



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**





Role of New Car Assessment Program (NCAP) in Educating Consumers About Vehicle Safety

Presented by Jennifer
Dang (Chief of NCAP) and
Susan McMeen (Director of
Consumer Information)
October 27, 2016



What is NCAP?

- Established in 1978 by NHTSA
- A consumer information program that aims to improve motor vehicle safety by:
 - Providing meaningful and timely comparative safety information for new vehicle purchasers
 - Encouraging manufacturers to voluntarily improve the safety of their vehicles through market forces
- Provides safety ratings information on approximately 85 percent of the new model year vehicle fleet





Current NCAP

GOVERNMENT 5-STAR SAFETY RATINGS		
Overall Vehicle Score		
Based on the combine ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.		
Frontal Crash	Driver	★★★★★
	Passenger	★★★★★
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat	★★★★★
	Rear seat	★★★★★
Based on the risk of injury in a side impact.		
Rollover		★★★★★
Based on the risk of rollover in a single vehicle crash.		
Star Ratings range from 1 to 5 stars (★★★★★) with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA) www.safercar.gov or 1-888-327-4236		

Frontal Crash Test



Side Crash Tests



Rollover Tests





Past Four Decades of Market Response to NCAP

Full Frontal Impact: Percent of Vehicles with 4- and 5-Star Ratings (Old NCAP)

<u>Model Year</u>	<u>Driver</u>	<u>Front Passenger</u>			
1979	30%	43%			
2010	99%	99%			

Side Impact Barrier: Percent of Vehicles with 4- and 5-Star Ratings (Old NCAP)

<u>Model Year</u>	<u>Driver</u>	<u>Rear Passenger</u>			
1997	24%	20%			
2010	97%	95%			

Percent of Vehicles with 4- and 5-Star Ratings (Current NCAP)

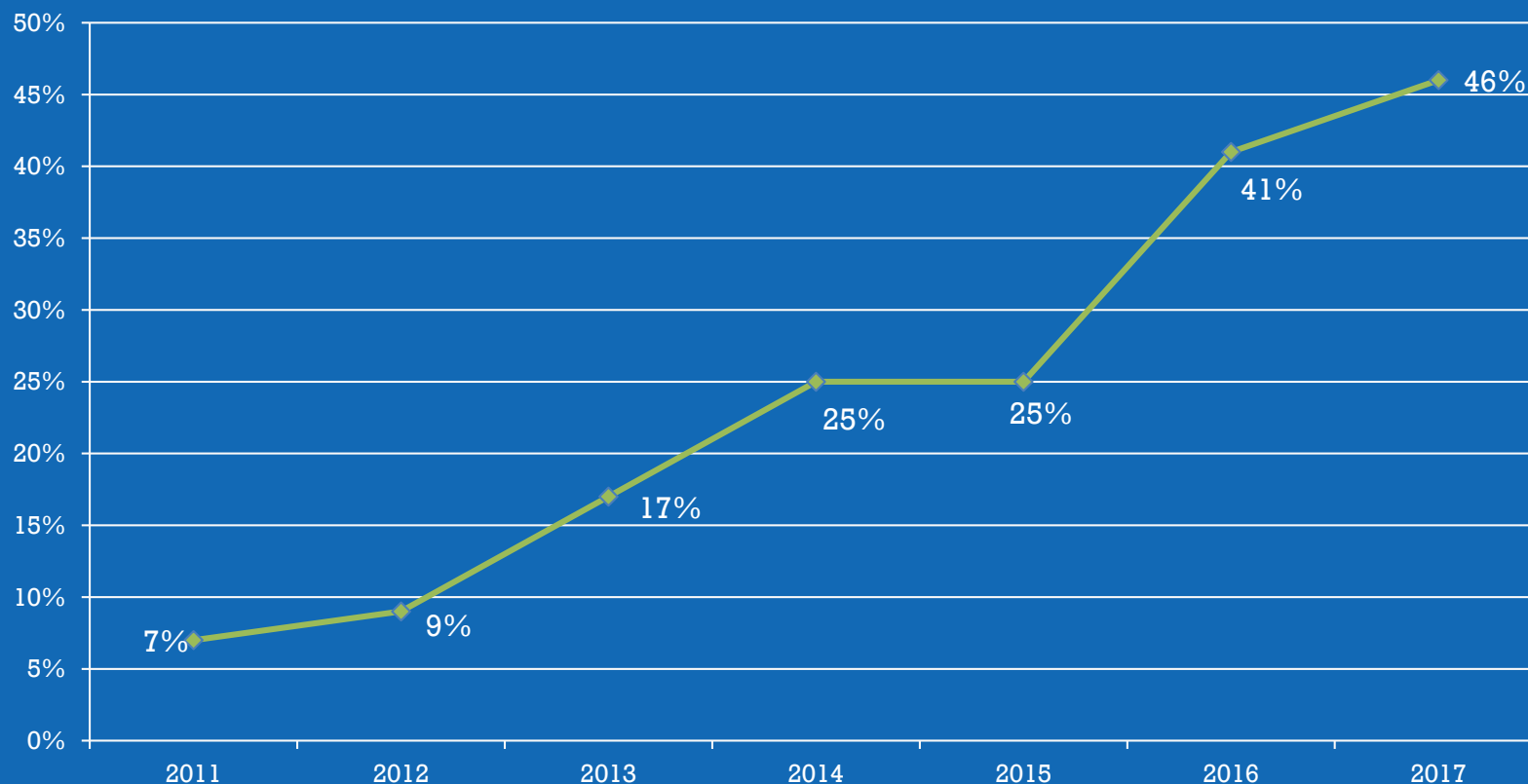
<u>Model Year</u>	<u>Full Frontal Impact</u>		<u>Side Impact Barrier</u>		<u>Side Impact Pole</u>
	<u>Driver</u>	<u>Front Passenger</u>	<u>Driver</u>	<u>Rear Passenger</u>	<u>Driver</u>
2011	79%	66%	85%	78%	83%
2014	89%	81%	95%	95%	91%
2016	98%	93%	97%	97%	97%

Note: The percent numbers are based on vehicles rated by NCAP



Percentage of Trim Lines Offered LDW and Passed NCAP Performance Test Criteria

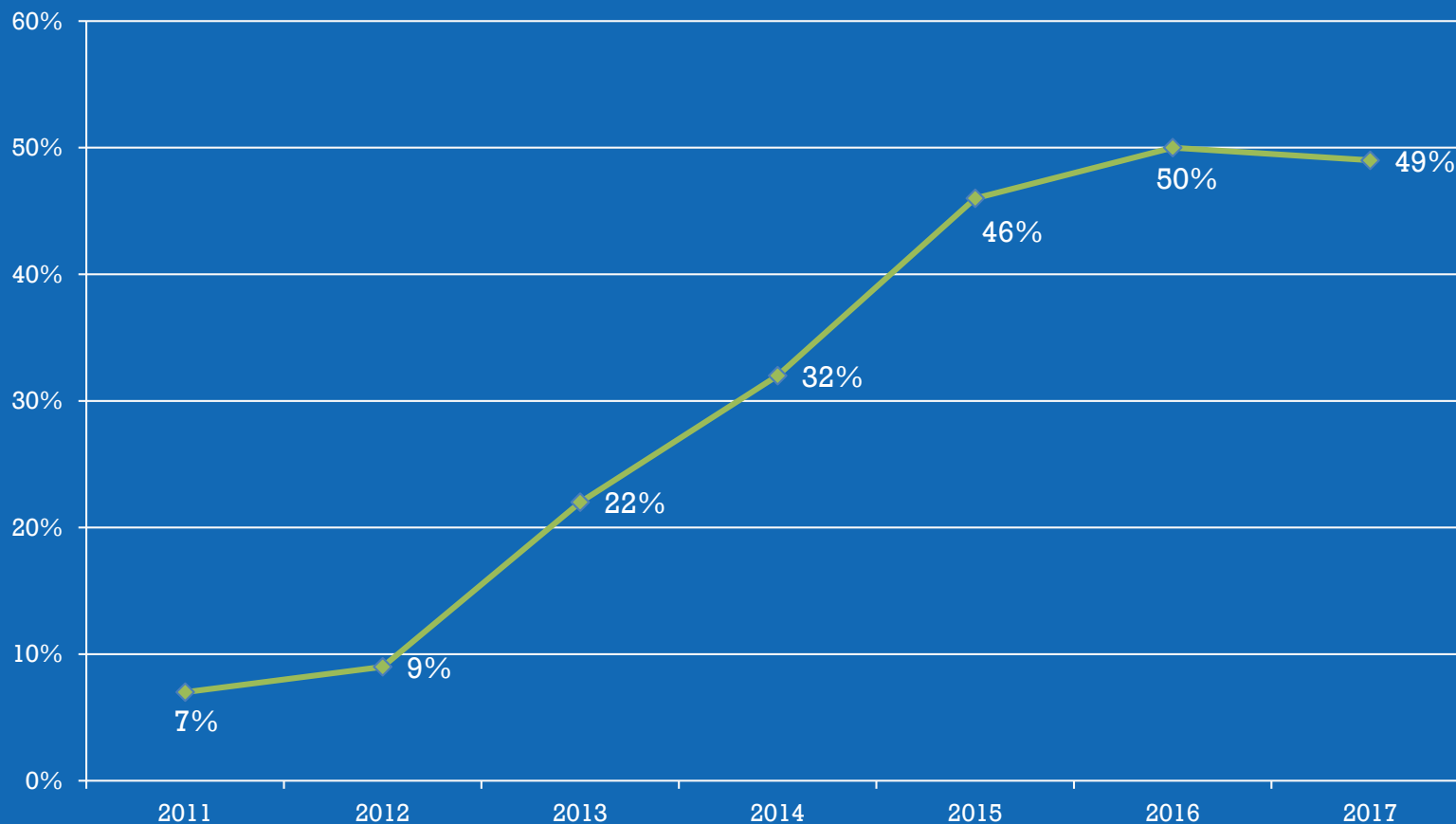
Lane Departure Warning Systems (LDW)  : MY 2011-2017





Percentage of Trim Lines Offered FCW and Passed NCAP Performance Test Criteria

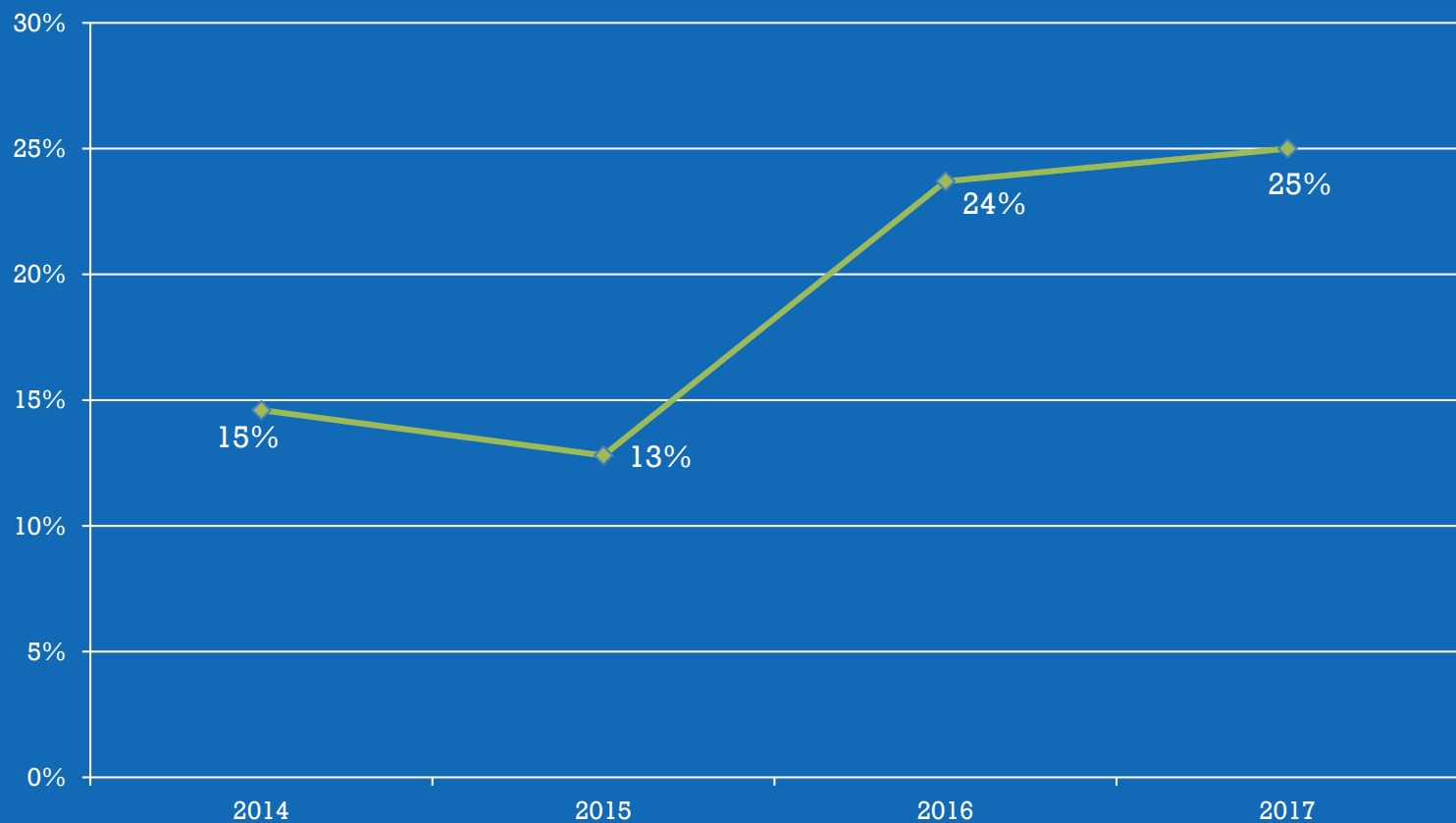
Forward Collision Warning Systems (FCW)  : MY 2011-2017





Percentage of Trim Lines Offered RVS and Passed NCAP Performance Test Criteria

Rearview Video Systems (RVS)  : MY 2014-2017

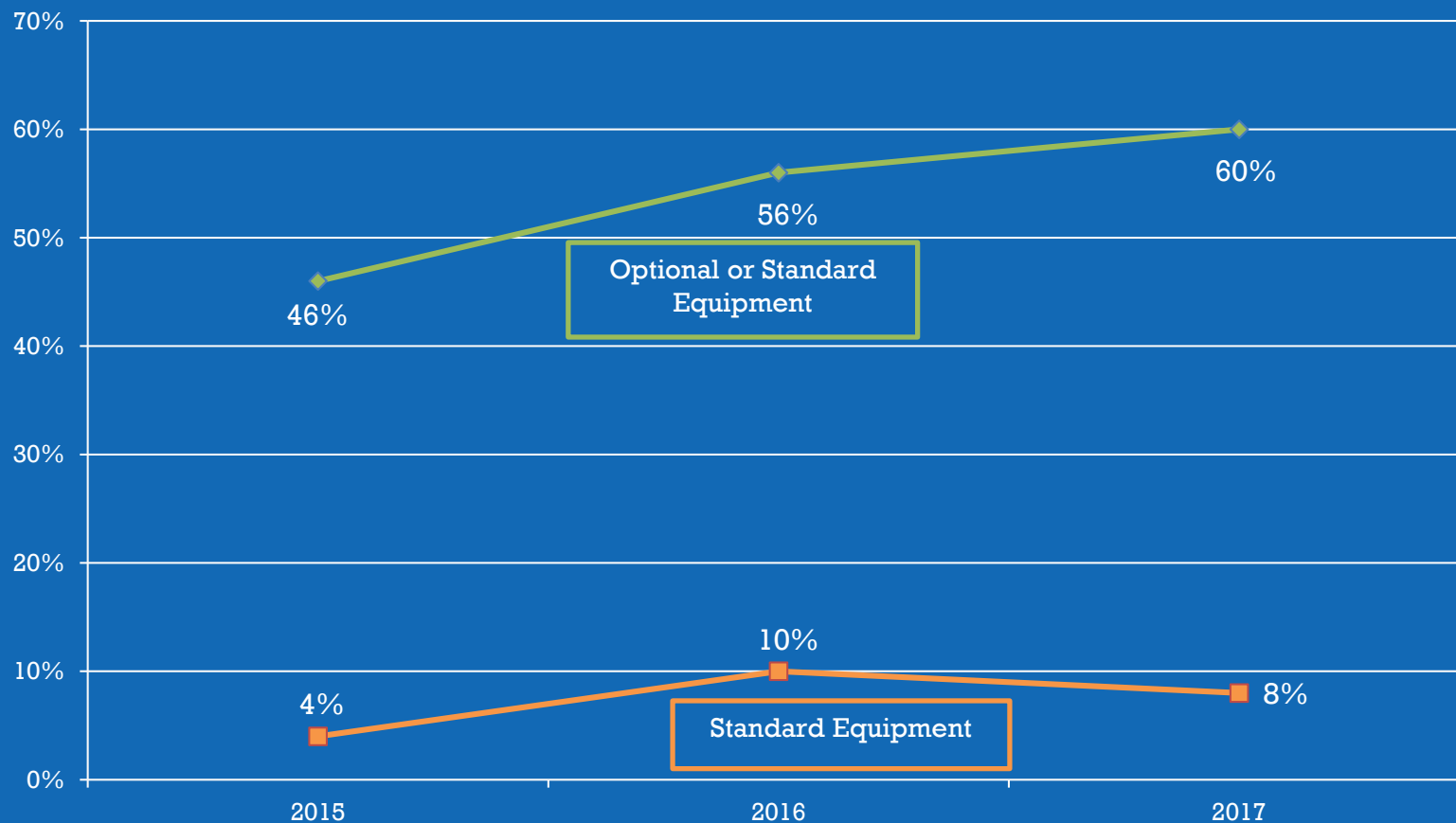




Percentage of Trim Lines Offered CIB, DBS, or both

Crash Imminent Braking (CIB) Systems: MY 2015-2017

Dynamic Braking Support (DBS): MY 2015-2017





NCAP Success and Goal

Success

- Manufacturers respond to our crash test programs by designing vehicles to achieve 4- and 5-star ratings at a much faster pace than ever before
 - Full frontal impact test (old NCAP) - *more than 2 decades*
 - Side impact barrier test (old NCAP) - *about 10 years*
 - Last upgrade (current NCAP) - *less than 4 years*
- Steady increases of vehicles with advanced technologies that are recommended by our current program

Goal

- Encourage continuous advancement of vehicle safety



Planned NCAP Upgrades

Overall Vehicle Score



Crashworthiness



Crash Avoidance



Pedestrian



Crashworthiness Rating



Crash Avoidance Rating



Pedestrian Rating





Promoting the CURRENT 5-Star Safety Ratings Program - To Date

- Online and social media campaign
- Videos: Lane Departure Warning, Forward Collision Warning, AEB, and Rearview Video Systems
- Online automotive sites and vehicle-focused organizations
- Auto Shows
- OEM advertising guidelines
- Dealer tool kits





Communicating the NEW 5-Star Safety Ratings Program – Coming Soon

- Videos to demonstrate new technologies, dummies, and crash tests
- Online automotive sites and vehicle-focused organizations
- Online and social media campaign
- Dealer tool kits
- Auto shows
- Webinars
- Press Event

5-STAR SAFETY RATINGS FOR THE FUTURE
THE REVOLUTIONARY THOR

THOR = Test Device for Human Occupant Restraint

THOR BACKGROUND

To understand and measure the human body's movement during a vehicle crash, NHTSA uses anthropomorphic test devices, or crash test dummies, in controlled laboratory crashes. These crash test dummies are used to measure the potential for injury and evaluate the performance of vehicle safety features during a crash. THOR is an advanced crash test dummy, designed to represent a mid-size adult male in a vehicle during head-on and angled crashes. Extensive measurement capabilities allow THOR to predict injuries to the head, neck, chest, abdomen, pelvis, and legs.

WHY THOR?

THOR's human-like characteristics in a crash and state-of-the-art measurement capability make it the best choice to evaluate the advanced safety features in today's vehicles.

Human-Like Characteristics

- Neck that bends, twists, and stretches for realistic head motion
- Torso with anatomically correct ribcage and shoulder
- Flexible spine to allow proper upper body motion
- Abdomen that responds to seat belt interaction
- Legs that respond to impact of dashboard and pedal

Measurement Capability



Over 100 distinct measurements to help predict injury, including:

- Head rotation and other motions
- Neck forces and rotation
- Ribcage motion at multiple locations
- Abdomen motion at multiple locations
- Pelvis, thigh, shin, and ankle forces

More information at:
www.nhtsa.gov/research/Biomechanics&4=Trauma/THOR%20%20Male%20ATD

Funded by NHTSA
throughout development.

50TH PERCENTILE MALE ANTHROPOMORPHIC TEST DEVICE (ATD)



NHTSA

