the curve for the driver nor will it reduce vehicle speed in order to help the driver overcome the curve.
- **Forward Collision Warning Systems:** These systems are designed to warn drivers if they are about to hit an object on the road ahead. These systems use audible, visual, and vibrating alarm warnings to warn drivers of an impending collision. In some vehicles, this feature may even apply the brakes if drivers fail to respond. However the design of these systems is not standard across manufacturers and they vary in terms of the type of alarm, whether the brakes engage, and what type of objects are detected.
- **Lane Keeping Assist:** This system can help return you to your lane if you drift out by signaling an alert, via a sound, flashing light or vibration. Respond by returning to your lane. If you do not take action, this feature may gently steer you back to the center of the lane. This could help prevent a crash. This feature relies on painted lane markings to operate. These include the markings between lanes and along the edges of the road. Some versions of this feature may also help prevent you from driving off the road.

In addition, many vehicle manufacturers have developed their own terminology to describe safety features and this can make it confusing for drivers, and difficult to figure out what features are on the vehicle that they drive. For example, electronic stability control systems may alternately be referred to as dynamic stability control, vehicle stability control, StabiliTrak or AdvanceTrac. The good news is that despite differences in terminology, many of these features function in similar ways.

Despite recent advances in vehicle safety, core driving skills are still mandatory for safe driving and to reap the benefits of these technologies. Like any technology, safety features are imperfect and may fail under certain conditions. Of concern, this problem will become increasingly pronounced with advances in vehicle automation. Driver educators have an important role to play in educating drivers to maintain situational awareness of their environment while using this technology to augment their safety.

Driver educators can access the latest information about the most recent safety features and help students and other drivers adapt to the changing road environment using user-friendly online resources. My Car Does What (https://mycardoeswhat.org/) contains comprehensive information about a wide range of safety features, and more in-depth information about the features included for specific makes and models can be accessed through consumer reports. Brain on Board (http://brainonboard.ca/about/) also contains a variety of fact-sheets, posters and public service announcements that can be used in a classroom setting. Additionally, ANSTSE provides resources that cover all aspects of driver education and the current developments taking place across the U.S. (http://www.anstse.info/Resources.html).

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