



# REACHING ZERO CRASHES

6-5-4-3-2-1-0

*A DIALOGUE ON THE ROLE OF  
ADVANCED DRIVER ASSISTANCE SYSTEMS*

OCTOBER 27 | 2016



**National  
Transportation  
Safety Board**



# ACTIVE SAFETY SYSTEMS

## How Consumer Reports Advances Automotive Safety

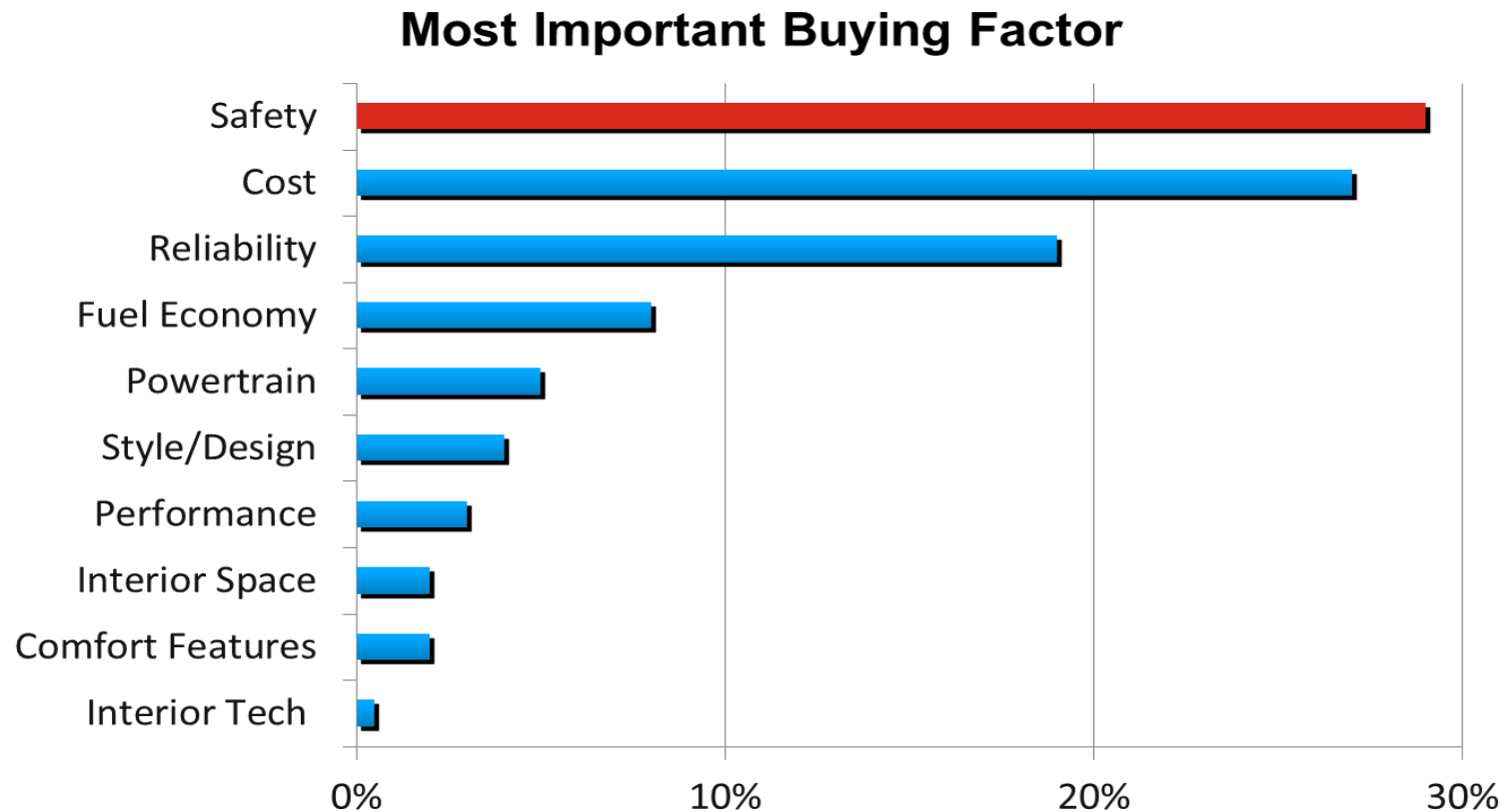
Shawn Sinclair  
Automotive Engineer

For 80 years, Consumer Reports has been testing products and working to create a fairer, safer, and healthier marketplace.



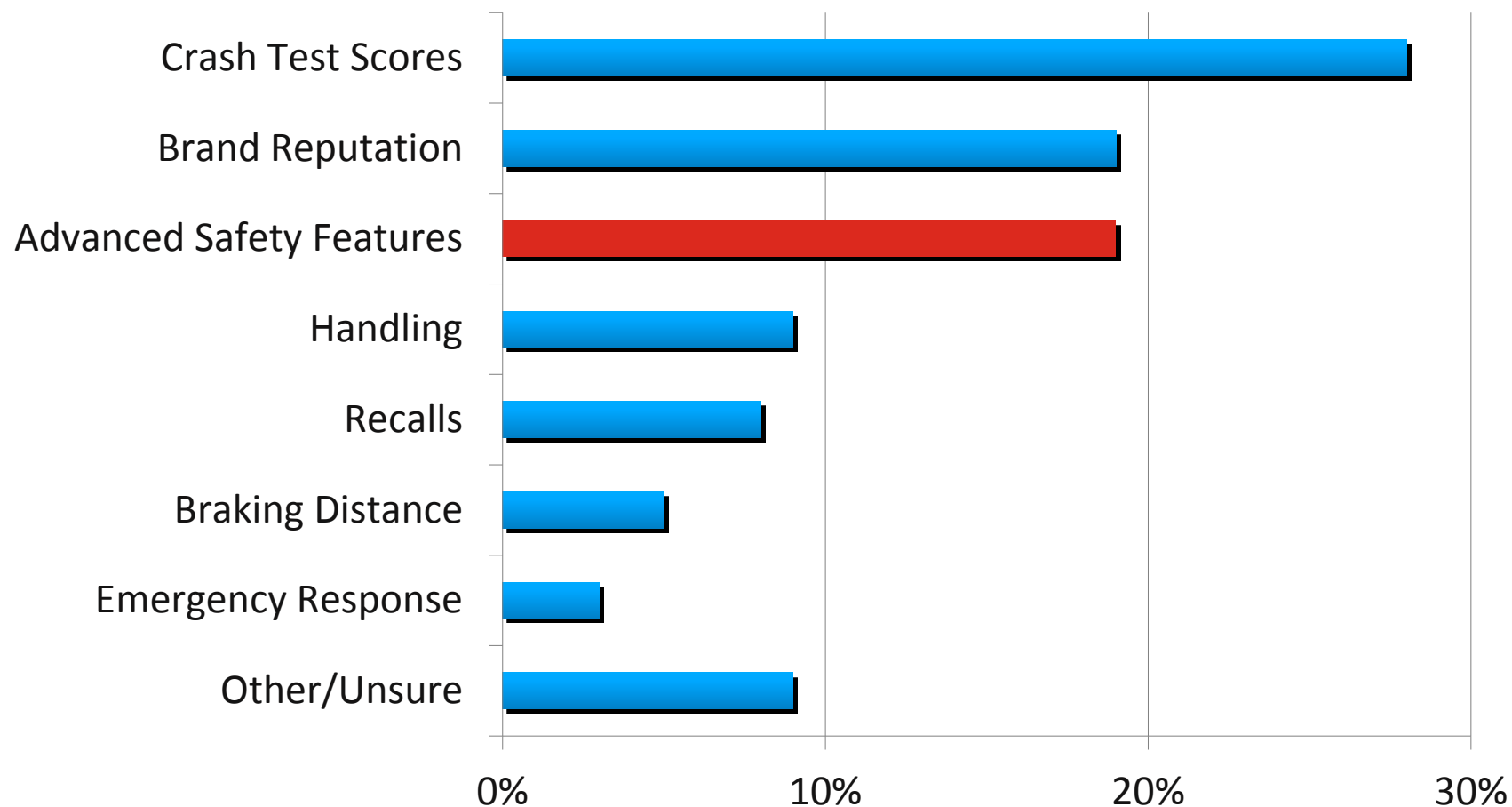
## Consumer Reports Nationwide Survey

1,097 Respondents likely to purchase car in next two years



Among those who Value Safety #1

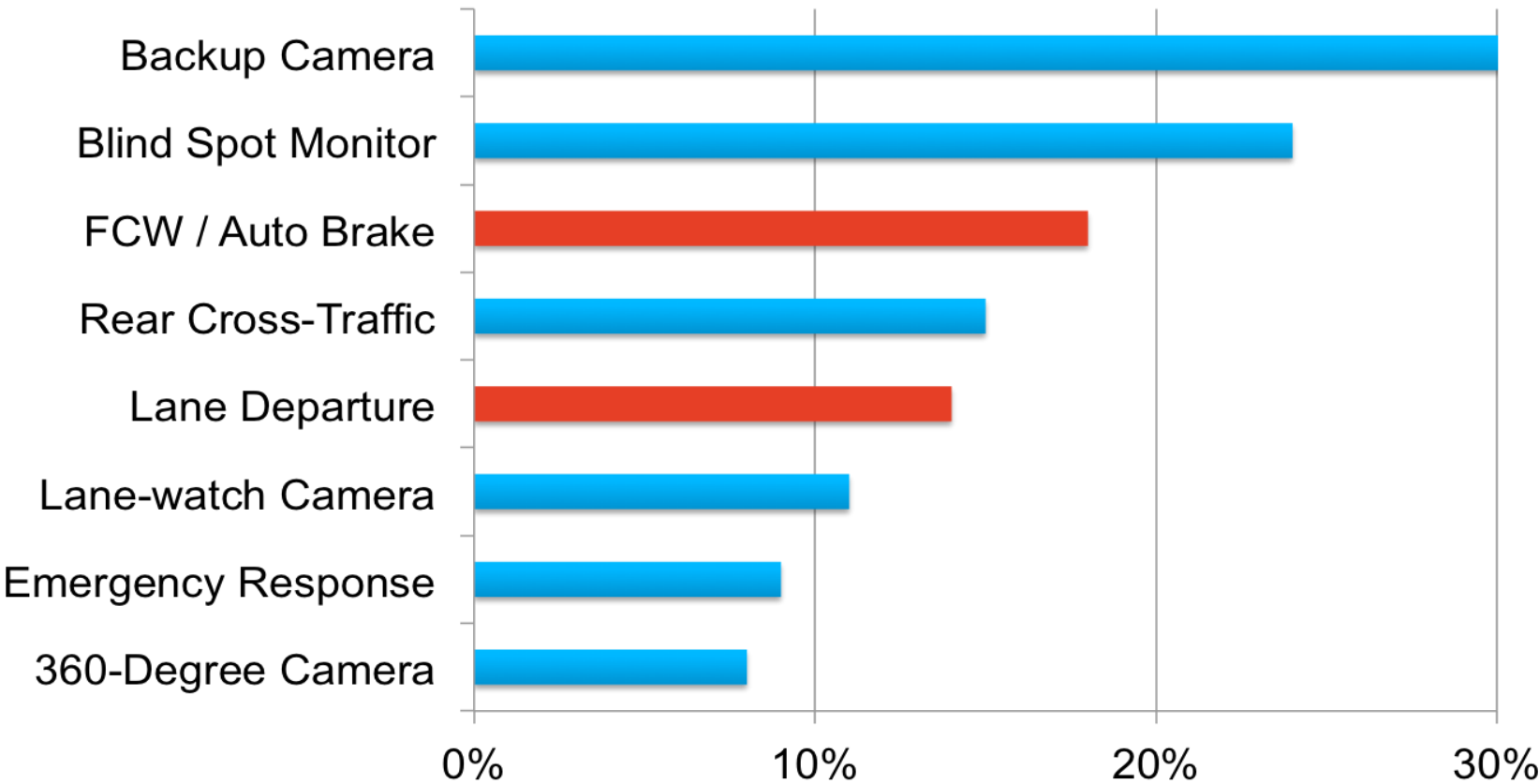
## Most Important Safety Feature





Must Have Advanced Safety Features

Would You Pay More?



## FCW - Forward Collision What?

- Pre-Safe
- Avoidance Assistant
- Turning Assistant
- Multicollision brake assist
- Active Protection
- Active Driving Assistant
- Driving Assistant Plus
- City Brake Activation
- Approach and Pedestrian Warning
- Forward Collision Alert
- Front Automatic Braking
- Forward Collision Warning
- Full-Speed Forward Collision Warning
- Advanced Brake Assist
- City Brake Control
- Collision Warning
- Collision Mitigation Brake System
- Smart City Brake Support

**Brake Assist BAS Plus**

**Pre-Safe Brake**

**Cross Traffic Assist**

**Forward Collision Mitigation**

**Brake Assist with Preview**

**Intelligent Brake Assist**

**Forward Emergency Braking**

**Predictive Forward Collision Warning**

**Forward Emergency Braking**

**EyeSight**

**Collision Avoidance Assist**

**Pre-Collision System**

**Advanced Pre-Collision System**

**Emergency Assist**

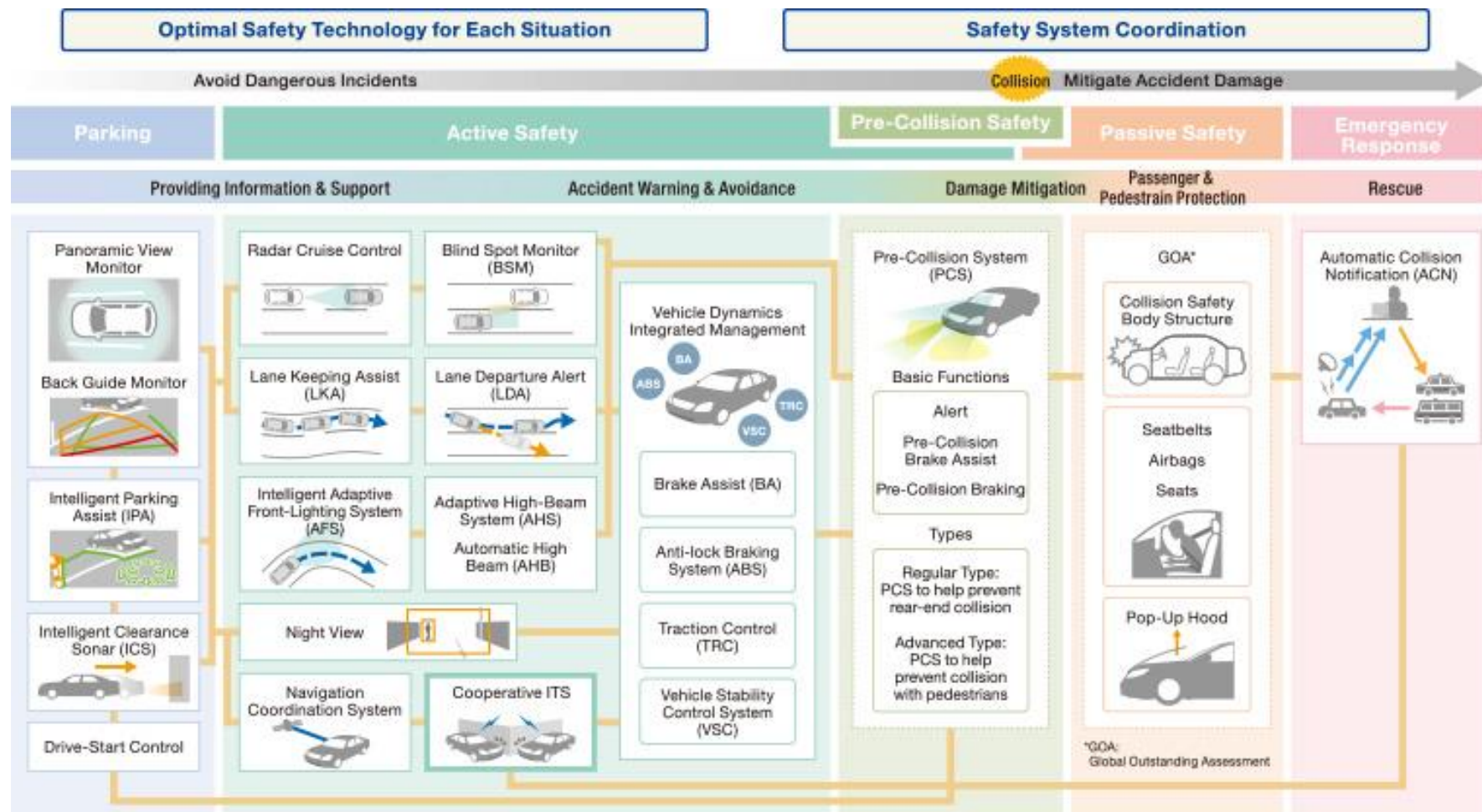
**Collision Warning with Auto Brake**

**IntelliSafe**

**City Safety**

**City Safety with Pedestrian Detection**

# Safety Tech not Understood



Source: Toyota

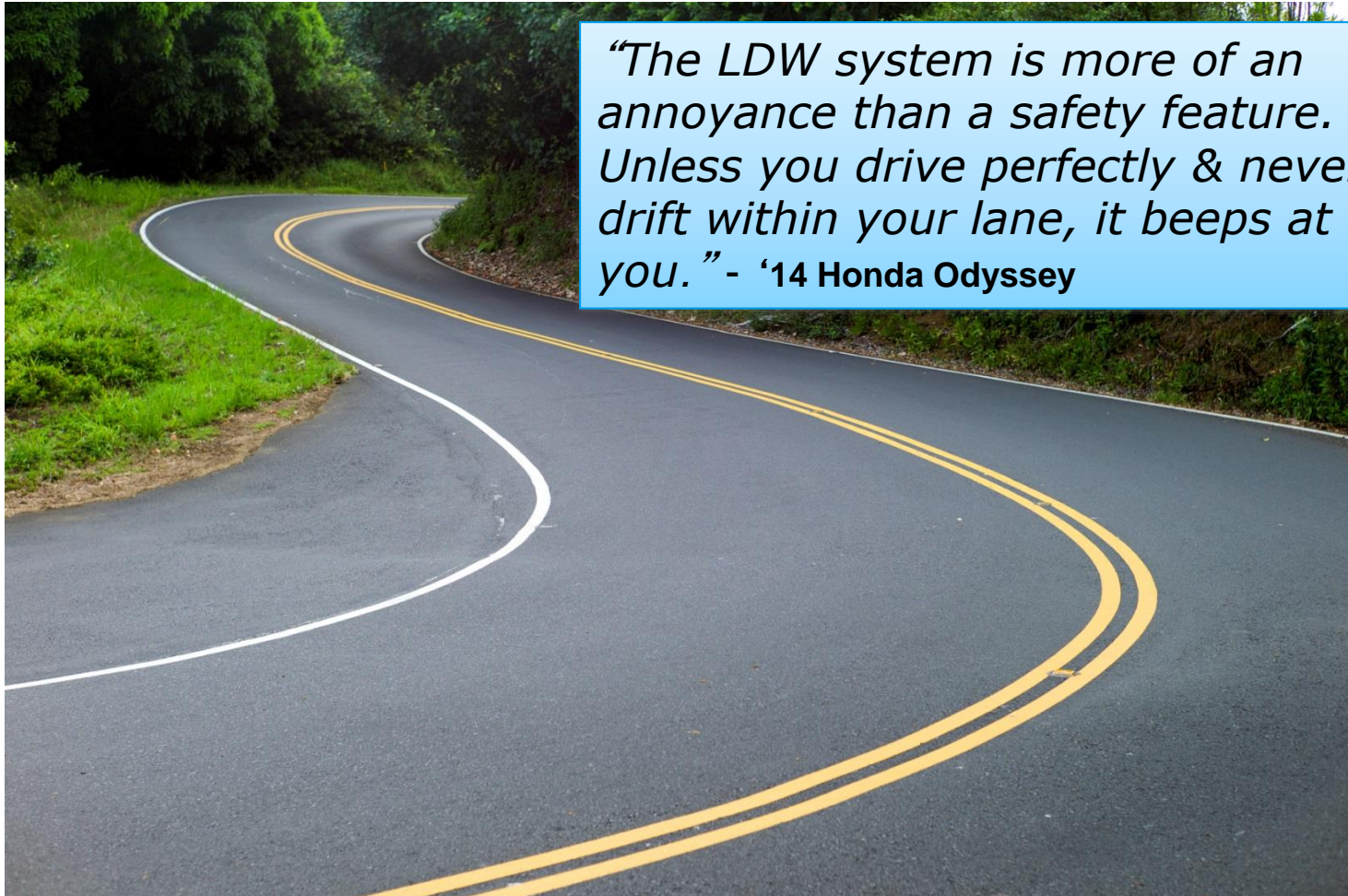


Dealers don't even understand

City Safety: Standard - Pedestrian Detection: Optional



## Lane Departure Problems



*“The LDW system is more of an annoyance than a safety feature. Unless you drive perfectly & never drift within your lane, it beeps at you.” - ‘14 Honda Odyssey*

## Lane Keeping Assist Problems





## Educating the Consumer



## CR Overall Score

**Ratings** > Upscale sedans and SUVs capable of hauling five passengers and their belongings in comfort and style.

WORSE | BETTER

RECOMMENDED

- Road tests scores
- Reliability and owner satisfaction surveys
- Frontal crash prevention system
- Independent crash test results

		Make & Model	Price	Overall Score	Survey Results		Safety	Road-Test Results									
Recommended	Rank		As Tested		Predicted Reliability	Owner Satisfaction	Front-Crash Prevention	Road-Test Score	Overall MPG	Dry Braking, 60-0 MPH, Ft.	Acceleration, 0-60 MPH, Sec.	Avoidance Maneuver Speed, MPH	Routine Handling	Ride/Noise	Seat Comfort, Front/Rear	Controls	Luggage, Suitcases + Duffels or Cargo Volume, Cu. Ft.
		LUXURY SEDANS															
✓	1	Infiniti Q70 (V6)	\$53,825	88	⬆️	⬇️	Opt.	90	21	128	5.8	54.5	⬆️	⬆️/⬆️	⬆️/⬆️	⬆️	3+2
✓	2	Lexus GS 350**	\$58,858	85	⬆️	⬆️	Std./⬆️	83	21	137	6.2	53.5	⬆️	⬆️/⬆️	⬆️/⬆️	⬇️	3+1
✓	3	Audi A6 3.0 Premium Plus Quattro	\$56,295	84	⬆️	⬆️	Opt.	90	22	132	5.7	52.5	⬆️	⬆️/⬆️	⬆️/⬆️	⬇️	3+1
✓	4	Cadillac CT6 Luxury (3.6L, AWD)	\$64,485	81	⬇️*	⬆️*	Opt.	95	22	125	6.5	52.0	⬆️	⬆️/⬆️	⬆️/⬆️	⬇️	3+2
✓	5	Genesis G80 3.8 (AWD)	\$52,450	80	⬇️	⬆️	Std./⬆️	89	20	129	7.2	53.0	⬆️	⬆️/⬆️	⬆️/⬆️	⬆️	3+1
✓	6	Cadillac XTS Premium	\$57,200	77	⬆️	⬇️	Opt.	82	22	128	7.2	53.0	⬆️	⬆️/⬆️	⬆️/⬆️	⬇️	4+1
	7	Acura RLX Tech	\$55,345	75	⬆️	⬇️	Std./⬆️	75	23	128	6.5	51.5	⬇️	⬇️/⬆️	⬆️/⬆️	⬇️	2+3
	8	BMW 535i	\$58,375	73	⬇️	⬆️	Opt.	81	23	137	6.1	51.5	⬆️	⬆️/⬆️	⬆️/⬆️	⬇️	3+1
	9	Cadillac CTS Luxury (3.6L, AWD)	\$58,780	71	⬇️	⬇️	Opt.	83	22	127	6.5	54.5	⬆️	⬆️/⬆️	⬆️/⬇️	⬇️	2+2
	10	Jaguar XF Prestige (V6, AWD)	\$66,586	66	⬇️*	⬆️*	Opt.	83	21	128	5.8	51.0	⬆️	⬆️/⬆️	⬆️/⬆️	⬇️	2+1



## Safety in CR's Overall Score


### Standard Safety Features

- Points Add to CR Overall Score
- Forward Collision Warning
- Low Speed Automatic Emergency Braking ≤ 55 mph
- High Speed Automatic Emergency Braking > 55 mph

Safety				
Front Crash Prevention	Road-Test Score	Overall MPG	Dry Braking, 60-0 MPH, Ft.	Acceleration, 0-60 MPH, Sec.
Std./ 	88	27	135	6.3
Opt.	84	28	132	6.3
Std./ 	85	26	136	6.8
Opt.	56	20	139	6.5
Opt.	79	23	125	6.5
Opt.	75	25	129	6.5
Opt.	80	20	134	8.8
Opt.	84	21	136	8.4
Opt.	70	20	133	8.0
Opt.	85	21	136	8.0
NA	72	17	141	8.1
Opt.	84	21	131	7.4
Opt.	84	20	134	7.5
Opt.	83	18	134	8.3
Opt.	80	20	136	7.5
Opt.	80	22	139	7.9
Opt.	67	18	135	7.9

# Consumer Reports Online - Car Safety

Safety Features



Fastening Seat Belts: The 3 Seconds That Save Lives

Car Safety At Any Price

Guide To Safety Features

Guide To Models With Advanced Safety Features

Forward-Collision V

The Road To Self-D

Smarter, Safer Cars


Car And Truck Bac

Aftermarket Crash

Emergency Kits

Safety

Safe Driving



10 Ways To Avoid A Car Crash

Cars That Can Save Your Life

Crash Course On Safety

Worst Case Scenarios

What To Do In A Roadside Emergency

Apps To Help After A Crash

Simple Tips To Drive Safely

Driving After A Hurricane

What To Do If You Lock Your Keys In The Car

SAFETY FEATURES

SAFE DRIVING

CHILD CAR SAFETY

TEENS

OLDER DRIVERS

RECALLS

SAFETY RESOURCES

offerings, and potentially  
See our list of [the latest](#)

CR

Consumer Reports

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APR 16 2016 ANNUAL AUTO ISSUE

# BEST & WORST NEW CARS

SAFER CARS FOR EVERYONE → NEW TECHNOLOGY THAT SAVES LIVES

## ConsumerReports

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WHAT GOES WRONG AS CARS AGE



BUYERS OFTEN overlook important safety features because they aren't aware of them or don't understand their benefit. We recommend that you look for the following when buying a vehicle. To see which models have specific safety features, see the vehicle profiles, starting on page 96.

**Antilock brake system (ABS).** This system prevents the wheels from locking up under hard braking, particularly on slippery surfaces. Without it, the vehicle tends to keep plowing ahead in whatever direction it was going. You can't steer, and locked wheels can cause a vehicle to slide sideways or even spin.

**Electronic stability control.** ESC helps keep the vehicle on its intended path during a turn to avoid sliding or skidding out of control. It's especially helpful in slippery conditions and accident avoidance situations, such as when trying to steer around a person or car that has pulled out in front of you. It can also help keep a top-heavy vehicle, like an SUV or a pickup, from getting into a rollover. Note that starting in 2012, all cars and light-duty trucks have standard ESC, which means they also have ABS.

**Head-protecting side airbags.** Look for a car with dedicated head-protection airbags that deploy from above the windows. Curtain airbags cover the side windows in both front and rear, preventing occupants from hitting their heads, while also helping to keep a person from being ejected in a side impact or rollover.

**Forward collision warning (FCW) and autobrake.** Also called a pre-crash warning system, these stand-alone or combined radar-, laser-, and/or camera-based systems warn drivers of an impending collision by using visual, auditory, or physical cues. Some vehicle systems also pre-charge the brakes and take other steps to prepare for impact. If the driver ignores the warnings, systems with autonomous braking, or autobrake, will apply partial or full braking force. They can be active at anywhere from walking to highway speeds.

**Blind-spot monitoring (BSM)**

**and assist.** A blind-spot monitoring system uses radars or cameras to scan the areas beside and behind you, looking for vehicles entering or lurking in your blind zones. When such a vehicle is detected, an illuminated icon appears in or near the appropriate side-view mirror. If you signal a turn while a car is in your blind zone, some systems send a stronger alert, such as a blinking light or louder chirps. More advanced systems help keep you in your own lane by applying the brakes on one side of the vehicle.

**Rear cross-traffic alert.** Often part of a package that includes blind-spot monitoring, rear

**cross-traffic alert** warns of traffic approaching from the sides as you reverse. The warning usually consists of an audible chirp and a visual cue in either the outside mirror or the rear camera's dash display. The more advanced systems can also pick out bicycles and pedestrians.

**Rear cameras and parking assist.** Rear-view cameras will be mandatory with the 2016 model year. They can help prevent a back-over accident, such as hitting a child who wanders behind your car. Parking assist sensor systems notify you with progressively louder and quicker beeps as you near an obstacle.

ConsumerReports.org/news



### Recommended Safety Features



Blind-spot detection



## Forward Collision Warning and Automatic Braking

*“collision warning system goes off randomly sometimes applying the brakes. This occurs when no other vehicles in front of it! Its crazy, scares the hell out of you” - ‘14 Jeep Grand Cherokee*

*“On cold days or when the sensor is obstructed by dirt the auto braking system will engage for no reason.” - ‘15 Infiniti Q50*

*“The system provides very little in the way of safety. 95% of the warnings are false, 2% are accurate and real warnings and the other 3% of the time the system fails to identify a real safety issue.” - ‘14 Honda Accord*

*“The Forward Collision Warning message kept coming on with no traffic nearby. The dealer said that my E-Z Pass transponder was interfering with the electronics.” - ‘15 Acura TLX*

Automatic  
Braking  
System?



## What can we do?

- Standard Names for Systems
- Tune to eliminate false alerts
- Allow drivers to adjust sensitivity
- Make Effective Safety Systems Standard
- Limitation on misleading marketing

Thank you!