

# Status Report

Insurance Institute for Highway Safety | Highway Loss Data Institute



## A higher standard

39 vehicles meet new criteria for  
*TOP SAFETY PICK, TOP SAFETY PICK+*

### ALSO IN THIS ISSUE

Vol. 48, No. 9  
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- ▶ Fatal crashes of ATVs on public roads
- ▶ More evidence that graduated licensing works



**F**ar fewer vehicles are winning the Institute's coveted safety awards after IIHS raised the bar to require good or acceptable performance in the small overlap front crash test for *TOP SAFETY PICK* and a front crash prevention system for *TOP SAFETY PICK+*. Just 39 vehicles earn either award for 2014, compared with 130 that took home 2013 accolades at this time last year.

"We've made it more difficult for manufacturers this year," says IIHS President Adrian Lund. "Following a gradual phase-in, the small overlap crash is now part of our basic battery of tests, and good or acceptable performance should be part of every vehicle's safety credentials. We also felt it was time to offer extra recognition to manufacturers that are offering a proven crash avoidance technology."

Last year, good or acceptable small overlap performance was required only for *TOP SAFETY PICK+*. Vehicles that lacked it could still earn *TOP SAFETY PICK*, without the plus, if they had good ratings in the Institute's other tests (see *Status Report*, Dec. 20, 2012, at [iihs.org](http://iihs.org)). For 2014 that's no longer the case. The higher award now recognizes vehicles that earn at least a basic rating for front crash prevention, in addition to meeting the *TOP SAFETY PICK* criteria. Besides good or acceptable small overlap performance, these include good performance in the longstanding moderate overlap front, side, roof strength and head restraint tests.

IIHS has been awarding *TOP SAFETY PICK* to vehicles that perform well in its tests since the 2006 model year and has

tightened criteria twice before this year. *TOP SAFETY PICK+* was introduced last year to reward automakers that achieved good or acceptable performance in the just-introduced small overlap test, in which 25 percent of a vehicle's front end on the driver's side strikes a rigid barrier at 40 mph. Some manufacturers quickly modified vehicles to meet this new challenge or took the new test into account as they implemented scheduled redesigns, and more have done so for 2014.

The test replicates what happens when the front corner of a vehicle collides with another vehicle or an object like a tree or utility pole. Although this type of crash is responsible for many deaths and serious injuries, it wasn't addressed by other frontal tests conducted by IIHS or the federal government (see *Status Report*, Aug. 14, 2012).

With the small overlap test now incorporated into *TOP SAFETY PICK*, IIHS is using the *TOP SAFETY PICK+* designation to reward manufacturers that provide the next level of safety. This year, that means vehicles that not only protect their occupants in a crash but also have systems that can prevent or mitigate front-to-rear crashes. Front crash prevention, which includes both warning systems and automatic braking, is intended to help inattentive drivers avoid rear-ending a stopped or slower-moving vehicle in front of them.

IIHS began rating front crash prevention systems earlier this year after HLDI research indicated that forward collision warning and automatic braking systems are reducing crashes (see *Status Report*, Sept. 27, 2013). Vehicles can earn



A good rating for protection in a small overlap front crash and an advanced rating for front crash prevention qualify the Mazda 3 for *TOP SAFETY PICK+*.

	<b>TOP SAFETY PICK+</b>	<b>TOP SAFETY PICK</b>
Minicar		Chevrolet Spark
Small cars	Honda Civic hybrid Mazda 3 Toyota Prius	Dodge Dart Ford Focus Honda Civic 2-door Hyundai Elantra Scion tC Subaru Impreza Subaru XV Crosstrek
Midsized moderately priced cars	Ford Fusion Honda Accord 2-door Honda Accord 4-door Mazda 6 Subaru Legacy Subaru Outback	Chrysler 200 Dodge Avenger Kia Optima Nissan Altima Toyota Camry Volkswagen Passat
Midsized luxury/near-luxury cars	Infiniti Q50 Lincoln MKZ Volvo S60	Acura TL
Large luxury cars	Acura RLX Volvo S80	
Small SUVs	Mazda CX-5 Mitsubishi Outlander Subaru Forester	Mitsubishi Outlander Sport
Midsized SUV	Toyota Highlander	
Midsized luxury SUVs	Acura MDX Mercedes-Benz M-Class Volvo XC60	Volvo XC90
Minivan	Honda Odyssey	

Twenty-two vehicles earn *TOP SAFETY PICK+*, thanks to a high level of protection in crashes and the availability of front crash prevention. An additional 17 earn *TOP SAFETY PICK* by meeting the crashworthiness criteria alone.

# Award criteria

To earn *TOP SAFETY PICK+*, models must achieve good ratings in the moderate overlap front (1), side (2), roof strength (3) and head restraint (4) tests, as well as a good or acceptable rating in the small overlap front test (5) and a basic, advanced or superior rating for front crash prevention (6).

Models that meet the crashworthiness criteria but don't have a front crash prevention system qualify for a *TOP SAFETY PICK* award.



basic, advanced or superior ratings for systems offered as standard or optional. A vehicle with a forward collision warning system that meets National Highway Traffic Safety Administration performance criteria qualifies for a basic rating. Additional points are awarded for autobrake, based on performance in IIHS track tests at 12 mph and 25 mph.

Front crash prevention systems have been spreading quickly through the vehicle fleet. As a result, the list of *TOP SAFETY PICK+* winners is, at 22, longer than the list of 17 regular *TOP SAFETY PICK* winners.

"Consumers who want both crash prevention technology and the latest in occupant protection have a fair number of vehicles to choose from," Lund says. "We hope manufacturers will continue to incorporate front crash prevention, developing more robust systems and adding them to more trim levels or, better yet, making them standard equipment."

The front crash prevention features of the *TOP SAFETY PICK+* winners run the gamut from basic warning systems, such as those offered on the Ford Fusion, Lincoln MKZ and Honda's four winners, to Subaru's EyeSight warning and autobrake system. EyeSight avoids a collision in tests at both 12 and 25 mph and is available on the Forester, Legacy and Outback. The Subaru and the Infiniti Q50 are the only vehicles so far to earn 6 of 6 points for front crash prevention.

Most of the *TOP SAFETY PICK+* winners qualify for the award only when equipped with optional front crash prevention systems. In the case of the Honda Civic 4-door, forward collision warning is standard on the hybrid version but not available on any other version. A Civic 4-door with a gas engine — or any vehicle on the list not equipped with front crash prevention — still would earn *TOP SAFETY PICK*.

The only other models that qualify for *TOP SAFETY PICK+* based on standard equipment are the Volvo S60, S80 and XC60. These have City Safety, a low-speed autobrake system

that on its own is enough for an advanced rating. They also are available with an optional forward collision warning and autobrake system that works at higher speeds and helps the vehicles earn superior marks for front crash prevention.

The 2014 *TOP SAFETY PICK+* winners include eight models that didn't earn the award in 2013. Among them are fully redesigned models, including the Acura MDX and RLX, Infiniti Q50, Mazda 3 and Toyota Highlander. Among *TOP SAFETY PICK* winners, the Chevrolet Spark minicar is a new model. Honda/Acura has the most winners of any automaker, with six models earning *TOP SAFETY PICK+* and two earning *TOP SAFETY PICK*.

Some winners that didn't undergo a full redesign were modified to improve small overlap performance. This includes the Toyota Camry, which now qualifies for *TOP SAFETY PICK*. The 2012-13 Camry models were rated poor for protection in a small overlap front crash, but the 2014 model earns an acceptable rating. The Toyota Prius and the Mazda CX-5 also were tweaked for the small overlap test and now earn *TOP SAFETY PICK+*. Changes to these vehicles and some others were made after the 2014 model year started.

The Volvo S80, a large luxury car, is new to the *TOP SAFETY PICK+* list because it hadn't been previously tested for small overlap performance. However, it has had the same basic design since 2007, so its good small overlap result applies to earlier models as well.

While many 2013 *TOP SAFETY PICK* winners didn't make it to the winners' circle for 2014, that doesn't mean they are any less safe than before. Vehicles that have fallen off the list have less than acceptable ratings for small overlap protection or haven't been tested yet. However, all models that earned *TOP SAFETY PICK* in 2013 continue to offer a high level of protection in four main crash types — moderate overlap front, side, rollover and rear. ■

# Small overlap, front crash prevention ratings

<b>TOP SAFETY PICK+</b>		small overlap test	front crash prevention
Small cars	Honda Civic hybrid	<b>G</b>	
	Mazda 3 built after October 2013	<b>G</b>	
	Toyota Prius built after November 2013	<b>A</b>	
Midsize moderately priced cars	Ford Fusion	<b>A</b>	
	Honda Accord 2-door	<b>A</b>	
	Honda Accord 4-door	<b>G</b>	
	Mazda 6	<b>A</b>	
	Subaru Legacy	<b>A</b>	
	Subaru Outback	<b>A</b>	
Midsize luxury/near-luxury cars	Infiniti Q50	<b>A</b>	
	Lincoln MKZ	<b>A</b>	
	Volvo S60	<b>G</b>	
Large luxury cars	Acura RLX	<b>G</b>	
	Volvo S80	<b>G</b>	
Small SUVs	Mazda CX-5 built after October 2013	<b>G</b>	
	Mitsubishi Outlander	<b>G</b>	
	Subaru Forester	<b>G</b>	
Midsize SUV	Toyota Highlander	<b>A</b>	
Midsize luxury SUVs	Acura MDX	<b>G</b>	
	Mercedes-Benz M-Class built after August 2013	<b>G</b>	
	Volvo XC60	<b>G</b>	
Minivan	Honda Odyssey	<b>G</b>	

<b>TOP SAFETY PICK</b>		small overlap test
Minicar	Chevrolet Spark	<b>A</b>
Small cars	Dodge Dart	<b>A</b>
	Ford Focus	<b>A</b>
	Honda Civic 2-door	<b>G</b>
	Hyundai Elantra	<b>A</b>
	Scion tC	<b>A</b>
	Subaru Impreza	<b>G</b>
	Subaru XV Crosstrek	<b>G</b>
	Midsize moderately priced cars	Chrysler 200
Dodge Avenger		<b>A</b>
Kia Optima		<b>A</b>
Nissan Altima		<b>A</b>
Toyota Camry built after November 2013		<b>A</b>
Volkswagen Passat		<b>A</b>
Midsize luxury/near-luxury cars	Acura TL	<b>G</b>
Small SUV	Mitsubishi Outlander Sport	<b>A</b>
Midsize luxury SUV	Volvo XC90	<b>G</b>

**Crashworthiness ratings**

**G** Good      **A** Acceptable  
**M** Marginal      **P** Poor

**Front crash prevention ratings**

SUPERIOR      ADVANCED      BASIC

For details on individual vehicles, go to [ihs.org](http://ihs.org)

Vehicles can qualify for *TOP SAFETY PICK* or *TOP SAFETY PICK+* with a good or acceptable rating in the small overlap front test. In addition, *TOP SAFETY PICK+* winners must have a basic, advanced or superior rating for front crash prevention.

# Hundreds die in ATV crashes on public roads

All-terrain vehicles are made for off-road use, but large numbers of people take their ATVs on public roads, where they are generally prohibited. About 1,700 ATV riders died in crashes on public roads in the United States from 2007 to 2011.

Although many ATVs can reach highway speeds, their low-pressure tires are not designed for paved surfaces. In addition, many models are apt to roll over.

Deaths of ATV drivers and passengers have increased substantially during the past few decades, as the vehicles have risen in popularity. Today, two-thirds of fatal ATV crashes occur on public or private roads. A recent IIHS study sought to learn more about these crashes and found that the vast majority of ATV riders killed in crashes on public roads are 16 or older and male. Few fatally injured riders wear helmets, and many are impaired by alcohol.

"These vehicles are designed for off-road use, yet most of the fatal crashes are occurring on roads," says Anne McCartt, IIHS senior vice president for research and a co-author of the study.

The Consumer Product Safety Commission (CPSC) conducts a yearly census of ATV rider deaths, including deaths on public roads, on private roads and off-road. Between 1986 and 1998, ATV deaths averaged 227 a year, but then increased to more than 800 in 2007, the last year for which complete CPSC data are available. In 2007, 65 percent of the deaths for which a location was identified took place on public or private roads. The agency estimates that 10.6 million ATVs were in use in the U.S. in 2010, compared with 5.6 million in 2001.

For the Institute study of ATV rider deaths from 2007 through 2011, the researchers turned to the National Highway Traffic Safety Administration's Fatality Analysis Reporting System. Although this database includes only fatal crashes on public roads, its data are more recent and more comprehensive than what is available from the CPSC.

A total of 1,701 ATV riders were killed on public roads in the five-year period. Some ATVs can carry passengers, but nearly 9 out of 10 riders killed were drivers.

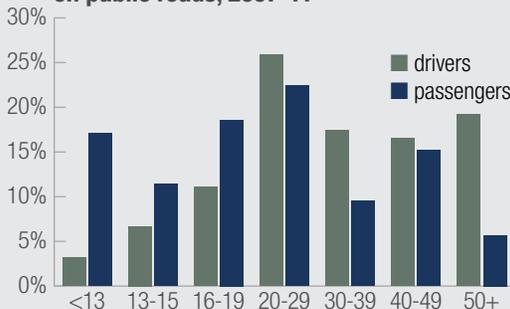


Many ATVs can reach highway speeds, but their low-pressure tires aren't designed for paved roads. Rollovers also are a risk.

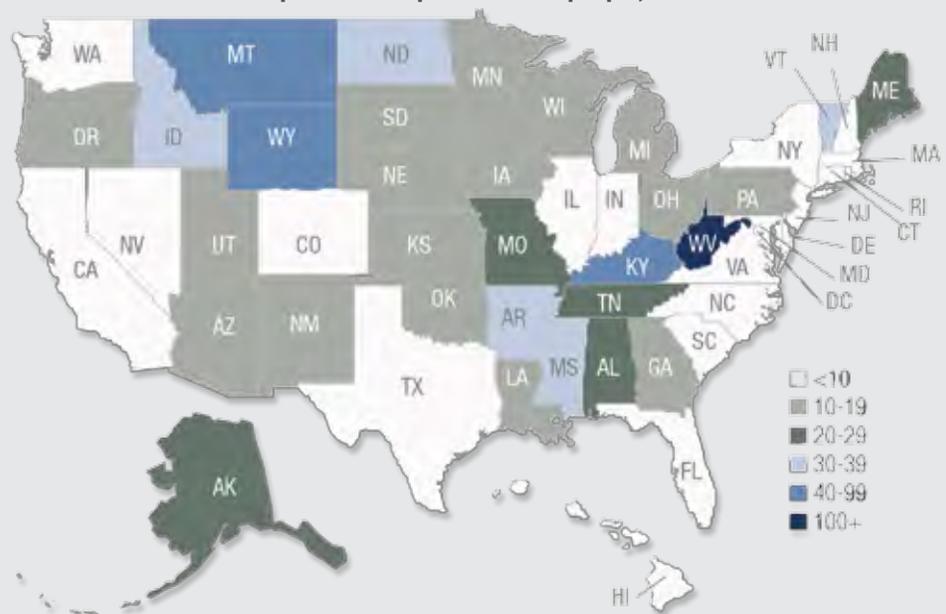
## Characteristics of ATV drivers killed on public roads, 2007-11

	percent
male	90
unhelmeted	87
BAC ≥ 0.08%	43

## Ages of ATV riders killed in crashes on public roads, 2007-11



## ATV rider deaths on public roads per 10 million people, 2007-11



Rider fatalities during the five-year period peaked in 2008, declining 19 percent by 2011. As with the recent decline in motor vehicle fatalities generally, much of the drop is believed to be connected to the recent recession.

The crashes occurred primarily in rural areas and in 49 states. No crashes occurred in New Hampshire or the District of Columbia. The highest numbers of deaths occurred in Kentucky (122), Pennsylvania (97), West Virginia (96) and Texas (95). West Virginia had by far the highest rate of ATV rider deaths (105 per 10 million people), and Wyoming was a distant second with 70.

Only 13 percent of drivers and 6 percent of passengers killed wore helmets. That compares with 46 percent of motorcyclists killed in crashes in 2011. Among fatally injured ATV drivers, 43 percent had a blood alcohol concentration of 0.08 percent or greater, compared with about one-third of passenger vehicle and motorcycle drivers.

Fatal ATV crashes are more likely than other fatal crashes to involve a single vehicle. Three-quarters of the fatal crashes in the study involved just one ATV, while only 46 percent of fatal motorcycle crashes in 2007-11 were single-vehicle crashes. Of the single-vehicle fatal ATV crashes, 56 percent involved a rollover.

Much attention has been paid to ATV fatalities among children, but in recent years most fatally injured ATV riders have been men. Ninety percent of the ATV driver deaths in the federal government's database of fatal crashes were 16 and older, and 90 percent were males.

One way to address the danger of ATVs traveling on paved surfaces might be to strengthen laws that prohibit the vehicles on public roads, since most are paved. Most states have such bans, but they have exceptions that make enforcement difficult. For example, ATVs can cross roads or ride alongside the road for a limited number of miles. Helmet laws also could be strengthened. Only eight states require all ATV operators on public roads to wear helmets. Finally, it may be possible to improve the stability of ATVs to prevent rollovers without sacrificing their off-road capabilities.

For a copy of "On-road all-terrain vehicle (ATV) fatalities in the United States" by A.F. Williams et al., email [publications@ihs.org](mailto:publications@ihs.org). ■

## Study of teen fatal crash rates adds to evidence of GDL benefits

**A** recent study adds to the evidence that graduated driver licensing (GDL) systems are working to cut fatal crashes among 16 and 17 year-olds. Researchers analyzed specific GDL components and found that permit holding periods of nine months to a year and a one-passenger limit during the intermediate license stage had the biggest benefits.

Researchers from the California Department of Motor Vehicles and the University of North Carolina used fatal crash data and population data from 1986 to 2007 to analyze the effects of various components of GDL laws across the nation.

They found that fatal crash rates for 16-17 year-olds were 21 percent lower with permit holding periods of nine to 12 months, compared with no holding period. A limit of no more than one passenger was associated with a 15 percent reduction in fatal crash rates, compared with no passenger restriction. Two other provisions — an intermediate license age of 16½ to 17 and a nighttime restriction of 10 p.m. or earlier — were associated with fatal crash rate reductions for 16 year-olds but had no significant effect on crash rates of 17 year-olds.

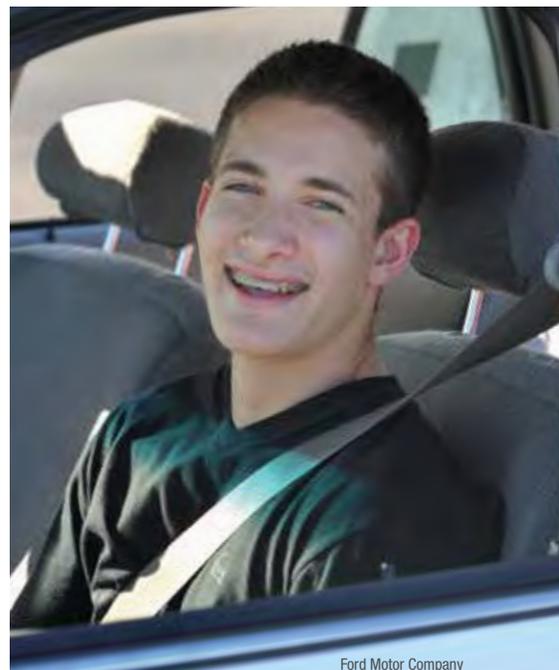
Based on earlier research by IIHS and HLDI, the Institute estimated in 2012 that if every state adopted all five components of the toughest GDL laws in the nation, more than 500 lives could be saved and more than 9,500 collisions could be prevented each year (see *Status Report*, May 31, 2012, at [ihs.org](http://ihs.org)). A calculator at [ihs.org/gdl](http://ihs.org/gdl) allows users to see how adjusting any of the five provisions — permit age, practice hours, license age, night driving and passenger limits — could affect collision insurance claim rates and fatal crash rates among 15-17 year-olds in a given state.

In the latest study, the researchers found that minimum learner permit holding periods reduced fatal crash rates if they lasted at least five months, but holding periods of nine to 12 months were associated with much bigger reductions. The holding period may help by increasing the time the teenager is driving with supervision and providing young drivers with more practice time, the authors suggest. The IIHS study found no additional benefit from a holding period, once practice hours and the effect of the holding period on licensing age were taken into account.

When it comes to passenger restrictions, the study found that a limit of one teen passenger resulted in a greater reduction of fatal crash risk than complete bans on passengers. The authors hypothesize that young drivers are more likely to comply with a one-passenger limit than an outright ban. However, in the IIHS study, total bans on passengers were found to be more effective than one-passenger limits.

The study also found that a licensing age of 16½ or 17 resulted in the lowest fatal crash rates for 16 year-olds, likely because it resulted in fewer 16 year-olds driving unsupervised (or very few in the case of 17). A night driving restriction of 10 p.m. or earlier reduced fatal crash rates of 16 year-olds by 19 percent.

"Graduated driver licensing program component calibrations and their association with fatal crash involvement" by S.V. Masten et al., appears in the August 2013 issue of *Accident Analysis and Prevention*. ■



Ford Motor Company

# Status Report

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The **Insurance Institute for Highway Safety** is an independent, nonprofit scientific and educational organization dedicated to reducing the losses — deaths, injuries and property damage — from crashes on the nation's roads.

The **Highway Loss Data Institute** shares and supports this mission through scientific studies of insurance data representing the human and economic losses resulting from the ownership and operation of different types of vehicles and by publishing insurance loss results by vehicle make and model.

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