



Bosch research shows benefits of driver-assistance systems in heavy trucks

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- ▶ Research quantifies potential savings of equipping Class 7 and 8 trucks with advanced driver-assistance systems
- ▶ Lateral actuator systems may reduce costs associated with property damage by up to 35 percent
- ▶ Injuries from large truck crashes potentially reduced by up to 23 percent and associated fatalities by up to 19 percent

Plymouth, Mich. – The human costs associated with injuries and deaths from vehicular accidents are substantial and Bosch continues to seek and introduce products to avoid accidents and the associated injuries. New accident research from Bosch reveals that equipping heavy trucks with advanced driver assistance systems (ADAS) such as lateral actuator systems may also significantly reduce the costs of accidents influenced by heavy trucks. Lateral actuator systems are ADAS solutions that provide automated steering input for functions like Lane Change Assist (LCA) and Lane Keeping Support (LKS).

The Bosch accident research, titled “Safety + Enhanced Driver Comfort: Steering in Commercial Vehicle ADAS Systems,” finds that lateral actuator systems in Class 7 and 8 trucks can reduce the costs of accidents by up to \$0.04 per mile, or \$3,700 annually per heavy truck.

“Increasing levels of automation and driver assistance help to reduce accidents and make drivers’ lives easier,” said Kevin O’Keefe, regional president of Automotive Steering for Bosch in North America. “The Bosch accident research findings illustrate how features like Lane Change Assist and Lane Keeping Support can contribute positively in multiple ways – reducing property damage, injuries and fatalities.”

Reducing damage and saving lives

The Bosch accident research reviewed public crash data to identify correlating statistics between vehicle types and the severity of crashes. This data was utilized to calculate a Field of Effect (FoE) for accidents involving large trucks. To

calculate FoE, crashes were examined that could have been mitigated or avoided by using lateral actuator systems – more specifically, LCA and LKS.

Based on the accident research, the data shows injuries from class 7 & 8 truck crashes could be reduced by up to 23 percent and fatalities by up to 19 percent when they are the accident-triggering vehicle. Additionally, it is estimated that Lane Change Assist and Lane Keeping Support could reduce the property damage from class 7 & 8 trucks when they are the accident-triggering vehicle by up to 35 percent.

Enhancing driver safety and comfort

From automated transmissions and adaptive cruise control to automated emergency braking and the introduction of Level 2 steering systems in North America in 2020, technological innovations in trucking over the past 20 years have continually enhanced safety and driver comfort.

Key enablers for higher levels of driver comfort include features such as active pull compensation, active steering damping, and reducing steering effort. Safety features such as lane keeping / centering assistance and active lane departure protection aid the driver and enhance safety for all road users. Furthermore, safety features like hydraulic failure detection and added steering assist can support the driver during hydraulic failure or drastic events like tire blow outs. The goal of all these technologies is to enhance safety on the road and driver comfort in the cab.

Financial return for investment in safety technology

The KABCO injury scale, developed by the National Safety Council, provides a specific process to classify the costs of crashes. Utilizing the KABCO scale and based on a driving distance of 100,000 miles per year – the Federal Highway Administration’s estimate for long-distance heavy trucks –the FoE was translated into dollars. The in-depth accident research ultimately shows lateral actuator systems can help reduce accident-related costs by nearly four cents per mile (\$0.037) and up to \$3,700 annually per heavy truck.

The research shows that even at an assumed 50 percent efficiency of the FoE, the savings from a lateral actuator system could total more than \$9,000 per truck in five years.

“The full value when injuries or fatalities from vehicular accidents are avoided is ultimately incalculable,” O’Keefe said. “Safety technologies like LCA and LKS help to reduce accidents, which is the ultimate goal across the commercial vehicle industry.”

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About Bosch

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The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-four percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The remaining shares are held by the Bosch family, by a corporation owned by the family, and by Robert Bosch GmbH. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust.

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