SAFE VEHICLE OPERATION

Multiple factors can affect set following intervals and create additional driving considerations. When operating a vehicle with the OnGuardACTIVE Collision Mitigation System, it is important to remember:

• **OnGuardACTIVE should only be considered as an aid and is not intended to replace driver control over the vehicle at any time.**

• Like cruise control in general, ACC should not be used when weather, road surface or conditions require longer following intervals and your full control over the speed of the vehicle. Such conditions may include: snow, sleet, rain, fog, icing, etc.

• When operating your vehicle, always use safe driving techniques. The driver is always the most important element in safe vehicle operation.

• OnGuardACTIVE is only intended to assist reaction and response time. **OnGuardACTIVE is not a substitute for proper driver braking and should be considered only as a driver assistance system.**

UNINTENDED EVENTS

The OnGuardACTIVE collision mitigation system is engineered to prevent and/or mitigate as many accidents as possible. Radar technology is not perfect; in every system it is possible that an unintended braking event may occur.

In the rare event that you experience a false alert, or unintended braking event, you may experience the following sequence of events:

• Less than 0.4 seconds of braking.

• The truck and trailer brake lights will illuminate.

• Your OnGuardACTIVE display screen will change to a collision warning (red).

• Your OnGuardACTIVE display screen will change to a collision warning (red) and issue a short audible warning.

• If you do not have ACC engaged, you can reapply the throttle and continue on your way.

• If ACC is engaged, depending on your vehicle configuration, you may have to simply reapply the cruise control button or turn ACC off and back on again. It is possible that you may lose the ability to throttle the vehicle for a short time (couple of seconds).

WARNING OnGuard® is designed to create high vehicle deceleration (*without driver intervention*) in certain situations. To reduce the risk of injuries caused during OnGuard®-activated vehicle deceleration, all vehicle occupants should be correctly seated and properly belted or restrained during vehicle operation. All loose items should be secured so that they will not fly forward and cause injury during a deceleration event. The use of OnGuard® in vehicles not equipped with seat belts may expose non-belted passengers to injuries due to system initiated sudden vehicle deceleration, despite vehicle compliance with applicable safety standards.

SYSTEM LIMITATIONS

The OnGuardACTIVE CMS brakes for moving and stationary objects located directly in front of your vehicle and does not operate when your speed is less than 15 mph or over 77 mph. Accordingly, OnGuardACTIVE:

• Will not react and alert you to objects crossing in front of you or oncoming traffic.

• Should not be relied on to track lead vehicles when traveling through a severe curve or winding road.

• Should not be relied upon to track smaller objects (e.g. motorcycles, mopeds, bicycles, pedestrians, etc.)

• Should not be relied on to alert drivers to vehicles in an adjacent lane.

Drivers should take into account the road conditions, and any other factors they are encountering, as they choose how to react to any alerts they receive from the OnGuardACTIVE system.

ABOUT WABCO

WABCO (NYSE:WBC) is a leading global supplier of technologies and services that improve the safety, efficiency and connectivity of commercial vehicles. Founded 150 years ago as the "Westinghouse Air Brake Company," WABCO continues to pioneer breakthrough innovations for advanced driver assistance, braking, stability control, suspension, transmission automation and aerodynamics. WABCO reported sales of $3.3 billion in 2017 and has 15,000 employees in 40 countries. For more information, visit:

WWW.WABCO-NA.COM

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OnGuardACTIVE ®

COLLISION MITIGATION SYSTEM

Driver Tips

WABCO

WABCO's OnGuardACTIVE is a radar-based active safety system that offers Adaptive Cruise Control, Forward Collision Warning and Collision Mitigation. OnGuardACTIVE detects objects ahead and measures the vehicle's position and speed in relation to other vehicles on the road to warn the driver of a possible collision by providing audible, visual and haptic warnings. The system will apply the brakes to reduce the risks and severity of rear-end collisions. **OnGuardACTIVE is not intended to replace driver control of the vehicle at any time. You, as the driver, remain in control of your vehicle and determine the actions that are necessary for safe operation.**

ADAPTIVE CRUISE CONTROL

Adaptive Cruise Control (ACC) automatically adjusts the speed of your vehicle while in cruise control and attempts to maintain a set following interval of 3.6 seconds when there is a vehicle ahead. ACC works with conventional cruise control to maintain the set cruise speed when the lane ahead is clear and will automatically adjust the vehicle's speed to maintain the set following interval when a vehicle ahead is detected.

COLLISION MITIGATION SYSTEM

OnGuardACTIVE's Collision Mitigation System (CMS) assists the driver in recognizing and responding to dangerous driving scenarios that could lead to a rear-end collision. The system responds by sending warnings, automatically reducing engine torque and applying foundation brakes. OnGuardACTIVE's CMS provides both visual and audible alerts through an in-cab dash display. If a potential collision is developing and the driver does not take action to decelerate the vehicle, OnGuardACTIVE's active braking feature issues a haptic warning (short brake pulse) and automatically de-throttles the engine. If a potential collision still exists, and the driver still has not taken the appropriate action, OnGuardACTIVE's CMS will apply the foundation brakes. When OnGuardACTIVE applies your vehicle's brakes, your brake lights will come on. **The active braking application is intended to assist the driver to avoid or reduce the severity of a rear-end collision. The driver must take the appropriate corrective action in response to the collision warning. OnGuardACTIVE warnings will not be issued below a vehicle speed of 15 mph.**

ONGUARDACTIVE DISPLAY

Icon Colors:

Blue: Stand-by screen

Green: System is actively tracking a vehicle ahead

Yellow: Following distance alert. Driver is within 1.5 seconds of a slower vehicle

Red: Collision warning, haptic warning, emergency braking

Amber: Fault code detected

OPERATING MODES

Adaptive Cruise Control Not Set

Your vehicle operates as usual when the ACC speed is not set. The system will still give audible and visual warnings when it detects a possible rear-end collision. CMS is active depending on settings from the manufacturer and will apply brakes if deemed necessary.

Cruise Control not set
No lead vehicle detected

Cruise Control not set
Lead vehicle detected

Adaptive Cruise Control Set

When the ACC is set, the set cruise speed appears on the display. When a slower vehicle is detected in front of you, ACC will attempt to reduce your speed to match the speed of the lead vehicle. This speed adjustment may momentarily drop lower than the lead vehicle in order to maintain a 3.6 seconds following interval between you and the vehicle ahead of you. While ACC is on, the display will give visual and audible collision warnings, and the system will control throttle and apply engine and service brakes if needed while attempting to maintain a set following interval.

Cruise Control set
No lead vehicle detected

Cruise Control set
Lead vehicle detected

Following-Distance Alert: ACC Not Set

The Following-Distance Alert will provide an audible alert and the in-cab dash display screen will turn yellow if you are following a slower vehicle too closely (within 1.5 seconds). This alert will end when the following distance is increased to a safe level.

Cruise Control not set
Following distance alert

Object Collision Warning

Following-Distance Alert: ACC Set

When you are in cruise control mode, the Following-Distance Alert will provide an audible alert and the in-cab dash display screen will turn yellow if the driver uses the accelerator pedal to override the ACC and approaches a vehicle too closely. The Following-Distance Alert will not provide warnings when your vehicle speed is below 15 mph or over 77 mph.

Collision Warning & Mitigation

When an unforeseen event occurs, such as another vehicle enters your lane traveling slower than you are, or the gap between you and a moving vehicle in front of you becomes too close, OnGuardACTIVE will provide an audible alert and the display will turn red with a collision warning symbol.

If the system determines that a rear-end collision is imminent, it will automatically apply the brakes to reduce the vehicle's speed. You may also feel a short brake pulse to warn you of a collision. The driver must also take the appropriate corrective action to avoid dangerous driving situations.

If OnGuardACTIVE detects a stationary object (such as a disabled car) it will provide an audible alert, followed by a haptic alert and then brake application to reduce the vehicle's speed. CMS will not be active when your vehicle's speed is below 15 mph.

Stationary Object Warning

Haptic Collision Warning

System Errors

If you receive an OnGuardACTIVE system error notification, your display will show an icon with exclamation point. While your vehicle will still be operable, certain OnGuardACTIVE functions such as Adaptive Cruise Control will not be available. It is recommended that you find a safe place to park and turn off the ignition for about three minutes. While stopped, inspect the radar and clear any blockage. This will reboot your systems and may correct the error. If the condition persists, you should contact your fleet manager to review the issue. Any error information should be recorded for troubleshooting purposes.

System error notification