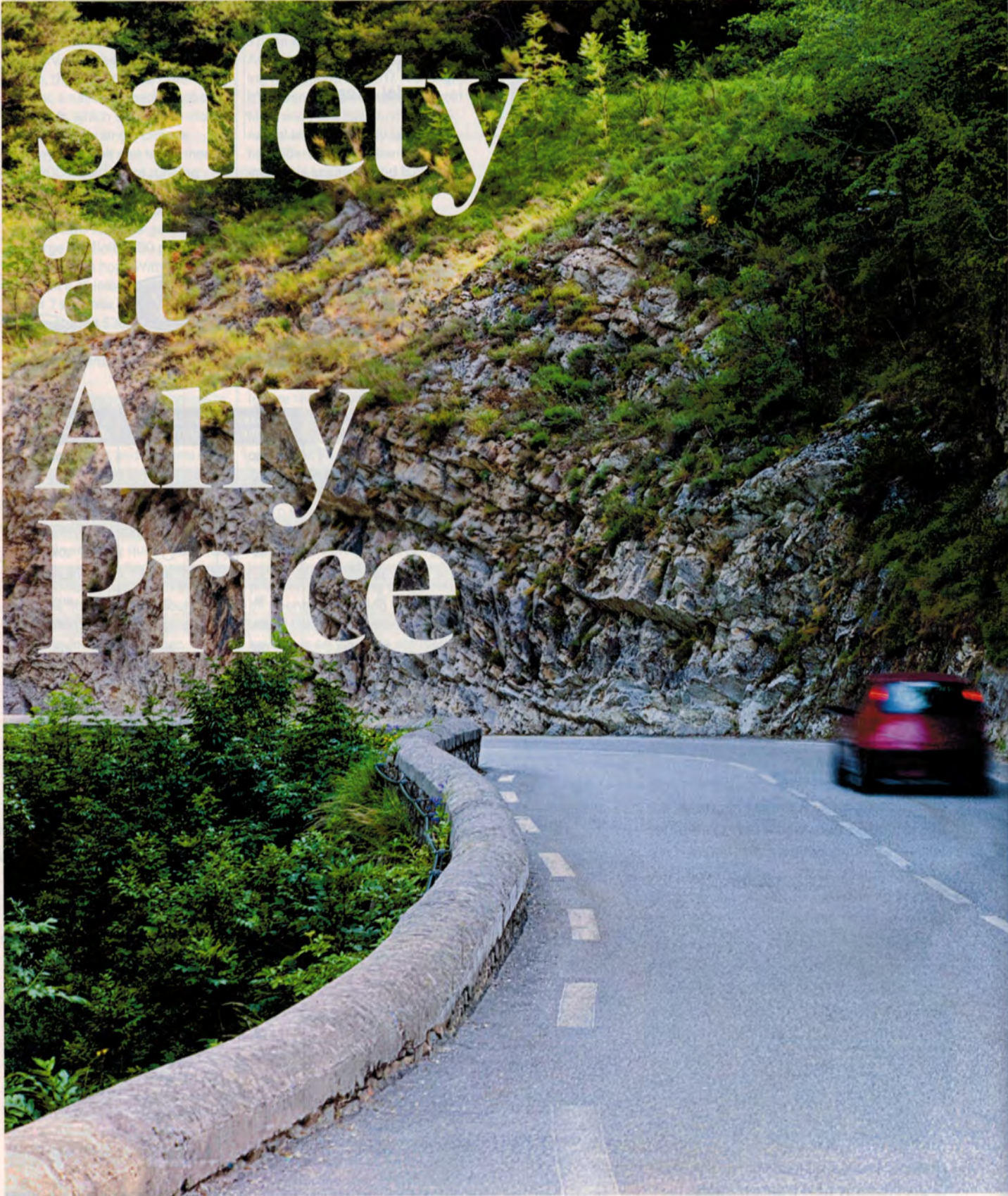


# Safety at Any Price



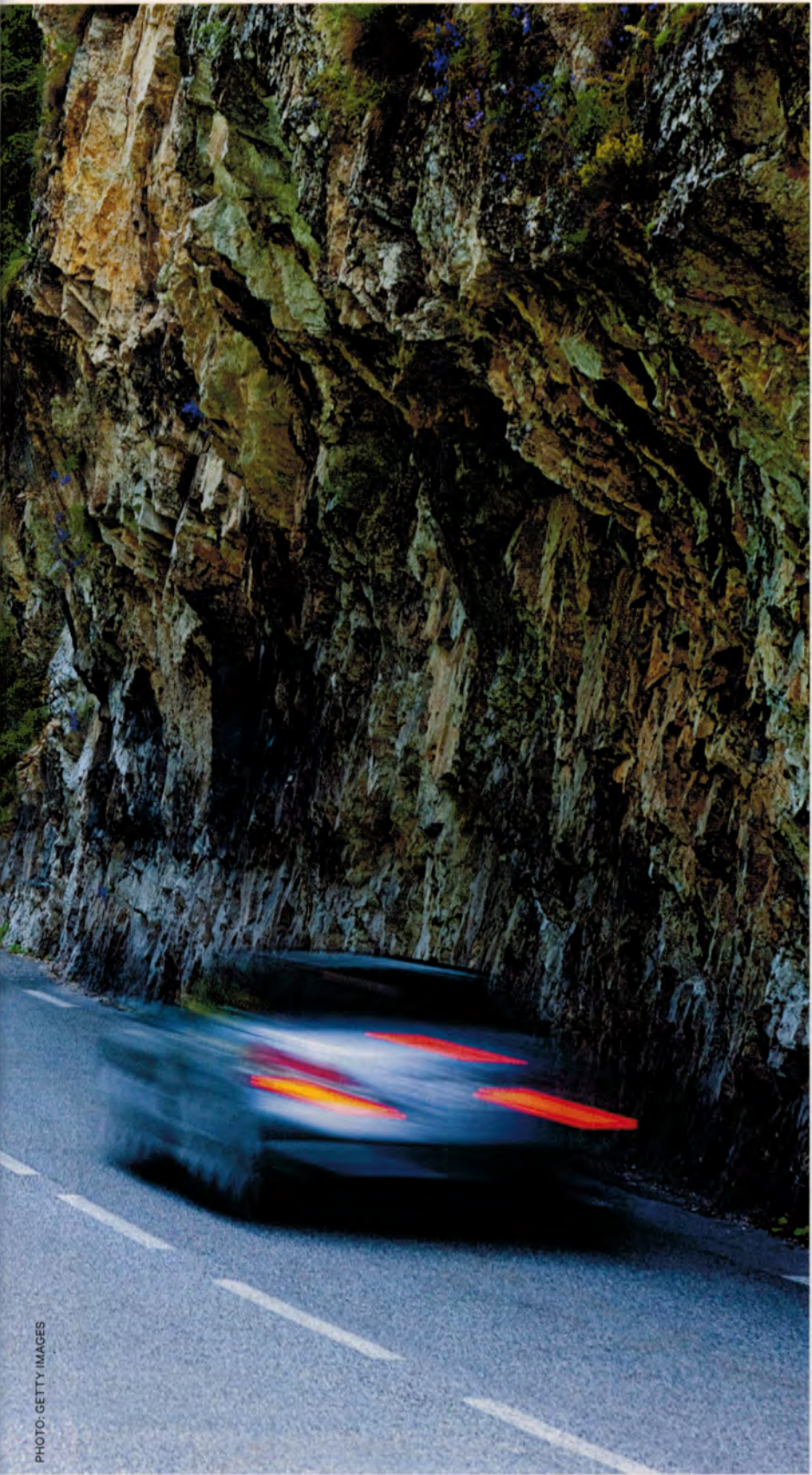


PHOTO: GETTY IMAGES

> Consumer Reports calls for two critical safety technologies to be made standard in all new vehicles

**M**ike and Linda Hanson

had just finished lunch on a long road trip home to Glen Rock, Pa. Once back on the highway, Mike set their Dodge Durango's cruise control to the speed limit and was pleased to note the clear skies and light traffic that day.

The next thing he remembers was Linda screaming his name. As he awakened from what he called "zoning out," they were barreling toward a concrete bridge abutment at 65 mph.

But before he could slam on the brakes, the SUV did it for him, automatically slowing the car and granting him enough time to avoid what could have been a terrible accident.

Shaken and cursing himself, he pulled over to the side of the road to calm down.

Until that moment, the Hansons had no idea their 2014 Durango came equipped with a safety option called forward-collision warning (FCW) and a secondary level of protection in the form of automatic emergency braking (AEB). They engage when the car detects an impending collision.

Now both Hansons are convinced that safety technology embedded in their car saved their lives: "There is no question in my mind about that," Mike says, adding, "I would never buy another car without it."

FCW is a system that uses built-in laser, radar, and/or camera technology to anticipate a collision and warn the driver in real time—via flashing lights on the instrument panel or windshield, beeps, and other sounds—to take immediate action. AEB goes a step further and slows the vehicle without any driver input at all.

Though neither feature can fully prevent a collision, together as a one-two

strategy they have been shown to reduce the number and severity of accidents.

Consumer Reports sees FCW and AEB as the most promising safety breakthroughs in the automobile industry since the advent of electronic stability control almost two decades ago. We are urging automakers to make those features standard on all cars, from luxury to economy models, as quickly as possible.

We feel so strongly that this level of safety should be available to everyone, no matter their income level, that starting this year our new vehicle Ratings are being adjusted to award bonus points—and

thus a higher Ratings score—to vehicles that offer those safety features as part of the car's base sticker price. Bonus points will be given for FCW, low-speed AEB, and high-speed AEB in vehicles that are equipped with the features as standard across all trim levels. Cars that offer them as an option, or only include them on top trim levels, will not receive the bonus.

Over time, that effective technology could become as ubiquitous as stability control and as prevalent in the minds of consumers as seat-belt use.

Vehicle crashes continue to be a leading cause of death and injury in the U.S.,

## 10 Ways to Avoid a Crash

Many people equate car safety with crashworthiness. But Consumer Reports believes the technology that helps you avoid the crash in the first place is just as valuable.

But choosing a safe car can be challenging when that technology gets lost in a showroom alphabet soup of acronyms that salespeople themselves may undervalue or underemphasize.

Here are our Top 10 advanced safety features, in order of preference. Even if they come bundled into a package with other tech items that you might not want, and that can raise the car's price, we believe these potentially lifesaving options are worth the extra cash.

### 1. FORWARD-COLLISION WARNING (FCW)

Using laser, radar, or cameras, these systems assess surrounding conditions, as well as the speed of your approach to a potential impact with a vehicle ahead of you. They will alert you with visual and/or audible signals to a potential crash, allowing you time to react. Some systems also sense and alert you to the potential for a collision with pedestrians.

**CR'S TAKE** We want to see forward-collision warning standard in every car. It is important enough that we will award bonus points in our Ratings if the car has it as a standard feature.

### 2. AUTOMATIC EMERGENCY BRAKING (AEB)

These systems add to the benefits of

forward-collision warning. AEB will sense a potential collision, and if you don't react in time, the car will initiate braking.

**CR'S TAKE** Another of our favorites, auto-braking is a technology we would like to see in every car. An automaker that makes this feature standard will get extra credit in our scores—see page 8 for details—because it has proved to reduce injuries and deaths. Offering it as option will not get credit.

### 3. BLIND-SPOT WARNING

This technology detects and warns of vehicles you can't see. The system scans the sides of the vehicle to warn of vehicles' presence in blind spots. It alerts drivers with a visible, audible, and/or tactile alert to indicate that it's unsafe to merge or change lanes.

**CR'S TAKE** Blind-spot warning is not only one of CR's top three favorite

safety features but our readers rate it at the top of their favorites as well. It makes a big difference in highway safety.

### 4. REAR CROSS-TRAFFIC ALERT

These systems sense traffic that may cross your path as you reverse, which can be helpful when you're backing out of a parking space or driveway. Some systems will automatically brake for the driver to



**BLIND-SPOT** alerts near your side-view mirrors—such as in this Volvo S60—cover areas you might not see.

with more than 32,000 people on average dying every year. And driver choices and human error contribute to more than 90 percent of all crashes.

The National Highway Traffic Safety Administration (NHTSA) estimates that tens of thousands of injuries could be prevented annually if every car had automatic emergency braking.

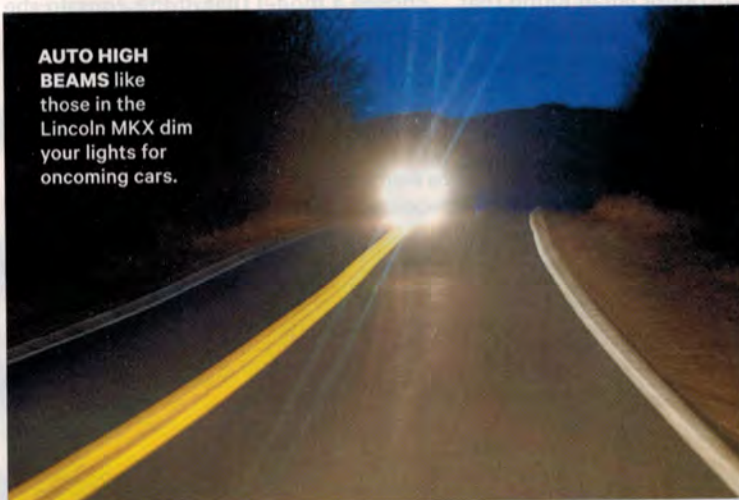
When comparing vehicles with and without forward-collision warning systems and automatic emergency braking, the combination of FCW and AEB has proved to reduce bodily injury insurance claims by up to 30 percent and reduce

**Vehicle crashes account for more than 32,000 deaths every year. Driver choices and human error contribute to more than 90 percent of them.**

rear-end crashes by about 40 percent, according to the Insurance Institute for Highway Safety (IIHS). Even when a car has only forward-collision warning, rear-end crashes are cut by 23 percent. Translated, that means fewer people got hurt and the injuries weren't as severe.

And yet many consumers are unaware those valuable features exist—even when they're built into the cars parked in their own garages.

In Consumer Reports' Advanced Safety Systems Survey, which included 630 vehicles with standard AEB, 35 percent of the car owners did not know their cars



**AUTO HIGH BEAMS** like those in the Lincoln MKX dim your lights for oncoming cars.

avoid an object.

**CR'S TAKE** With a large number of accidents occurring in reverse at low speeds and in parking lots, we like that drivers can be assisted by rear cross-traffic alerts that help when navigating tight spots or where visibility is limited.

## 5. BACKUP CAMERAS

This camera-based assistance system is activated when the vehicle is placed in reverse. The rear view is displayed in a center console screen

or rear-view mirror. Some vehicles have a parking assistance system that visually diagrams a lined guided parking path to track your steering angle. Cross-traffic alerts and overhead view cameras can also be integrated into the camera view.

**CR'S TAKE** With many back-over accidents in recent years, we are glad to see it as standard equipment on all 2018 models, and every year after. Along with other safety advocates, Consumer Reports pushed for the law requiring the cameras and sued the government to get final rules in place.

## 6. AUTOMATIC HIGH BEAMS

This function automatically switches from low to high beams, and back again, for improved nighttime visibility as conditions warrant.

**CR'S TAKE** Many drivers don't opt for the added visibility of high beams as often as they should. These systems make the switch for you. They improve visibility and automatically reduce the glare of your headlights as oncoming cars approach.

## 7. LANE-KEEPING ASSIST (LKA)

In addition to sensing when you leave your lane, this technology will induce mild steering input to put you back into your lane.

**CR'S TAKE** It's most useful on highways, where the driver can become sleepy or distracted. But it can be overly intrusive on rural two-lane roads. Courteously giving a wide berth to a cyclist or pedestrian may cause the system to steer the car back toward the curb, scaring everyone involved.

## 8. ADAPTIVE CRUISE CONTROL (ACC)

By using lasers, radar, cameras, or a combination of those systems, ACC systems automatically adjust vehicle speed in order to maintain a safe distance from the vehicle in front of you. If traffic slows, some systems will bring the car to a complete stop and automatically come back to speed when traffic gets going again.

**CR'S TAKE** ACC systems often include forward-collision warning, which can further reduce some of the stress of commuting.

## 9. PARKING-ASSIST SYSTEMS

These are a series of sensors in the front, rear, or both bumpers that alert you at low speeds that cars, light poles, walls, shrubbery, and other obstacles are getting close.

**CR'S TAKE** These can make it easier to maneuver in tight parking lots, saving your car from damage.

## 10. LANE-DEPARTURE WARNING (LDW)

The use of cameras, lasers, or infrared sensors assists you with sound or vibration warnings to let you know when you have drifted out of your lane.

**CR'S TAKE** They work best on freeways and open-lane highways but require more refinement because of the number of false alerts we've experienced, especially on narrow or winding roads.

had the feature. Turns out the Dodge salesman who sold the Hansons their Durango never mentioned that it had that capability.

But those who do have the equipment certainly value it.

A 2015 Acura TLX owner who participated in our survey explains, "It keeps me alert. It's like having a driving partner that doesn't yell at me."

Ron Olson, a 2014 BMW 4 Series owner, commutes on California Route 17, a winding, cresting mountain road with frequent sharp turns and sudden traffic stops. He said his BMW "reacts to brake sooner than I can get my foot on the brake pedal."

Those technologies have been in place and evolving in some form in the U.S. since 2004. But not enough has been done to market them, and explain how they work and why they are so beneficial

to drivers—whether at low or high speeds.

It's clear from our survey that many car owners are underinformed and a bit confused.

Many respondents said that although they knew their car was equipped with those safety features, they were still fuzzy about how they worked and under what circumstances they would activate.

A Subaru Forester owner said, "I think any questions about the reliability of this system is probably related to a misunderstanding on my part as to what speeds or conditions it will engage."

The technology in the Forester is significant, even if it is misunderstood by owners. A study out of Japan found that Subaru's EyeSight system, with FCW and AEB, decreased frontal collisions between cars by 80 percent.

Not all of the features operate in the same way. Some have a collision warning

at all speeds, but no AEB. Others might have AEB at speeds below 30 mph, but no warning. The ideal is both systems working together in one package. And still other automakers offer an adaptive cruise control system that can slow down a car in traffic to a complete stop, without any driver input.

So it's no wonder that even the people paid to promote the technology might not understand how it works.

Video of an incident at a Volvo dealership went viral on the Internet last year. A salesman reportedly thought he was demonstrating the automaker's Pedestrian Detection System, not realizing he had chosen a model that didn't contain the safety feature. Instead of automatically braking during the demonstration, the SUV struck two people standing nearby. Neither person was seriously injured.

*(continued on page 30)*



**BACKSEAT**  
occupants should  
get the same  
safety benefits as  
those up front.

PHOTO: INTI ST CLAR GETTY IMAGES

# Putting More Muscle Into Auto Safety

We have the tools to make cars safer. Now we need the will to make it happen.

In January 2016 the Department of Transportation announced two initiatives: One is the government's proposed infusion of almost \$4 billion into the development of autonomous cars over the next decade; the second is a collaboration between automakers and the government to improve safety and communication regarding recalls.

Though the declarations are proactive, they may not go far enough. Consumer Reports is advocating for safety improvements that we believe could be implemented sooner rather than later, especially if regulators and automakers can work together and come to an agreement on effective standards. Below is our list of priorities:

## FORWARD-COLLISION WARNING WITH AUTOMATIC EMERGENCY BRAKING

Features such as forward-collision warning (FCW) with automatic emergency braking (AEB) can reduce bodily injury insurance claims by up to 30 percent. The severity of an accident can be greatly reduced if a car is equipped with those features.

**CR'S TAKE** Consumer Reports urges all manufacturers to include those features

as standard equipment. In parallel, the government can pursue regulations to require the features.



## SEAT-BELT REMINDERS FOR ALL

When cars have advanced seat-belt reminders—meaning the alerts that prompt seat-belt use get louder or more frequent—research has shown that occupants will wear their seat belt. But those audible alerts are currently installed in very few backseats, neglecting the high number of backseat passengers who are less likely to wear a seat belt in the first place.

**CR'S TAKE** Except for children who are required to be in safety seats, backseat passengers are often left behind in terms of safety developments. Installing seat-belt reminders for every seat in every car is an effort that Consumer Reports believes would benefit the safety of all occupants, including post-booster-seat children and adolescents. The alerts were to be made mandatory, but governing bodies have failed to greenlight industry-wide compliance.

## CONSISTENT SEAT-BELT LAWS

In 1967 the first federally mandated seat-belt law required all motor vehicles to have seat belts installed as original equipment. But as of this writing, there are still 16 states in which police cannot stop and fine those who choose to not wear a belt as a primary offense. New Hampshire doesn't have an adult seat-belt law.

**CR'S TAKE** Universal seat-belt use can reduce traffic deaths by as many as 2,800 people per year. Proper use of a lap and shoulder belt by front-seat occupants can reduce the risk of fatal injury in light trucks by 60 percent, and by 45 percent in cars. It's time that all states have consistent, stringent seat-belt requirements for adult drivers and passengers.



## AUTOMATIC HEADLIGHTS WHEN WIPERS ARE ON

Many cars now have daytime running lights. But when weather is inclement, turning on the headlights significantly

improves the ability of other drivers to see a car and reduces the chance of an accident. Only 19 states currently have laws that require drivers to turn on their headlights when the windshield wipers are in use.

**CR'S TAKE** Automakers could decrease visibility dangers for all motorists by installing headlights that automatically turn on when the windshield wipers are activated. It is an inexpensive and potentially lifesaving investment.

## REAR-SEAT SAFETY

Front-seat passengers are at an advantage in terms of protective safety technologies, assuming everyone is belted in. Data show that belted backseat passengers—with the exception of young children who have the protection of child restraints—may fare poorly in crashes compared with those in the front seat.

**CR'S TAKE** More attention needs to be paid to increasing safety in the backseat, especially because it affects those who sit there most often: children and adolescents. Technologies such as seat-belt pretensioners—which tighten the belt in anticipation of impact—and additional frontal and

side airbag protection are key. Consumer Reports believes that rear-seat passengers require protection with the same vigilance as front-seat passengers.



## ALCOHOL-DETECTION SYSTEMS

NHTSA Administrator Mark Rosekind has said the agency is working toward finalizing technology for alcohol-detection systems in cars and commercial vehicles. The system would be able to detect alcohol either on the breath of a driver or through a laser scan of the driver's finger.

**CR'S TAKE** Alcohol-fueled crashes kill almost 10,000 people per year, according to NHTSA. And more than 1 million arrests were made in 2012 for driving while impaired by alcohol or narcotics, according to the Centers for Disease Control and Prevention. Using technology to keep a drunk driver from taking the wheel is a smart next step for road safety.



**STORMY WEATHER** accounts for an average of more than 500,000 crashes each year.

When Allan Alaspa, a retired engineer living in Austin, Texas, went to purchase a 2014 Buick Regal, he had no interest in paying an additional \$1,695 for its Driver Confidence Package that included FCW and AEB along with adaptive cruise control. But thanks to a special at the dealership, he wound up with it anyway, just without the high add-on price tag.

It wasn't long before he started gaining confidence in his new car's safety features. "On two or three occasions, the car actually started braking for me," he says, describing one encounter with an erratic driver in a parking lot. If not for Alaspa's automated system, he may well have been in a costly collision.

"I was going for the brake when the car automatically started braking, as well as the alarm sounding," he says. Getting the system, "was cheap compared to what an accident like that might have cost."

Now he's an admitted convert, saying:

**The DOT recently announced an initiative to prompt the auto industry to be more proactive in identifying safety issues and finding solutions for them.**

"Didn't want it. Now I won't buy another car without it."

Adds survey respondent Trisha Jacobson, owner of a 2015 Hyundai Sonata: "It gives us a good feeling of security in the event it is ever needed."

### **Room for Improvement**

Of the 6,600 owners surveyed by Consumer Reports whose cars had FCW with AEB, about 32 percent—or 2,100 people—reported that they had personally experienced the system activation and were able to avoid an accident, and the injury or damage that could have resulted.

Of course, the systems are not perfect. False alerts do occur. In our survey many owners said their FCW system activated when it wasn't warranted. Those with AEB had similar experiences when the brakes clamped for no apparent reason.

Mike Lemoine, owner of a 2014 Jeep Grand Cherokee, realizes the safety

features could save his life—but says they can also be irritating on occasion.

“It works very well, but does falsely detect collision risks when a car in front of you enters a turn lane and slows down while you are continuing on in the straight lane. Sometimes it’s due to the other car being close to the line or gradually exiting,” Lemoine says.

Jake Fisher, director of auto testing at Consumer Reports, says the features will improve as they evolve.

“While some people could get frustrated with the warnings, we have heard from thousands who have had the system prevent a crash,” Fisher says. “They’re willing to put up with a few false alerts to get the greater safety benefit.”

### **Making Safety Standard**

Roughly 60 percent of all new 2016 cars are expected to have some version of those technologies available as an option. But the features are too often bundled with add-ons such as sunroofs or infotainment systems.

Historically when new technologies are developed, they are expensive for a manufacturer to introduce and roll out. That’s why luxury and premium vehicles have usually seen the safety systems first.

But NHTSA has taken big steps to encourage the technology. And over time economies of scale allow emerging innovation to be rolled out industry-wide, and the cost comes down.

“Bundles of safety features can cost between \$500 to \$3,000, depending on what’s included,” says Mel Yu, Consumer Reports auto analyst. “We will soon see those features come as standard, without raising the price of the vehicle.”

The DOT recently announced a collaboration between the government and 18 automotive manufacturers to prompt the auto industry to be more proactive in identifying safety issues and finding solutions for them.

In the past, automakers have been proprietary about new technologies, even in the safety area, competing to develop those features and get them into vehicles. Consumer Reports believes government and industry should work together in the new venture to further encourage

## **A recent Consumer Reports survey shows that safety tops the list of factors buyers value most when they are considering new cars.**

adoption by setting uniform standards for the technologies.

Even the automakers’ most fervent backers believe it will take seven or eight years for widespread adoption of AEB throughout the industry, NHTSA Administrator Mark Rosekind said at a recent industry event.

Though the regulatory agency he leads has taken important steps to push for AEB, it stopped short of flexing its rule-making authority and establishing a set deadline for that to happen.

Nevertheless, Rosekind said regulations may come if automakers are “still struggling” to offer AEB.

“Automatic braking saves lives,” said William Wallace, policy analyst for Consumers Union, the policy and advocacy arm of Consumer Reports. “We’re glad that some automakers have committed to making this technology standard—so that anyone who buys a new car can benefit from it—and it’s time for the remaining companies to get onboard. If they don’t, or if automakers lag in rolling out this technology across their whole fleet, NHTSA shouldn’t hesitate to require it.”

A recent Consumer Reports survey shows that safety tops the list of factors buyers value most when they are considering new cars. And when vehicles

like the Scion iA, which sells for \$16,695, now come with standard low-speed AEB, it’s clear that price should no longer be a barrier where safety is concerned.

Though Consumer Reports is reserving judgment on other new safety technologies—such as lane-departure warning with lane-keeping assist—we believe FCW and AEB stand out and already have been proved to save lives.

Those advances may offer financial advantages, too. Several insurers have said that they will offer a pricing break for vehicles that have AEB.

One day cars will be able to drive themselves; AEB is one of the prerequisites that will allow for that kind of self-driving car technology.

Meanwhile, Volvo, a leader in automotive safety, is taking its own steps to improve the safety of its fleet. Using technology such as FCW, AEB, and self-driving software, Volvo has set what appears to be a utopian, if not outright impossible, agenda for itself.

The automaker wants to eliminate all deaths or serious injuries in all new Volvo vehicles beginning in 2020. Other automakers are also making investments toward a similar outcome. They just haven’t been as bold or as public about it.

“Targeting zero deaths is problematic because you have to look at all cases, and outliers,” says Erik Coelingh, Volvo’s senior technical leader tasked with reaching the goal.

Volvo is looking into the types of accidents most prone to kill or injure people—including intersection collisions, scenarios where vehicles drive off the road, and those that involve large animals, such as deer and moose. And then figure out the safety antidotes. Why aim for zero, he was asked? Because, Coelingh says, “It’s the only acceptable number.”



### **LEARN**

For our comprehensive guide to which cars have the most advanced safety features, go to

[ConsumerReports.org/cro/2015/01/advanced-safety-system-list/index.htm](https://www.ConsumerReports.org/cro/2015/01/advanced-safety-system-list/index.htm)