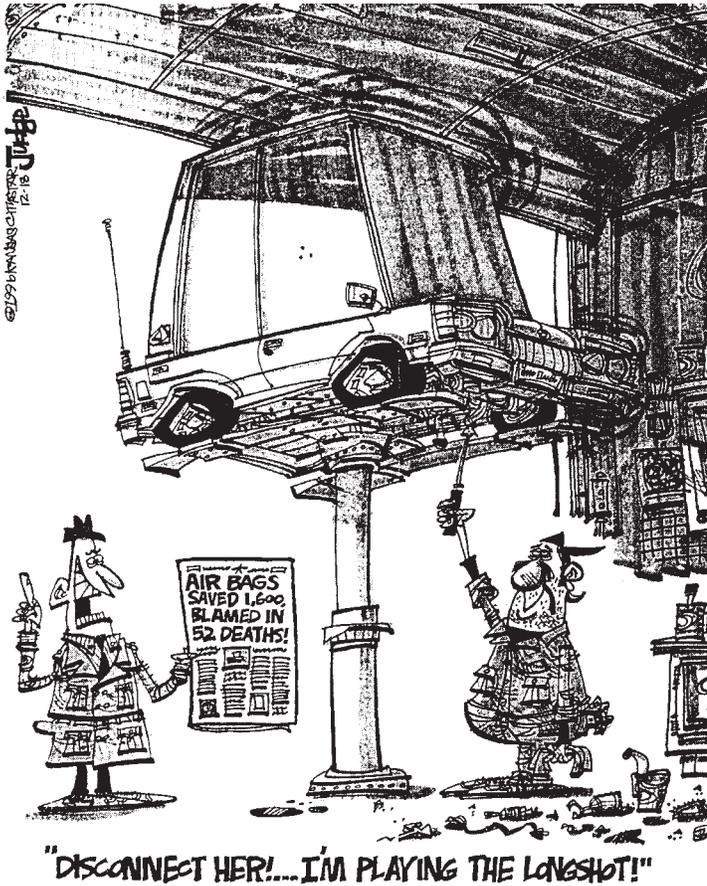


# STATUS INSURANCE INSTITUTE FOR HIGHWAY SAFETY REPORT

Vol. 32, No. 2

February 15, 1997



## This is what it's come to

Airbags have gone from being regarded as must-have safety devices to the punch line of editorial cartoons.

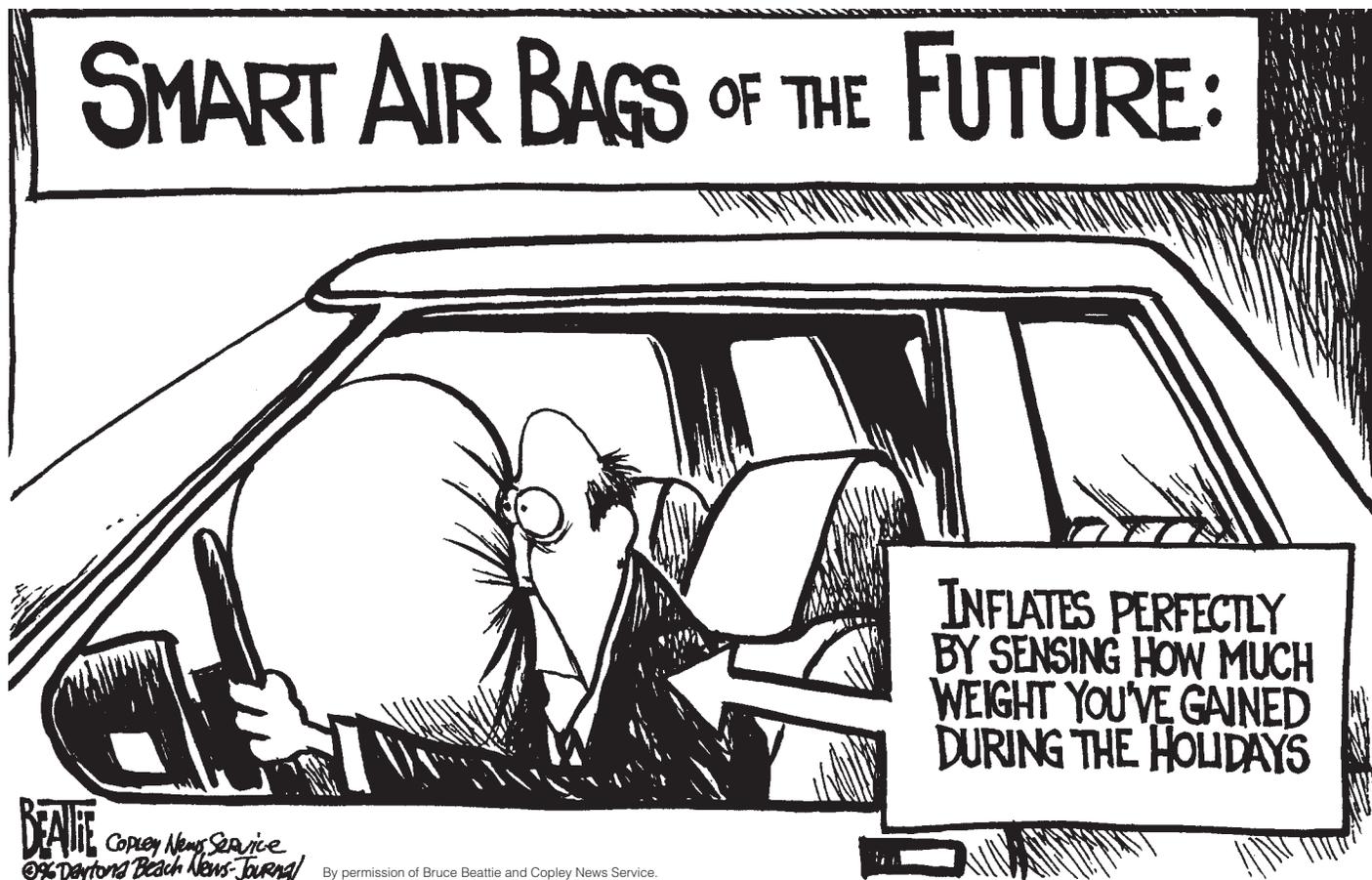
They've saved more than 1,700 lives, but media reports tell of people afraid to drive cars equipped with them.

"This is what it's come to," says Institute President Brian O'Neill. "Some people now are afraid of airbags. This has occurred

largely because of inaccurate and misleading media reports. The public needs to understand airbags are very effective in protecting people from serious injury and death in automobile crashes. Yes, airbags can cause serious injuries and deaths, but if you buckle up and put infants and children in the rear seat, this risk essentially is nonexistent. Too much of the media cover-

age of these problems has overlooked the simple ways to avoid these risks."

O'Neill adds, "Airbags are too important a safety device for their future to be threatened by misinformation or incomplete reporting of problems associated with them. Yet this is what has been happening. We must now work to restore the airbag's tarnished image."



To this end, the National Highway Traffic Safety Administration (NHTSA) has solicited comments on proposals that would allow automakers to improve airbag designs and very concerned motorists to get their airbags disconnected. Comments were due February 5 on these issues. (For an overview of NHTSA's proposals, see *Status Report*, Vol. 31, No. 10, Dec. 7, 1996).

**Depowered airbags:** NHTSA has proposed two possible changes to Federal Motor Vehicle Safety Standard 208 — raising the maximum permissible chest deceleration limit in the unbelted crash test to 80 gs from 60 gs, or adopting an unbelted sled test in lieu of the current unbelted barrier crash tests. In either case, cars still would have to meet current occupant protection requirements in belted flat-barrier and angle-barrier tests. The agency's goal is to allow manufacturers to depower airbags an average 20 to 35 percent and have them in all new vehicles in a year.

Automakers and others unanimously agree driver and passenger airbags must

be depowered, and the quickest and best way to achieve this would be by adopting the 30 mph unbelted dummy sled test proposed last summer by the American Automobile Manufacturers Association (AAMA) in lieu of the 30 mph barrier crash test. No automaker favors NHTSA's chest g proposal, although the Institute supports its adoption as an additional alternative to current test requirements.

AAMA estimates depowering will save even more lives, including children; small, out-of-position, unbelted adult drivers; and adult passengers. NHTSA, however, is concerned that making airbags deploy with less force may increase the deaths of unbelted occupants in higher speed crashes.

Automakers and the Institute dispute NHTSA's preliminary analysis of the safety tradeoffs associated with depowering. AAMA argues depowering "might produce, at most, an increase in fatalities of between 7 and 47 unbelted occupants" per year. The Institute doesn't believe there are negative tradeoffs but instead expects depow-

ered airbag inflators will improve protection for unbelted occupants in a wide range of crash severities, not just in low speed crashes.

NHTSA's analysis of depowered airbags "greatly exaggerates the potential negative effects on adult fatalities," says Institute Senior Vice President Adrian Lund. "NHTSA doesn't include lives saved as a result of airbags that would be optimized for belted occupants. Plus, the agency's analysis ignores the many unbelted occupants who in more severe crashes are out-of-position and would benefit from, rather than be harmed by, depowered airbags."

**Sunset provision:** In part because NHTSA is concerned about safety tradeoffs for unbelted adults, it sees depowering as an interim measure until smart airbags are in vehicles. The agency plans to issue a rulemaking proposal to set a phase-in schedule for smart airbags.

The Institute, AAMA, the Association of International Automakers (AIAM), and others urge the agency not to include a "sun-

set” provision in a final rule on depowering that would set a time limit on the sled test. “The performance requirements for so-called ‘smart’ airbags aren’t even close to being defined, let alone the test requirements needed to promote ‘smart’ designs,” O’Neill says. Both the Institute and Advocates for Highway and Auto Safety point to the need for NHTSA to completely revise the performance test requirements of Federal Motor Vehicle Safety Standard 208 to promote future restraint systems that provide optimum performance in a wide range of crash severities.

Depowered airbags could be in all vehicles within two years, with some vehicles having them six to nine months after a final rule, manufacturers say. Toyota urges NHTSA to act by the end of February if depowered airbags are to be in some 1998 model vehicles and all 1999 vehicles.

**Deactivation:** Instead of granting written permission on a case-by-case basis as it does now, NHTSA wants to permit vehicle owners to have their airbags deactivated without demonstrating any special need. Auto dealerships and garages could perform the service after providing vehicle owners with information about benefits and the rare circumstances in which deactivation is appropriate. The owners would have to sign a form stating they had received the information.

Deactivation of airbags would be allowed for existing vehicles but not if they were equipped with an airbag cutoff switch or met the criteria to be established by the agency for smart airbags.

Although depowering airbags has unanimous support, deactivation doesn’t. Domestic and foreign automakers strongly oppose vehicle owners being allowed to have airbags deactivated at will.

Trade groups AAMA and AIAM question whether NHTSA has the legal authority to issue such a rule. These groups favor NHTSA’s current practice of granting deactivations only for people with special needs on a case-by-case basis. If NHTSA decides to okay on-demand airbag deactivations, it should maintain (cont’d on p.7)

Institute survey finds

## Consumers still want airbags in their cars

Many vehicle owners are aware of airbag-related problems, but a large majority believe airbags are effective and wouldn’t want to have them disconnected, a new Institute survey indicates.

To gauge awareness of airbag safety issues and attitudes about airbags, the Institute surveyed by telephone 903 drivers of vehicles with either dual airbags or a driver-only airbag. Responses were gathered January 15-18, 1997 in three states — Michigan, North Carolina, and Texas — from a random sample of owners of 1994-97 model airbag-equipped vehicles. The sample was derived from state vehicle registration data maintained by R.L. Polk.

Eighty-five percent of all respondents said they believe airbags are either very effective (42 percent) or somewhat effective (43 percent) in protecting people from serious injury in frontal crashes. And about 76 percent would want at least a driver airbag in their next vehicle.

When asked about problems they may have heard about airbags, 50 percent of respondents identified at least one. Most often cited were danger to children (35 percent) and danger to shorter/smaller occupants (14 percent). Problems with rear-facing infant restraints were cited by 11 percent of respondents.

When asked about driver airbags, a majority of respondents (68 percent) indicated their opinion hadn’t changed in the last six months, but shorter drivers were much more likely than taller drivers to have less favorable opinions.

Of the 292 respondents surveyed who were 5 feet 4 inches or shorter, 30 percent said their opinion of driver airbags had become less favorable, compared with 18 percent of taller drivers. Negative news reports about airbags were mentioned by 82 percent of respondents when asked why their opinion had become less favorable.

Forty percent of the 572 drivers of vehicles with passenger airbags indicated they had a less favorable opinion of passenger airbags than six months ago.

Seventy-three percent said they wouldn’t want either airbag disconnected. But 19 percent said they would have their passenger airbag disconnected, and 13 percent said they would have their driver airbag disconnected if permitted.

There was more interest in airbag cutoff switches. If these were available, 67 percent of drivers of dual airbag-equipped vehicles said they would want a passenger airbag cutoff switch. Thirty percent of respondents said they would like to have a driver airbag cutoff switch.



By permission of John Trever and the Albuquerque Journal.



# FARS undercounts fatal large truck-car underride crashes

When a large truck and passenger vehicle collide, it's nearly always the people in the car who die, especially if the smaller vehicle slides beneath the truck in what's termed an underride crash.

Comprehensive new Institute research shows underride crashes are much more common than federal statistics indicate.

Any crash between a passenger vehicle and a large truck is a high risk event, particularly for people in passenger vehicles. Ninety-four percent of people who die in large truck-passenger vehicle crashes are passenger vehicle occupants. Underride increases the probability that death or in-

jury will occur. In towaway crashes involving underride, 3.8 percent result in death compared with 3.0 percent of crashes that don't involve underride.

Passenger vehicles can underride the rears, fronts, or sides of large trucks. Even at low speeds, underride can result in major deformation and intrusion into the upper part of the passenger vehicle occupant compartment. This intrusion can result in severe or fatal injuries, including decapitation, to vehicle occupants.

The Institute study was conducted to accurately estimate the incidence of front, side, and rear underrides of large trucks,

including single-unit trucks, involved in collisions with passenger vehicles.

Researchers compared two federal databases of information about U.S. crashes during 1988-93. The Fatal Accident Reporting System (FARS) is the standard source of incidence counts for fatal large truck crashes. It includes data from police reports as well as from vehicle registration and driver records. This is the database the National Highway Traffic Safety Administration (NHTSA) used when considering tougher rules for rear underride guards for tractor-trailers (see *Status Report*, Vol. 31, No. 2, March 2, 1996).



The National Accident Sampling System Crashworthiness Data System (NASS/CDS) is a sample of police-reported crashes involving a passenger vehicle towed from the scene due to crash damage. It includes data from police reports, crash investigations, measurements and photographs of vehicles, medical records, vehicle records, and survivor interviews. This is the database the Institute has used to estimate the incidence of underride crashes.

**NASS codes more underrides:** There were on average 3,033 large-truck-and-car-involved crashes per year in 1988-93 in which passenger vehicle occupants died.

During the same period, FARS coded an average of 136 fatal crashes per year as underrides, but NASS/CDS coded an average of 611 crashes per year as underrides.

Of the 275 fatal truck-car crashes included in both databases during 1988-93, NASS/CDS coded 27 percent and FARS coded 7 percent as underrides. Of the 75 crashes coded as underrides in NASS/CDS, only 18 were identified as such in FARS.

The discrepancy between the two databases becomes more pronounced when underrides involving sides of passenger vehicles or trucks are considered. This is because NASS/CDS didn't code underrides involving side impacts, and FARS did. When the Institute added side underrides, the total percentage of underrides in NASS/CDS rose to 50 percent of fatal truck-car crashes from 27 percent.

**Why counts differ:** "NASS/CDS provides much more thorough information about truck crashes than FARS," says Elisa R. Braver of the Institute. "A review of 46 police reports revealed two major sources of undercounts in FARS. First, the police reports for about half of the underride crashes didn't contain enough information for FARS analysts to recognize underride had occurred. Second, underrides weren't necessarily coded even when information in the police report indicated underrides."

Braver notes NHTSA did improve its method for coding fatal underrides in 1994 by making underride a separate variable and by training its analysts how to code it. "This change means more fatal truck-car crashes are being coded as underrides, but these crashes still are being substantially undercounted," Braver says. "Police reports still don't contain enough information in many cases to code underride. FARS analysts routinely should ask the investigating police officers if passenger vehicles involved in large truck crashes went underneath the trucks."

Data collection in NASS/CDS needs improving, too, Braver says. Although NASS now includes underrides involving the sides of large trucks, it still doesn't count underrides involving the sides of cars.

**Single-unit trucks:** Another important study finding is that single-unit trucks are involved in a high number of underride crashes. Tractor-trailers had the highest number of fatal underride crashes per year at 770, but fatal underrides of single-unit trucks also were common at 261 per year, including 69 rear truck impacts.

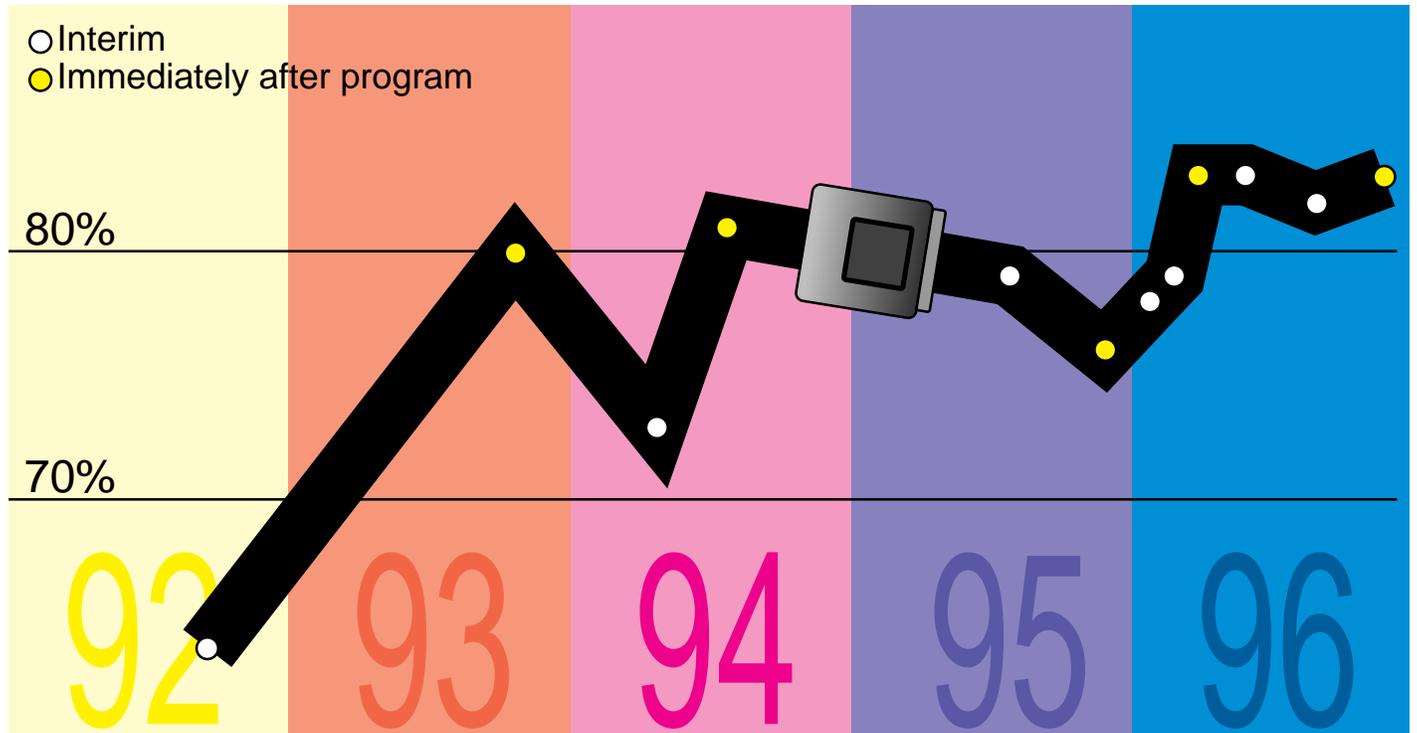
New truck trailers beginning in 1998 must have better rear underride guards to keep smaller vehicles from sliding beneath the trailer. These rules don't apply to single-unit trucks or to trucks and trailers already on the road.

Most fatal underride crashes involve the fronts of large trucks. No truck is required to have underride guards to prevent vehicles from sliding beneath the truck's front or side. The United Nations Economic Commission for Europe recommends front underride protection on large trucks, and the European Union is considering a rule mandating such devices.

**Underride crashes in Indiana:** The Institute conducted a second study to further explore FARS underride coding. Researchers reviewed police reports for all fatal crashes between large trucks and passenger vehicles in Indiana during 1993. Crash photographs were reviewed, too, because they often include details missing from police reports.

The study found a much higher proportion of fatal crashes involving underride than recorded in FARS. Sixty-three percent of 107 crashes studied involved underrides. FARS coded only 6 percent. Photographic evidence showed 47 percent of the crashes were severe or catastrophic underrides, but FARS coded underride for just 8 percent of crashes involving severe or catastrophic underride.

For copies of "Incidence of Large Truck-Passenger Vehicle Underride Crashes in the Fatal Accident Reporting System and the National Accident Sampling System" and "A Photograph-Based Study of the Incidence of Fatal Truck Underride Crashes in Indiana" by Elisa R. Braver et al., write: Publications, 1005 N. Glebe Rd., Suite 800, Arlington, VA 22201.



Percent driver safety belt use in North Carolina, "Click It or Ticket" program, 1992-96

## North Carolina seeks to better impressive belt record

At 83 percent, safety belt use in North Carolina is well above the U.S. average. "Click It or Ticket," the state's safety belt publicity and enforcement program begun four years ago, has succeeded in making North Carolina one of the highest belt use states in the country.



"Click It or Ticket" is part of the Governor's Highway Safety Initiative, a program launched in September 1993 by Governor Jim Hunt and his highway safety office. The program addresses both safety belt use and alcohol-impaired driving. Other participants include North Carolina Insurance Commissioner Jim Long, the National Highway Traffic Safety Administration, the University of North Carolina's Highway Safety Research Center, and the insurance community (see *Status Report*, Vol. 28, No. 14, Dec. 20, 1993).

There have been 17,529 safety belt and sobriety checkpoints statewide since the program began. Police have handed out 129,744 tickets for not buckling up and 11,371 tickets for child seat violations. The checkpoints and roving patrol activities also have uncovered more than 460,000 additional violations, ranging from speeding and driving with a revoked license to the apprehension of fugitives.

Despite this massive effort, about one in five still don't buckle up. This group has a higher crash risk than belt users, so it's important to increase their use rates. Institute research on nonusers, including those who have been fined, indicates they'd be more likely to buckle up if the penalty were driver license points.

"Strengthening the seat belt law ... is a top priority," says Joe Parker, head of the Governor's Highway Safety Program. A Governor Hunt-supported proposal before the North Carolina legislature would assess 2 points to driving records for convictions under the safety belt law and increase the

penalty to \$50 from \$25. The measure has the support of 70 percent of state residents, an Institute survey indicates.

North Carolina's child restraint law would be strengthened, too. License points would be assessed against drivers who fail to ensure that children younger than 16 are properly restrained or belted.

Penalties in the United States for belt law violations currently include fines that range from \$0 to \$95 and are generally \$10 to \$25. Only Arkansas assesses license points for belt law violations, but a proposal in the District of Columbia to assess two points is slated to take effect in March.

In addition to its legislative proposals, North Carolina is proceeding with plans for more enforcement and educational efforts in 1997, including two "Click It or Ticket" campaigns, public safety forums, child safety seat clinics, and law enforcement training among other activities. The goal is to push the state's belt use rate into the 85-90 percent range and ensure that all children are properly restrained.

## Driver license points would get nonusers to use their safety belts

Driver license points would prompt people who don't use safety belts to buckle up, an Institute survey of North Carolina belt law violators found.

With a belt use rate of 83 percent, North Carolina has one of the highest use rates in the nation. Despite intensive enforcement, some motorists persistently refuse to use belts. The Institute surveyed 1,059 people cited for violating the state's primary belt law to find out what would get them to use belts. Sixty-five percent had received one belt citation and 35 percent had received two or more.

In both violator groups about 85 percent thought belts were effective in preventing injury. Only 40 percent of those with multiple citations favored the belt law, compared with 56 percent of those cited once.

Receiving a belt law citation encouraged some nonusers to use belts. When asked if they use a belt more now than before their tickets, 69 percent of those with one citation and 60 percent with multiple citations said yes.

But the citations alone weren't viewed as enough incentive to use belts. If driver license points were the penalty, 75 percent of those with one citation and 72 percent with multiple citations said they'd be much more likely to always use belts.

When researchers compared the belt law violators' driver records with those of a random sample of 10,000 North Carolina drivers, they found both violator groups were more likely than the random sample of drivers to have traffic convictions — particularly speeding — as well as crashes on their driving records.

Research shows people least likely to use belts are those who most need belt protection because they typically have higher crash rates. Nonusers are more likely than belt users to be young males with an arrest record and fewer years of formal education.

(cont'd from p.3) all records on deactivations and reactivations, automakers say.

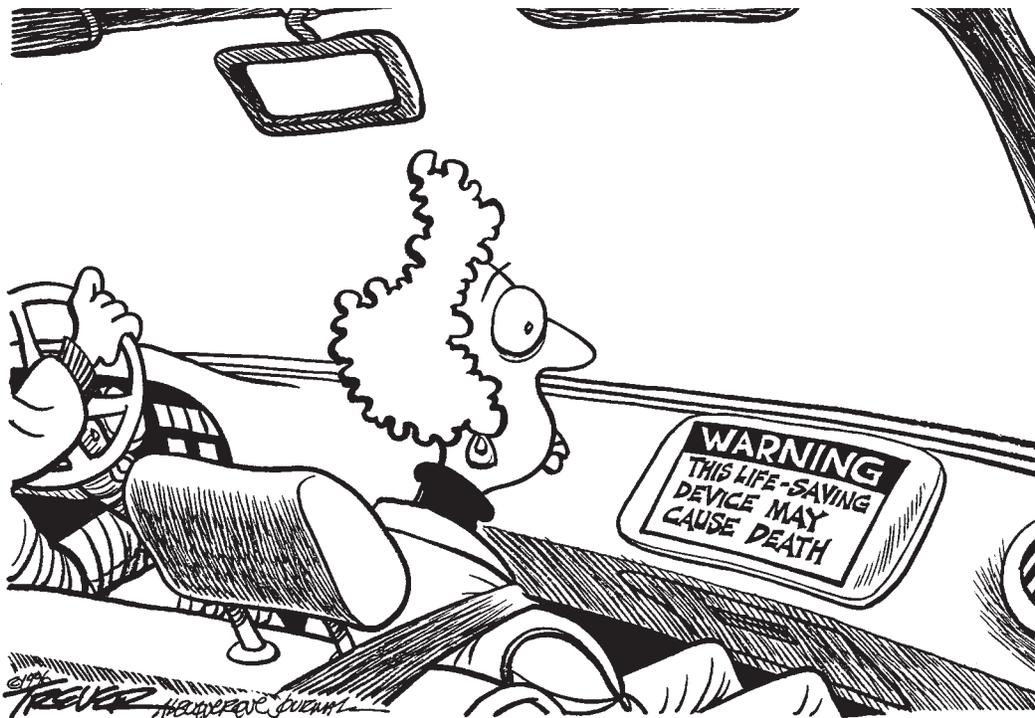
General Motors is among those against the deactivation proposal. "The predictable result of such an approach may be widespread deactivation of airbags in circumstances that create increased risks to safety," the automaker says.

Although Volvo said in September it approved of permissive airbag deactivation, it now says it doesn't "believe that disconnection on demand is a good policy." NHTSA should continue to grant

the Institute reluctantly supports NHTSA's proposal to permit deactivation if an owner requests it. Even though situations are rare when deactivation would make sense, NHTSA probably has no choice but to provide a procedure to allow this option."

O'Neill warns the disconnect option should be made available "only after vehicle owners have been given easily understood information about airbag benefits and risks."

**Cutoff switches:** Chrysler, Ford, General Motors, Toyota, and Volvo support op-



By permission of John Trever and the Albuquerque Journal.

waivers to disconnect airbags under special conditions, Volvo says. BMW agrees. The automaker said last fall NHTSA should let vehicle owners who want to have their airbags disconnected do so but now says the agency should allow deactivations only for owners with special needs.

The Institute "shares concerns that people misinformed about airbag benefits and risks will rush to have their vehicle's airbags deactivated without any real need for it," O'Neill says. "But if NHTSA doesn't allow deactivation, it risks increased public pressure to have the federal rule requiring airbags repealed. Because of this,

ditional retrofit cutoff switches as an alternative to airbag disconnection. The Institute also supports cutoff switches but with some reservations.

"It's likely many more people would want switches than actually would choose to get their airbags disconnected, particularly those with children," O'Neill explains.

"Switches would mean more people would transport children in the front seat, instead of the back where it's safer for them to ride. And switches can be misused. Inevitably, some parents will forget to turn off the airbag when they have an infant in the front seat."

# STATUS INSURANCE INSTITUTE FOR HIGHWAY SAFETY REPORT

1005 North Glebe Rd., Arlington, VA 22201 (703) 247-1500 FAX (703) 247-1678 <http://www.hwysafety.org>

NON-PROFIT ORG.  
U.S. POSTAGE  
PAID  
PERMIT NO. 252  
ARLINGTON, VA

Vol. 32, No. 2, February 15, 1997

**Airbag depowering, deactivation** are addressed in comments . . . . .p.1

**Consumers still want airbags** in their cars, Institute survey finds . . . . .p.3

**Large truck-car underride** crashes undercounted in FARS . . . . .p.4

**North Carolina** seeks to raise safety belt use even higher . . . . .p.6

**Driver license points** would get nonusers to use belts . . . . .p.7

Editor: Kim Stewart  
Writer: Mike Davis  
Art Director: Joyce Thompson  
Publications Vice Pres.: Anne Fleming

Contents may be republished with attribution.

 Recycled paper

ISSN 0018-988X

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 highways. The Institute is wholly supported by automobile insurers:

- |   |   |                                       |
|---|---|---------------------------------------|
| Alfa Insurance                          | Foundation Reserve                      | Nationwide Insurance Enterprise       |
| Allstate Insurance Group                | The GEICO Group                         | North Carolina Farm Bureau            |
| American Family Insurance               | General Accident Insurance              | Northland Insurance Companies         |
| American National Property and Casualty | General Casualty Insurance Companies    | Oklahoma Farm Bureau                  |
| American States Insurance Companies     | Grange Insurance                        | Old Guard Insurance                   |
| Automobile Club of Michigan Group       | Guaranty National Corporation           | Omni Insurance Group                  |
| Auto Club South Insurance Company       | The Hanover Insurance Company           | Pekin Insurance                       |
| Brethren Mutual Insurance Company       | Harleysville Insurance Companies        | PEMCO Insurance Companies             |
| Brotherhood Mutual                      | Heritage Mutual Group                   | The Progressive Corporation           |
| California Insurance Group              | The Hartford                            | The Prudential                        |
| Cameron Companies                       | Kansas Farm Bureau                      | Ranger Insurance                      |
| Chubb Insurance Companies               | Kemper Insurance Companies              | Royal Insurance                       |
| Church Mutual                           | Liberty Mutual Insurance Group          | SAFECO Insurance Companies            |
| CNA Insurance Companies                 | Maryland Insurance Group                | SECURA                                |
| Colonial Penn                           | Merastar                                | Selective Insurance                   |
| Concord Insurance Companies             | Mercury General Group                   | Shelter Insurance Companies           |
| Cotton States                           | Metropolitan                            | Southern Heritage                     |
| Country Companies                       | Michigan Educational Employees          | State Auto Insurance Companies        |
| CUNA Mutual                             | Middlesex Mutual                        | State Farm Insurance Companies        |
| Erie Insurance Group                    | Milwaukee Insurance Group               | The St. Paul Companies                |
| Farm Bureau of Idaho                    | Montgomery Mutual                       | USAA                                  |
| Farm Bureau of Iowa                     | Motor Club of America Insurance Company | US Fidelity & Guaranty                |
| Farmers Insurance Group of Companies    | Motorists Insurance Companies           | USF Insurance Company                 |
| Farmers Mutual of Nebraska              | Motors Insurance                        | Viking Insurance Company of Wisconsin |
| Fidelity & Deposit                      | Mutual Service Insurance                | Wisconsin Mutual                      |
| Frankenmuth                             | National Grange Mutual                  | Yasuda Fire and Marine of America     |