

FACT SHEET

## 2023 REVERSE AEB TESTING



## Background

Reverse Automatic Emergency Braking (AEB) is an advanced driving system designed to automatically activate a car's brakes when it detects a potential collision behind the car. Reverse AEB is capable of operating without requiring the driver to engage the brake pedal physically. Many new vehicles have expanded the ability of reverse AEB systems to detect and apply brakes in response to vehicles approaching from the side while backing up.

AAA conducted primary research on four vehicles equipped with reverse AEB with rear cross traffic mitigation in a selection of simulated backup collision scenarios to better understand how automakers are implementing these safety systems and how drivers can use these systems to avoid or safely lessen the severity of a collision.

To better understand the capabilities and limitations of reverse automatic emergency braking, AAA pursued two lines of inquiry:

1. How do reverse AEB systems with rear cross-traffic mitigation perform when backing out of a parking space into the path of an oncoming vehicle with an adjacent parked vehicle obstructing the view?
2. How do reverse AEB systems perform when encountering a static simulated child pedestrian behind the vehicle?

## Key Findings:

Scenario A (backing out of a parking space into the path of an oncoming vehicle, with the test car perpendicularly parked)

Scenario B (backing out of a parking space into the path of an oncoming vehicle, with the test car in an angled parking spot)

- Aggregated Results for Scenario A and Scenario B: **The systems automatically applied brakes in 26 of 40 test runs (65%) and successfully prevented collision in 1 of 40 test runs (2.5%).**

Scenario C (backing out of a parking space into the path of a stationary child pedestrian)

- Results for Scenario C: **The systems automatically applied brakes in 15 of 20 test runs (75%) and successfully prevented collision in 10 of 20 test runs (50%).**



## Recommendations

- Automatic emergency braking systems are never a substitute for an engaged driver. Never rely on the technology to apply the brakes.
- Drivers should be fully aware of their surroundings, utilizing the backup cameras to enhance driver awareness. These systems rely on sensors that are typically mounted on the rear bumper area of the vehicle.
- When backing up with an obstructed view, drivers should back up cautiously and pause once the rear of their vehicle has cleared the obstruction. This allows time for the sensors to detect cross traffic, or any stationary objects obstructing the driver's view.

## Methodology

In partnership with the Automobile Club of Southern California's Automotive Research Center, AAA selected four popular 2023 model year vehicles equipped with reverse AEB with rear cross traffic mitigation. Only reverse AEB systems with the ability to detect and automatically brake for rear cross traffic were eligible for testing. It was determined that all test vehicles would be small to medium SUVs due to the popularity of these categories. The *2023 Hyundai Tucson Hybrid*, the *Limited AWD 2023 Lexus RX 350 "Premium"*, the *2023 Mazda CX-30 2.5 Turbo AWD "Premium Plus Package"* and the *2023 Volkswagen Tiguan 2.0T "SEL R-Line"*.

The vehicles were procured and taken to an appropriate dealership to ensure the proper functioning of the AEB system. (with the exception of the Volkswagen Tiguan). Front-end alignments and ADAS sensor calibrations were performed per manufacturer specification. (The Volkswagen Tiguan was provided by the manufacturer directly from the factory, and alignment and calibrations were not necessary per the provider.). Please refer to the full report for methodology details, including specific testing equipment and test track characteristics.

