

# STATUS REPORT

INSURANCE INSTITUTE  
FOR HIGHWAY SAFETY

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She's on her way out to pick up a friend and drive to her granddaughter's recital. The next stop is lunch. Then . . .

Staying active often means continuing to drive, although maybe not as much. New analyses refine our understanding of the risks when older people drive.

Despite public concerns about older drivers, research has indicated that, as far as fatality risks are concerned, older motorists are a danger mainly to themselves. Now a new Institute analysis looking at both fatal and nonfatal



Who  
poses  
the  
greater  
risk,

older or younger drivers?  
The oldest ones are  
overinvolved in crashes but  
less likely than teenagers  
to hurt other people. Drivers  
younger than 30 are responsible  
for far more injuries and lives  
lost than senior drivers.

injury rates does show a modest increase in the risk of nonfatal injuries to occupants of other vehicles involved in collisions with vehicles driven by older people, compared with drivers 30-59 years old.

The largest increase in the risk for occupants of the other vehicles was observed among the oldest group of drivers (those 85 and older). This finding, which is based on insurance injury liability claims results, suggests that as drivers get older they become increasingly likely to be at fault in their collisions.

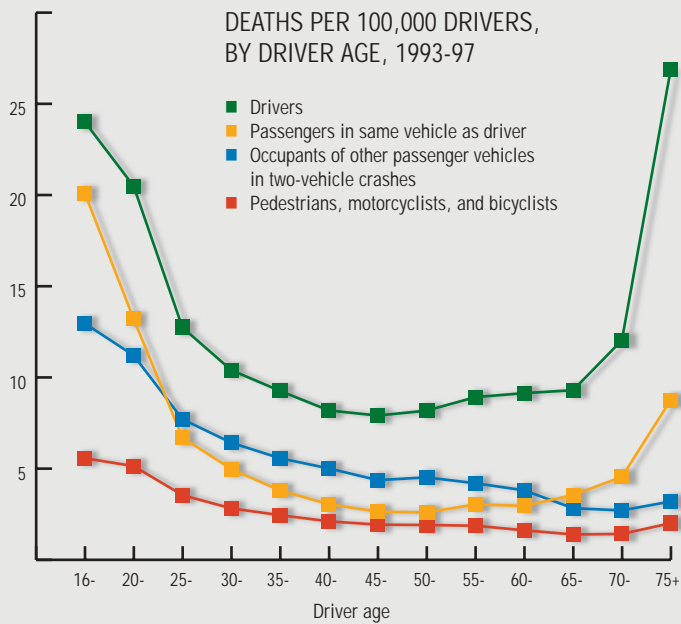
The new study examined injury rates using three federal data sources — the Fatality Analysis Reporting System, National Automotive Sampling System/General Estimates System, and Nationwide Personal Transportation Survey. The study also examined insurance data from the Highway Loss Data Institute. The researchers analyzed fatal and nonfatal injury rates for four groups of people including drivers, their passengers, occupants of other vehicles, and others on the road (pedestrians, motorcyclists, and bicyclists).

"The main strength of this study compared with previous ones we've conducted is the variety and scope of the data sources we used this time around. We looked at the

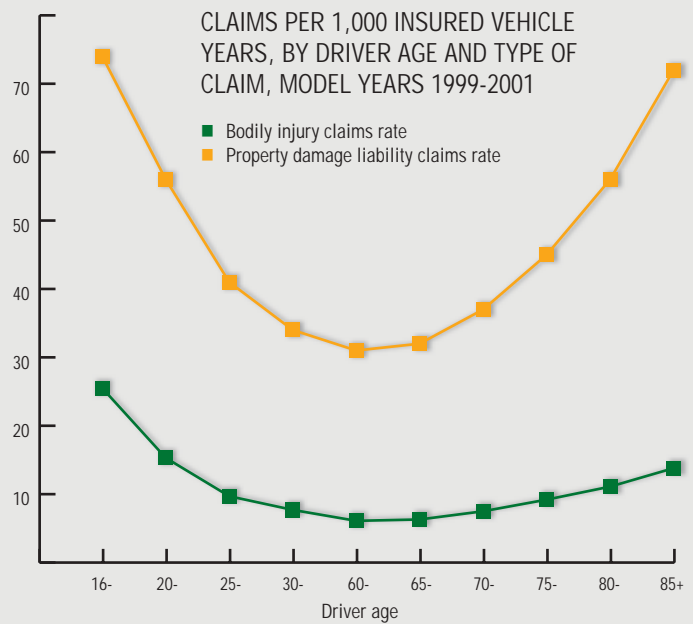
potential hazards associated with older drivers from a number of vantages," says Susan Ferguson, Institute senior vice president for research.

Death rates for drivers 70 and older and for their passengers, who also were likely to be older people, were higher than for 30-59-year-old drivers and their passengers. However, the older drivers weren't more likely to be





Death rates for drivers 70 and older and for their passengers are higher than for 30-59-year-old drivers. However, the risk of death isn't higher for occupants of the other vehicles involved in crashes with older drivers. Nor is the risk higher among pedestrians, motorcyclists, and bicyclists.



Insurance claims for injuries to others and damage to their property go up for older drivers, which indicates they more often are deemed to be at fault in their collisions. The property damage liability claim rate starts going up at age 70 and is highest among drivers 85 and older.

in collisions that were fatal to other vehicle occupants or to other people on the road. Nor were drivers 70 and older more likely than 30-59 year-olds to be in collisions resulting in nonfatal injuries to pedestrians, motorcyclists, and bicyclists.

This confirms the findings of earlier research that older drivers themselves suffer the most severe consequences of their crashes (see *Status Report*, Sept. 8, 2001; on the web at [www.highwaysafety.org](http://www.highwaysafety.org)). Still, some older drivers do pose an increased risk of nonfatal injury to other people on the road. The new Institute study indicates that drivers 75 and older are about 10 percent more likely than 30-59 year olds to be involved in two-vehicle collisions in which the occupants of the other vehicles suffer nonfatal injuries.

Analysis of insurance claims data reinforces this finding, indicating an increase in older driver liability for the injuries in their crashes (liability claims are paid when

an insured driver is deemed at fault in a collision). Among older people, the property damage liability claims rate starts climbing at age 70 and is highest among drivers who are 85 and older. The claims rate for drivers in this age group approaches the rate for teenagers.

Compared with drivers ages 30-59, those 75 and older show increasingly higher bodily injury liability claims rates. By age 85 and older, these rates are about 80 percent higher than for 30-59 year-olds. However, the bodily injury liability claims rate for the oldest drivers still isn't as high as it is for teenage drivers.

"These findings suggest that the oldest drivers are overinvolved in crashes, but they're less likely than teenage drivers to hurt other people. The beginning drivers still are the ones we have to worry about the most," Ferguson points out.

Elisa Braver, senior epidemiologist at the Institute, adds that "drivers younger than 30

are responsible for far more injuries and lives lost than senior drivers. When people do die in crashes in which older drivers are involved, it's usually the older people themselves and their passengers who suffer. Much of their increased risk comes from increased susceptibility to injury."

Continuing efforts to improve occupant protection "will benefit both older and younger drivers and passengers," Braver adds. "Research on developing valid and feasible driver screening tests should continue, too. This could help older drivers, their families, and physicians decide whether and when to modify driving habits."

For a copy of "Are older drivers at higher risk of involvement in collisions resulting in deaths or nonfatal injuries among their passengers and other road users?" by E.R. Braver and R.E. Trepel, write: Publications, Insurance Institute for Highway Safety, 1005 North Glebe Road, Arlington, VA 22201.

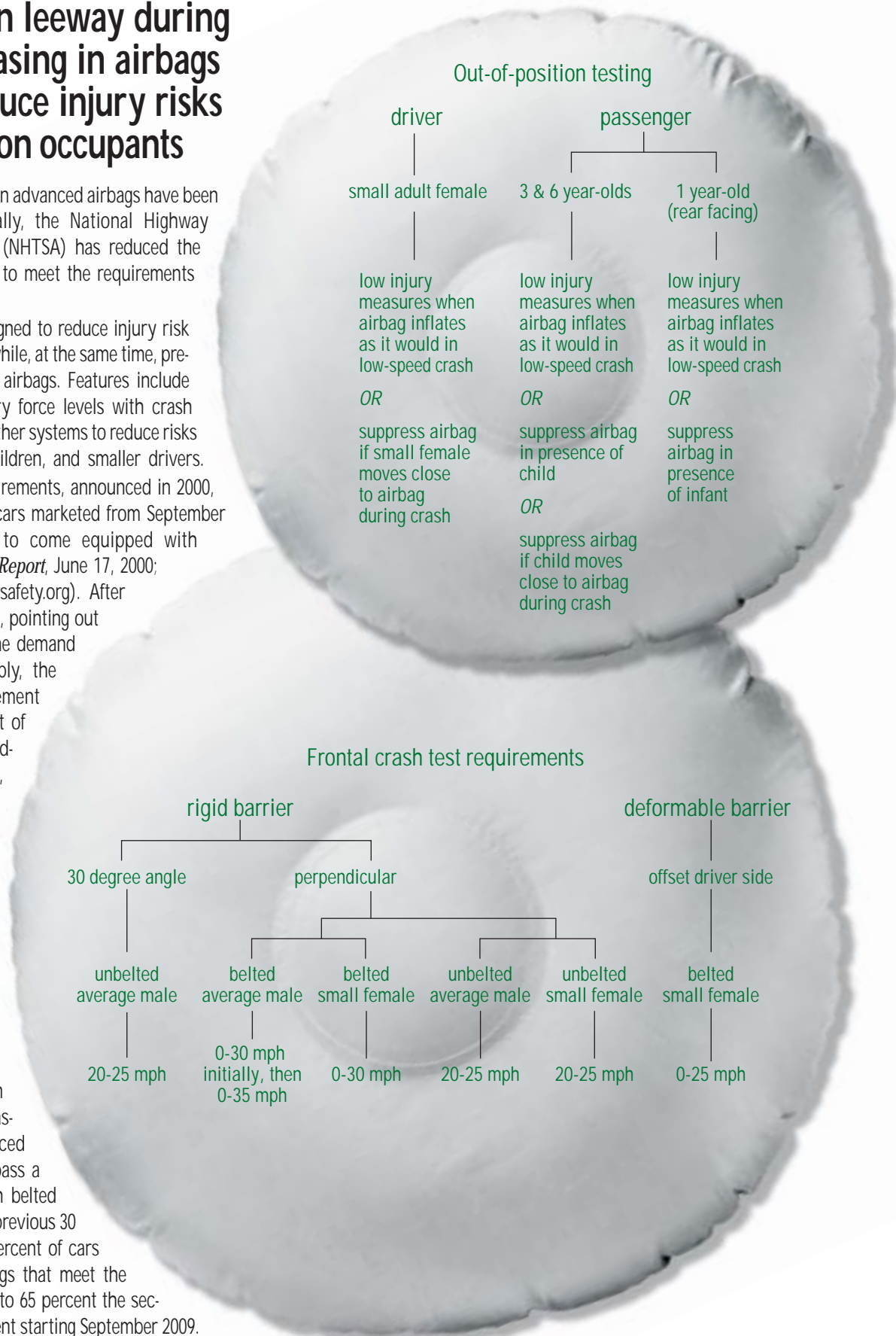
# Automakers win leeway during first year of phasing in airbags designed to reduce injury risks for out-of-position occupants

The requirements for phasing in advanced airbags have been relaxed somewhat. Specifically, the National Highway Traffic Safety Administration (NHTSA) has reduced the number of vehicles obligated to meet the requirements during the first year.

Advanced airbags are designed to reduce injury risk for out-of-position occupants while, at the same time, preserving the safety benefits of airbags. Features include two-stage inflators, which vary force levels with crash severity, plus suppression or other systems to reduce risks for out-of-position infants, children, and smaller drivers.

The original phase-in requirements, announced in 2000, called for 35 percent of new cars marketed from September 2003 through August 2004 to come equipped with advanced airbags (see *Status Report*, June 17, 2000; on the web at [www.highwaysafety.org](http://www.highwaysafety.org)). After automakers petitioned NHTSA, pointing out that suppliers cannot meet the demand for parts necessary to comply, the agency reduced the requirement from 35 percent to 20 percent of new cars. The rest of the scheduled phase in remains in place, with the percentage of cars increasing to 65 in September 2004 and then to 100 percent the following year.

During these phase-in years (September 2003 through 2005), automakers must certify that advanced airbag systems pass a battery of tests conducted with a variety of dummies. Additional requirements begin in September 2007, when increasing percentages of advanced airbags must be certified to pass a 35 mph rigid-barrier test with belted male dummies — up from the previous 30 mph test speed. Initially 35 percent of cars must be equipped with airbags that meet the more rigorous test. This rises to 65 percent the second year and then to 100 percent starting September 2009.



## 25 versus 30: Institute and others support government decision to go with 25 mph speed for airbag testing with unbelted dummies

During the last round of federal rulemaking on advanced airbags, one issue sparked intense controversy — the National Highway Traffic Safety Administration's (NHTSA) decision to go with a speed of 25 mph instead of 30 mph in rigid-barrier compliance testing with unbelted adult male dummies. Since the advanced airbag standard was issued in 2000, the debate hasn't quieted. It has simply moved to a federal court.

Together with The Trauma Foundation, Public Citizen and the Center for Auto Safety have asked a federal court to review NHTSA's test speed decision, claiming that conducting unbelted tests at the lower speed of 25 mph "could result in hundreds of additional fatalities from automotive collisions" because of inadequate airbag protection. Tests at 30 mph are warranted, these parties told the court in a brief filed last October, because so many deaths occur in crashes at this speed or more.

The crux of the issue is whether conducting the tests at 30 mph will increase occupant protection by ensuring that more people are protected by airbags in higher speed crashes, as Public Citizen argues, or whether 25 mph testing will produce airbags that are just as effective in real-world crashes but pose much less risk of inflation injury to out-of-position occupants.

A 25 mph test speed allows automakers to continue designing airbags with power levels that keep the risks low from inflating airbags. Serious injuries from inflating bags have plummeted since automakers began depowering airbags in the mid- to late-1990s (see *Status Report*, April 6, 2002; on the web at [www.highwaysafety.org](http://www.highwaysafety.org)).

**Federal response:** In response to Public Citizen, NHTSA told the court in a brief filed in January that "[s]peed is not the only component of occupant protection testing . . . . Petitioners miss the point by suggesting that the only difference between the [old airbag standard] and the new standard is

the Institute said in 2000 (see *Status Report*, April 17, 2000; on the web at [www.highwaysafety.org](http://www.highwaysafety.org)).

More recently the Institute weighed in again, telling the court it was misleading of Public Citizen to claim that more than half of all deaths occur in crashes at speeds fast-



Public Citizen claims that conducting unbelted barrier tests at 30 mph instead of 25 mph enhances occupant protection in real-world crashes. NHTSA, the Institute, and others disagree, saying a 25 mph test speed produces airbags that are just as effective in real-world crashes but pose much less risk of inflation injury to occupants who are out of position (very close to airbags when they first begin inflating).

the maximum speed of the unbelted barrier test. That was only one of many changes, and . . . the overall interests of safety favored the new unbelted test" at 25 mph.

**Institute's response:** From the start of the debate about testing at 25 versus 30 mph, the Institute and others have disagreed with Public Citizen. "We firmly believe NHTSA made the right decision,"

er than 30 mph. The implication is that 30 mph testing can assure occupant protection only in crashes up to about 30 mph and not in higher speed impacts.

This is incorrect, the Institute told the court. A 30 mph crash test into a rigid barrier is more severe than almost all 30 mph crashes that occur in the real world. The test produces occupant decelerations that

are much higher. This is because deceleration (a better indicator of injury risk than crash speed) is determined by both the change in speed that occurs during a crash and the time over which the change occurs. A 30 mph rigid-barrier test occurs over a much shorter duration than most real-world crashes at the same speed, so the occupant decelerations are much higher in the test. Thus, a 25 mph rigid-barrier test is more severe, as measured by occupant decelerations, than most real-world crashes.

Another factor ignored by Public Citizen is that conducting tests at higher speeds doesn't automatically result in better occupant protection in real-world crashes. "The higher the test speed, the greater is the force level that is needed to quickly inflate airbags .... [A]n airbag with the inflation forces needed to restrain an unbelted crash test dummy at a high speed is likely to injure a person who is very close to the bag when it first begins to inflate," the Institute told the court.

Concluding that "[t]he true consequences of a return to a 30 mph rigid-barrier test ... is a probable increase in airbag power, which would pose additional risks," the Institute asked the court to let NHTSA's decision stand.

**Auto manufacturers' responses:** The Alliance of Automobile Manufacturers and Automotive Occupant Restraints Council told the court that NHTSA isn't obligated to assume "a monocular focus on safety improvements for 50th percentile unbelted males," adding that the new airbag requirements "ensure an improvement in *overall* occupant safety," including protection for adult males.

Another industry trade group, the Association of International Automobile Manufacturers, addressed the same issue. Available information on crashes involving the depowered airbags allowed under the new testing rules shows "these airbags have been substantially less aggressive to occupants than previous airbags, yet provide the same or virtually the same level of protection to occupants of various sizes," this group said.

## Don't let California enact a clean air plan that would reduce protection in crashes, Institute tells court

California's zero-emissions requirements "could increase the risk of serious injury in motor vehicle crashes," the Institute has pointed out to a federal appeals court. If the requirements are met, "an inevitable consequence will be an increase in motor vehicle crash deaths and injuries. This is because most [low- and zero-emissions vehicles] are small, lightweight vehicles that cannot provide effective crash protection for their occupants."

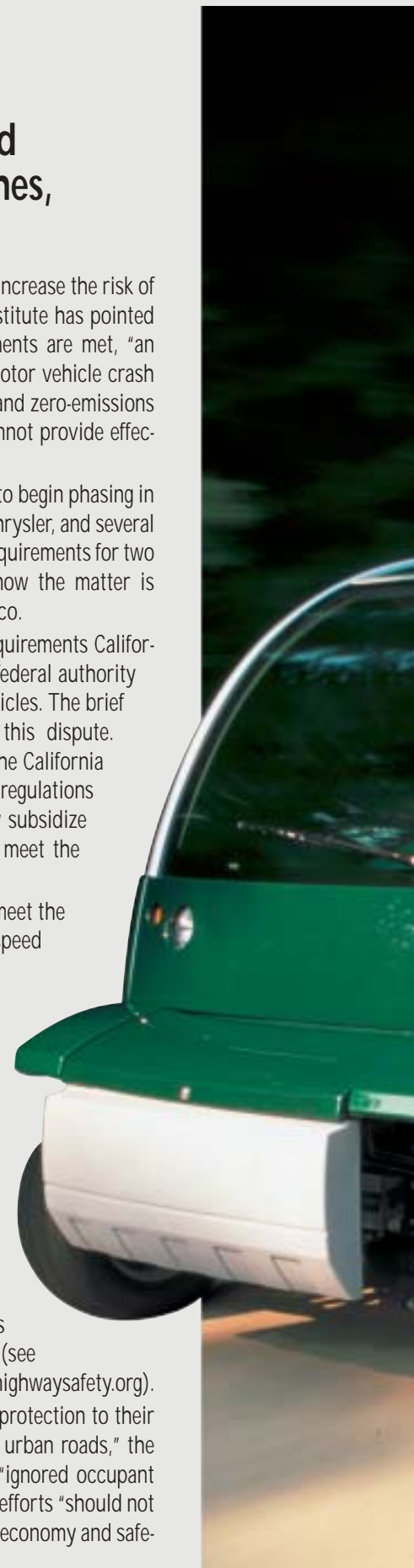
The emissions requirements were scheduled to begin phasing in this year. But last June General Motors, DaimlerChrysler, and several auto dealers won an injunction that delays the requirements for two years. The state of California appealed, and now the matter is before the federal appeals court in San Francisco.

The automakers argue that the emissions requirements California plans to impose would illegally impinge on federal authority to set fuel economy standards for passenger vehicles. The brief submitted by the Institute doesn't dwell on this dispute. Instead it focuses on the safety implications of the California program. Specifically, the Institute objects to regulations that, in effect, push manufacturers to somehow subsidize sales of small, lightweight vehicles in order to meet the state's zero-emissions requirements.

An especially dangerous option available to meet the requirements would be to increase sales of low-speed vehicles, which basically are modified golf carts. Such vehicles are subject to only limited federal safety requirements — basic equipment like a windshield, mirrors, headlights, signal lights, tail and brake lights, reflectors, safety belts, and a parking brake. Low-speed vehicles don't have to have doors or bumpers, and they're not required to meet any crashworthiness tests.

To make matters worse, California law allows motorists to drive low-speed vehicles on roads with speed limits up to 35 mph. The Institute has previously said such vehicles should be confined to controlled environments (see *Status Report*, April 6, 2002; on the web at [www.highwaysafety.org](http://www.highwaysafety.org)).

Low-speed vehicles "will offer essentially no protection to their occupants in many crashes that occur daily on urban roads," the Institute told the appeals court. State officials "ignored occupant safety" when setting the requirements. The state efforts "should not be allowed to thwart the goals of the federal fuel economy and safety programs," the Institute said.



## FHWA addresses crashes at rail crossings but misses the potential of cameras to reduce gate signal violations

Each year more than 3,000 crashes and 400 deaths occur at railroad crossings in the United States. To combat this, the Federal Highway Administration (FHWA) has released a report intended to guide traffic engineers in designing devices to control traffic where highways meet railroads. The agency stresses that the report isn't a set of standards. It's a process for designing the traffic control devices at railroad crossings, each of which is unique.

The crossings can be marked in a variety of ways including passive signs, flashing lights, and gates that acti-



vate when a train nears. FHWA details the process for selecting among the types of controls and for improving compliance with them. Crossings with automatic gates, commonly found at busy locations, account for about 30 percent of all crashes at railroad crossings. Among the more than 800 crashes that occurred at these crossings during 2001, about half were attributed to driver behavior such as deliberately going around the gates or failing to stop. FHWA details several ways to prevent drivers from using oncoming lanes to circumvent the gates — concrete dividers, curbed medians, and four-quadrant gates that lower across all lanes of traffic in both directions. Many of these engineering options are expensive.

"We do need to reduce gate signal violations. Unfortunately, FHWA doesn't mention automated enforcement, which would be an effective way to do it," says Institute senior traffic engineer Richard Retting. "Similar to red light cameras, these systems reduce both violations and crashes at grade crossings." A pilot study of cameras at two crossings in Los Angeles reduced violations 92 and 78 percent within a few months.



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