Car repair shops often skip a vital safety step

By Hiawatha Bray Globe Staff, Updated November 23, 2022, 1:07 p.m.

Thomas Johnson (left) sets up a laser alignment tool with his father Michael Johnson, who owns the business. With new cars equipped with sophisticated sensory devices, safety is at stake when collision repairs are made. Sensors in the windshields, mirrors, and other spots on cars must be precisely aligned to factory settings. Crown Collision Solutions in Bridgewater is one of a few area businesses with a repair bay capable of the high-tech calibrations. LANE TURNER/GLOBE STAFF

If your car has been in a fender-bender, it may be in worse shape than you think.

The sensors for the car's automatic brakes, blind-spot warning system, and other high-tech safety features may have been knocked out of alignment during the accident, or even during repair. These components, collectively known as Automatic Driver Assistance Systems, or ADAS, are supposed to be recalibrated before the car returns to the roads.

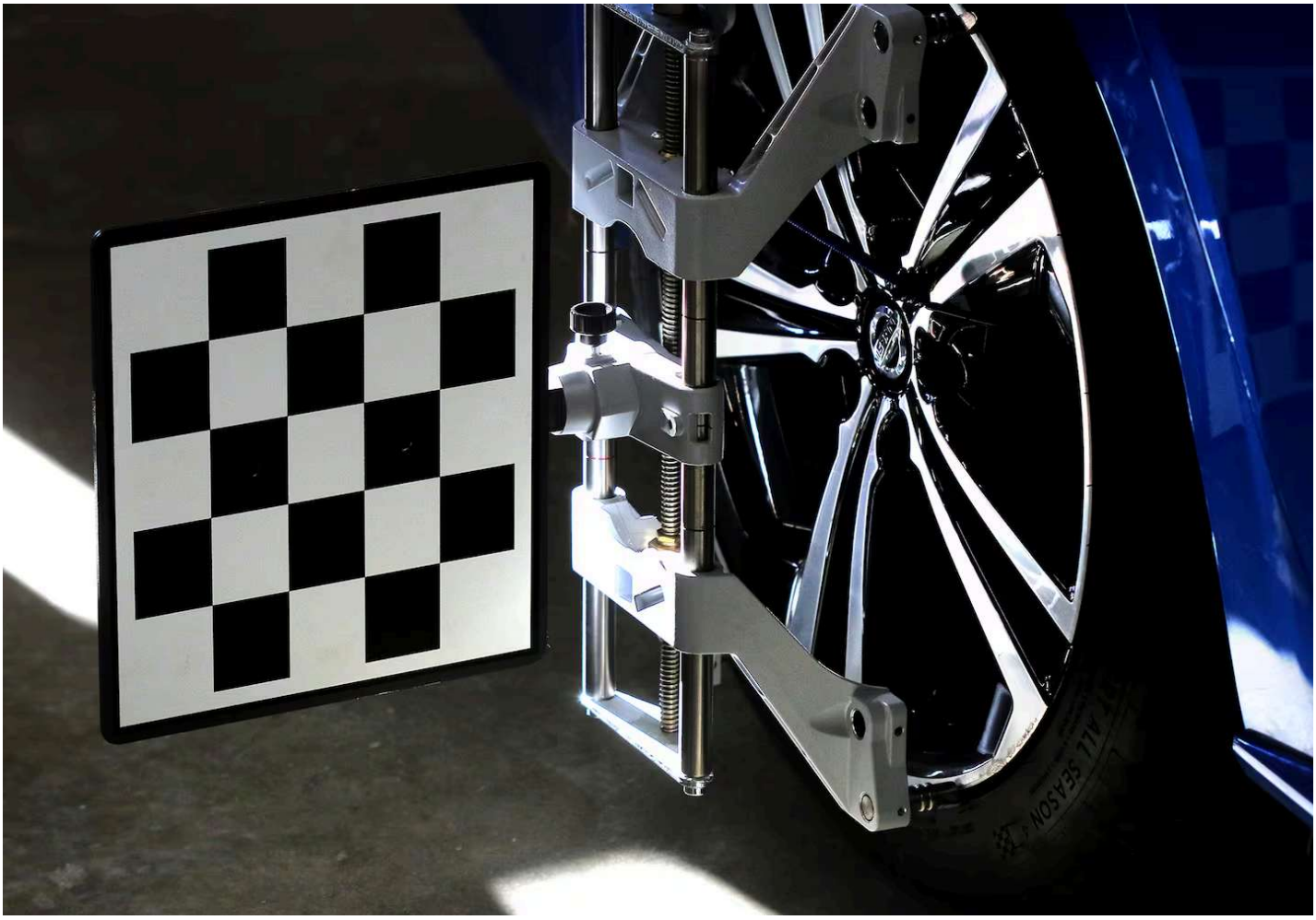
The radars in the car's bumpers might need re-aiming to ensure they're pointed in the right direction. The front-facing camera might have to be electronically refocused after a windshield replacement.

Yet many repair shops don't bother. They lack the costly equipment, trained technicians, and even the floor space needed to calibrate safety sensors. And so thousands of "repaired" cars are driving around with unreliable ADAS sensors that might not warn the driver of potential disaster.

"I think the majority of the shops are definitely not doing it," said Kevin Gallerani, owner of Cape Auto Body in Plymouth and president of the Alliance of Automotive Service Providers of Massachusetts, which represents the state's auto body repair shops. "I hate to say this. I'm probably going to get murdered for this article, but there needs to be a wakeup call."

A recent nationwide survey by the Insurance Institute for Highway Safety found that about 90 percent of new car dealerships include proper calibration with every repair. It's mainly the small independent shops that are falling short.

"The shops cannot keep up with the technology and invest enough time and money in their people and equipment," said Mike Johnson, owner of Crown Collision Solutions in Bridgewater. "They're in survival mode."



A target for laser alignment is attached to the rear wheel of a 2020 Nissan at Crown Collision Solutions in Bridgewater. LANE TURNER/GLOBE STAFF

According to CCC Intelligent Solutions, an auto insurance software company, about 60 percent of cars in the US have at least one ADAS system on board. Rear-mounted sensors to assist in parking are by far the most common. But other sophisticated systems once found only on luxury models are becoming standard features. These include blind-spot warning alarms, systems to keep drivers from straying into the wrong lane, adaptive headlights that aim in the direction the car is turning, and automatic emergency brakes to prevent collisions with pedestrians or other cars.

These systems rely on data received from cameras or radar units mounted on the car in various locations — the front and rear bumpers, side mirrors, door panels, or behind the windshield. If any changes are made to any of these components, it's time to recalibrate.

"It can be as simple as removing the bumper cover to replace a water pump on a vehicle," said Chris Chesney, vice president of training at Repairify, a Texas-based company

offering Internet-based support to auto repair shops. ADAS-equipped cars have radar transmitters under the bumpers, which must be checked for proper alignment, Chesney said. Other ADAS features, like steerable headlights, require recalibration every time the car undergoes a simple wheel alignment.

“Every manufacturer has a position statement that a calibration must be completed after basically every repair,” said Sean O’Malley, senior test coordinator at the Insurance Institute for Highway Safety.

O’Malley said his organization has no data on whether misadjusted ADAS sensors are causing traffic accidents. Investigators will place blame on the human driver, and ignore the possibility of a malfunctioning radar, he said.

But one of O’Malley’s colleagues noticed that her car, equipped with an emergency braking system, triggered a warning when it passed under a bridge, but not when it got too close to the car in front. Technicians found that the car’s front-facing radar was pointing upward instead of straight ahead — a minor mistake that could have caused a rear-end collision.

Calibrations are best performed in a specially designed service bay with no clutter or bright colors to confuse the vehicle’s cameras. Also, the floor must be as flat as possible, for precise alignment of the sensors.

Thomas Johnson (left) works on a 2020 Nissan with his father Michael Johnson, who owns Crown Collision Solutions in Bridgewater. LANE TURNER/GLOBE STAFF

The shop also needs a suite of calibration gear that can cost $25,000 or more. This includes a set of targets that are placed at precise locations around the car. The car measures the light and radar waves bouncing off these targets, and uses the data to recalibrate its sensors, with help from a computer plugged into the vehicle’s data port.

Some vehicles require a further step — dynamic calibration, which is carried out while the car is being driven.

A total recalibration job can take several hours and can cost anywhere from $450 to $1,200, said Paul Chaet, general manager of Allston Collision Center in Boston. His shop can't afford the big investment in calibration gear, so Chaet farms it out to a facility in Dedham.

Gary Machiros, owner of Angie's Service in Newbury, has a calibration bay of his own, but says many of his colleagues do not. Apart from the cost, there's often a reluctance to master the technology. "Some of these body shops are old-school guys," said Machiros, "and they're not good with computers."

Gallerani also blames Massachusetts insurance law, which sets a $40-per-hour minimum labor rate for auto body repair, the lowest rate of any US state. "It's killing the industry in Massachusetts," he said. A bill to raise the minimum to $55 an hour died in the Massachusetts legislature earlier this year. Gallerani said that with pay scales so low, body shops can't afford to install calibration gear and train their workers to use it.

But O'Malley of the insurance institute is optimistic that indie car repair shops will eventually get on board. "The problem is slowly fixing itself," he said.

In the meantime, owners of ADAS-equipped cars must look out for themselves, by asking technicians a simple question: "Do you calibrate?"

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