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Subaru's EyeSight Advances in Bicyclist Detection

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Subaru, renowned for its commitment to automotive safety, has recently showcased encouraging results in its ongoing efforts to enhance the effectiveness of the EyeSight crash avoidance system. According to a comprehensive study conducted by the Insurance Institute for Highway Safety (IIHS), earlier versions of the EyeSight system demonstrated a notable ability to prevent real-world collisions with bicyclists traveling parallel to the road. This marks a significant milestone in the realm of automotive safety technology.

What EyeSight Has to Offer

The EyeSight system, a comprehensive suite of advanced driver assistance features, comprises cutting-edge technologies such as automatic emergency braking (AEB) and more. Enabled by two strategically placed cameras positioned behind the windshield, this system has been at the forefront of bicycle crash prevention, particularly concerning parallel bicyclist scenarios. While the initial two generations of EyeSight focused on detecting parallel-path cyclists, their impact on overall bicycle-related crashes was modest.

The study conducted by the IIHS revealed that the system was able to reduce parallel crashes by an impressive 29 percent. However, the reduction in crashes involving bicyclists crossing in front of the vehicle was less significant. Cicchino, vice president of research at the Institute and author of the study, said that while early versions of EyeSight prevented crashes with bicycles traveling parallel to the road, AEB systems must be able to prevent crashes with bicycles crossing in front of the vehicle to have a significant impact.

Prior research has indicated that AEB technology has been successful in reducing rear-end collisions involving motor vehicles by 50 percent. A separate study highlighted the effectiveness of AEB in pedestrian safety, resulting in a 27 percent reduction in pedestrian-involved crashes. However, the implementation of AEB systems for bicycle crash prevention has been somewhat slower, even though the number of bicyclist fatalities in motor vehicle crashes has increased by over 50 percent since 2010.

The Results are Auspicious

To gain a deeper understanding of these systems' potential to safeguard cyclists, Cicchino conducted an extensive comparison of bicycle crash rates for Subaru models equipped with EyeSight versus those without the system across 16 U.S. states from 2014 to 2020. Subaru models such as the Crosstrek, Forester, Legacy, Outback, Impreza, and WRX were equipped with the initial or second version of the EyeSight system, designed primarily to prevent crashes with parallel-path cyclists.

As expected, these systems demonstrated a higher efficacy in preventing parallel crashes they were designed to address, with rates 29 percent lower for vehicles equipped with EyeSight compared to unequipped vehicles. While rates of perpendicular crashes and overall crash rates were 5 percent and 9 percent lower, respectively, the reductions were not statistically significant.

It's important to note that most bicycle crashes involve crossing scenarios in the U.S. and Europe. Parallel crashes, although significant, are more prevalent in cases where the bicyclist is fatally injured, but the study does not conclusively determine EyeSight's effectiveness in preventing these fatal accidents, which often involve high speeds and unique circumstances.

A Quick Recap

Subaru has taken a significant step forward by introducing the third generation of EyeSight, designed to prevent both crossing and parallel crashes. However, it's still too early to evaluate its real-world effectiveness. This advanced version of EyeSight has already made its way into the 2022 Forester and WRX in the U.S. market, with the 2023 Ascent, Legacy, and Outback models also featuring the new version, along with an additional third camera to expand the system's field of view. This broader scope is expected to enhance the system's ability to detect crossing bicyclists in a more timely manner.

To maximize the effectiveness of these advanced safety systems, automakers will need to address challenges like bicycle detection in low-light conditions, particularly during the night when the risk of a fatal crash is highest. Additionally, policymakers and road designers must consider crash avoidance technology as a supplementary measure, not a standalone solution. To create safer roads for all, improvements in roadway lighting, dedicated bike lanes, and other infrastructure enhancements must work in conjunction with these remarkable technological advancements.

This other article has more insights on road safety: Navigating the Hazards of Nighttime Driving