

FACT SHEET

2025 ACTIVE DRIVING ASSISTANCE SYSTEMS: TRAFFIC JAM EVALUATION



Key Findings:

Overall Results

- In total, notable events were recorded every 3.2 miles (9.1 minutes) on average, with drivers having to intervene 85% of the time.
- The most common type of event was inadequate response by the automated system to cut-ins, occurring every 8.6 miles (24.4 minutes) on average.
- The second most common event was inadequate lane centering, occurring every 11.3 miles (32.2 minutes).

Active Driving Assistance (ADA) systems, which are considered Level 2 (L2) automation, are Advanced Driving Assistance Systems (ADAS) that can automatically provide steering and acceleration or deceleration support in certain driving situations while requiring the driver to remain fully engaged and supervising the system. ADA technology has continued to expand its capabilities, and many systems function in low-speed, high-traffic scenarios.

AAA, in partnership with the Automobile Club of Southern California's Automotive Research Center, evaluated five vehicles equipped with ADA systems designed to operate on highways in congested traffic. The vehicles were tested naturalistically, driven according to the owner's manual instructions on limited-access highways along designated routes during daytime high-traffic situations. Each vehicle was driven an average of 342 miles over a period of 16.2 hours, with GPS data, video, and audio continuously recorded to capture traffic conditions, vehicle behavior, and driver observations.

To better understand the capabilities and limitations of ADA systems, AAA pursued two lines of inquiry:

- How do ADA systems of new passenger vehicles perform in real-world, high-traffic driving?
- How does the performance of hands-on ADA systems compare to hands-off ADA systems?

Total counts of notable events (All test vehicles)

Event Type	All	Intervened	
Cut-in response inadequate	199	179	89.9%
Lane centering inadequate	151	110	72.8%
No resume after stop	71	71	100%
Lane centering &/or ACC deactivation	57	55	96.5%
Inadequate deceleration	43	30	69.8%
Other events	12	6	50.0%
Total	533	451	84.6%



Average distance and time intervals between notable events (All test vehicles)

Event Type	All		Intervened	
Event occurred once every...	Miles	Minutes	Miles	Minutes
Cut-in response inadequate	8.6	24.4	9.5	27.1
Lane centering inadequate	11.3	32.2	15.5	44.1
No resume after stop	24.1	68.4	24.1	68.4
Lane centering &/ or ACC deactivation	30.0	85.2	31.1	88.3
Inadequate deceleration	39.7	112.9	56.9	161.9
Other events	142.3	404.7	284.7	809.3
Total	3.2	9.1	3.8	10.8

Comparison of Hands-on and Hands-off Systems

- Notable events occurred three times as often for hands-on ADA systems (every 2.3 miles or 6.7 minutes) than for hands-off ADA systems (every 7.2 miles or 20.1 minutes) on average.
- Hands-off systems asked the driver to place their hands back on the wheel once every 5.5 miles or 15.3 minutes on average.

Recommendations:

Adding ADA systems into daily routines offers both benefits and challenges. To help improve road safety, AAA recommends:

- Remain in control and be prepared to intervene by braking or steering at all times while using ADA systems. Evaluated ADA systems are never a substitute for an engaged driver.
- Eliminate distractions, including interacting with a smartphone. The need for the driver to intervene while using ADA systems can be frequent, especially in high traffic areas.
- Maintain awareness, stay engaged, and remain in complete control of the vehicle at all times, regardless of the ADA systems in use.
- Be familiar with how their system operates. Read the vehicle owner's manual to learn **when**, **where**, and **how** to use them.
- Select a following distance that suits the driving situation to allow for more time to react to a situation and intervene when needed.

Industry Recommendations:

AAA aims to collaborate with industry and manufacturers to share research to:

- Enhance ADA performance, particularly in terms of cut-in response and lane-centering behavior.
- Enhance the visibility of alerts related to the deactivation of ADAS features to ensure drivers are aware when features are active or inactive.

METHODOLOGY

Test personnel were instructed to drive the vehicles normally, using the ADA system in accordance with owner's manual instructions, and to mark events related to ADA performance and dictate relevant information into the microphone.

All testing was performed on limited-access highways in the greater Los Angeles, CA, area. This area was chosen due to consistent high-traffic conditions and the abundance of roadways on which ADA systems are capable of operation (particularly in the case of the hands-off ADA systems). Driving routes varied by test segment, featuring a variety of highways. Routes were selected to provide a variety of conditions (such as direction, sun exposure, road surface condition, overpasses and tunnels, and time of day) while also promoting high-traffic conditions. Testing was performed on weekdays, focusing on mornings and afternoons to provide consistent traffic patterns. All test vehicles were driven along the same routes simultaneously, with vehicles entering and exiting the highway together. However, test vehicles remained separated in traffic.