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Windshield Complexity and Their Role in ADAS Functionality

December 4, 2018

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Ryan Mandell

Director of Claims Performance, Auto Physical Damage, Mitchell, An Enlyte Company

Advanced Driver Assistance Systems (ADAS) are rapidly becoming standard on new model vehicles with features such as emergency braking, lane departure warnings, dynamic cruise control, and blind spot detection. A critical component of these systems is the vehicle's multi-function camera that is centrally mounted behind the top of the windshield. The presence of a "smart windshield" is widely expected to be the norm by the year 2020 on all new vehicles.¹ This technology provides some of the key functionalities that help increase modern vehicle safety, while at the same time, presents

new challenges to the collision repair industry in ensuring proper and safe windshield and multi-function camera operation. Replacing a windshield without a multi-function camera is a relatively simple operation, enabling the option to utilize either OEM or aftermarket glass. This, however, changes with the introduction of ADAS components that are mounted behind the windshield. Technicians now must ensure that the multi-function camera is calibrated properly following a replacement. Failure to perform a proper calibration has the potential to result in failures throughout the vehicle's ADAS and possibly result in an unnecessary collision. In order to guarantee proper calibration, many OEM's, including Subaru with their EyeSight System, recommend that technicians replace the windshield with an OEM part. Subaru also prohibits windshield repairs if the damage is in the area of the EyeSight camera.² The need for calibration and the increased cost of OEM glass significantly adds to the cost of windshield replacement. A recent report on ADAS conducted by AAA found that the average cost of replacing a windshield with an OEM part on a vehicle equipped with windshield dependent ADAS ranged from \$1,300—\$1,650.³ ADAS components that involve the windshield come into play not only when the windshield is damaged, but in the general course of various collision repair scenarios. GM, for instance, states that the forward facing camera must be calibrated when either the windshield is removed and installed, or the camera or camera bracket is removed and installed.⁴ Situations where it would be required to remove and install a windshield, for example, include repairs to or replacement of the roof or 'A' pillars. Additionally, some automakers such as Honda (for the 2018 Honda Accord) require calibration of the multi-function camera in the event of any collision. A great deal of attention has been placed on adherence to [OEM collision repair procedures](#), and the additional complexity surrounding windshields is further evidence in support of that necessity. One of the first questions that should be asked when preparing a damage estimate on a vehicle equipped with ADAS is, "Do the ADAS components associated with the windshield need to be recalibrated?" The answer may not be as obvious as determining whether or not the windshield was damaged. While these additional considerations surrounding windshields on ADAS equipped vehicles will most certainly add to the average cost of repair, they are considerations that should be followed in order to achieve the end result of the safe and proper repair.

¹<https://www.propertycasualty360.com/2018/10/03/adas-is-driving-smarter-windshields-but-roadblocks/?slreturn=20181016103854>

²<https://www.repairerdrivenews.com/2018/10/18/subaru-reaches-1m-vehicles-with-eyesight-adas-since-2012-tech-could-cut-crashes-curtail-aftermarket-glass/>

³<https://www.glassbytes.com/2018/11/aaa-studies-adas-and-windshield-replacements/>

⁴<https://rts.i-car.com/collision-repair-news/new-calibration-requirement-from-general-motors.html>



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