

**Statement before the Committee
on Energy and Commerce,
Subcommittee on Commerce,
Trade, and Consumer Protection**

U.S. House of Representatives

**Approaches to achieving vehicle
safety improvements**

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The Insurance Institute for Highway Safety is a nonprofit research and communications organization that identifies ways to reduce motor vehicle crash deaths, injuries, and property damage. I am the Institute's president, and I am here to discuss various approaches to improving vehicle safety.

For a long time the belief was widespread that vehicle safety could not be sold. The only way to promote safety improvements was federal regulation. This view no longer prevails. Crash test programs conducted by the National Highway Traffic Safety Administration (NHTSA) and Insurance Institute for Highway Safety supply consumers with abundant information to help them factor safety into their vehicle purchase decisions. Manufacturers advertise safety because it is such an important factor in the marketplace. The manufacturers and their suppliers are not only responding to various consumer crash test programs but also developing new technologies to secure a competitive edge. These innovations are outpacing the deliberative federal rulemaking process.

Many of the new technologies are intended to prevent crashes. These pose a challenge for NHTSA and the larger safety community to develop better data and new methods to assess the potential benefits so the most effective technologies can be promoted.

History of vehicle safety improvements

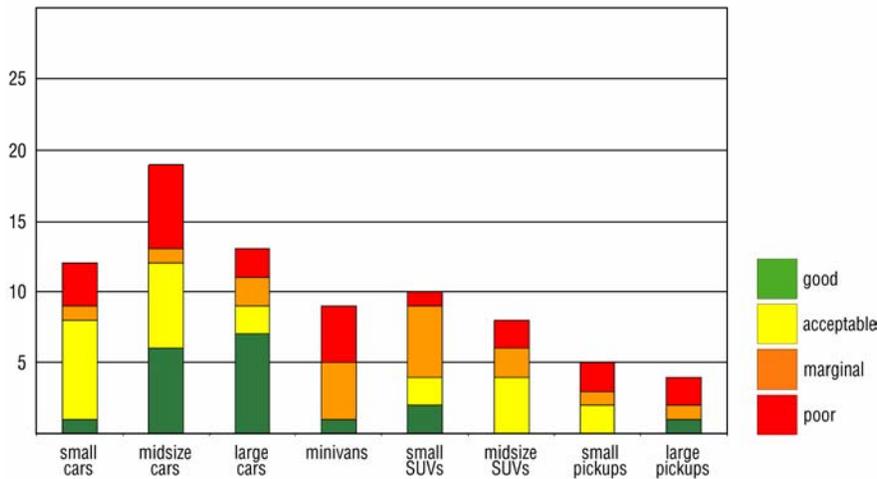
There have been three periods of improvement. From the beginning of motorization into the 1960s, the improvements were voluntary and limited. Manufacturers improved crash avoidance features including brakes, lights, etc., but crash protection features rarely were considered.

The second phase of safety improvement began in the 1960s, as government regulations began requiring manufacturers to meet a comprehensive set of performance standards. Many of these standards addressed crash protection. Auto manufacturers did not welcome this regulation, but they accepted it as the only way many safety features would be adopted. The manufacturers believed safety could not be sold, and safety advocates were convinced that federal regulation was the only way to force automakers to develop new crash protection technologies such as airbags.

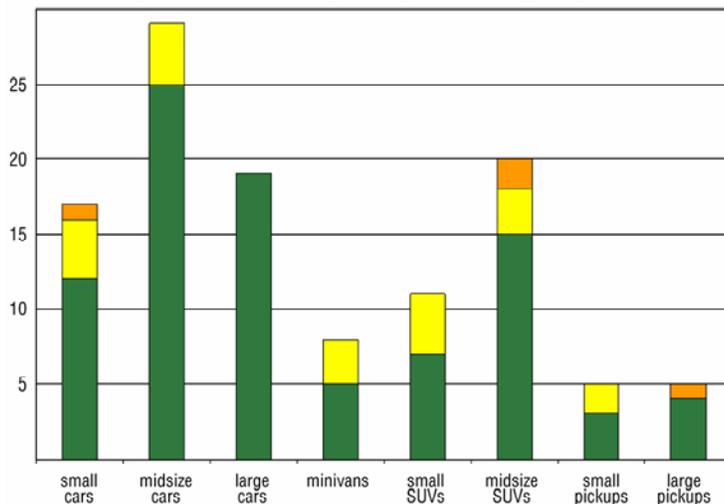
The third phase of safety improvement began with NHTSA's initiation of the New Car Assessment Program (NCAP), under which vehicle crash tests are conducted with instrumented dummies to provide consumers with comparative safety information by make and model. Not long after this program was launched in the late 1970s and early 1980s, some automakers began advertising airbags and, later, their vehicles' NCAP crash test results. This marked an end to what had been the almost universal view that safety could not be sold.

Today an abundance of information helps consumers factor safety into their vehicle purchase decisions. NHTSA's NCAP rates front and side crash protection and rollover propensity. We at the Insurance Institute for Highway Safety rate vehicles' front, side, and rear crash protection. Manufacturers recognize the power of this consumer information, and they have responded by dramatically improving the safety performance of their vehicles. Examples are the improvements in frontal crash protection, especially the designs of vehicle safety cages and front-end crumple zones, that have been made in response to the Institute's program of offset crash tests. When the various vehicle groups first were tested, relatively few models earned good ratings. Many were marginal or poor. In contrast, virtually all passenger vehicles now earn good ratings in frontal offset crash tests. A few are acceptable, and a handful of older designs still are rated marginal. None is poor.

FRONTAL CRASHWORTHINESS RATINGS
When first tested, by vehicle group



Currently available designs, by vehicle group





1995 Saab 900: poor structure



1999 Saab 9-3: improved structure



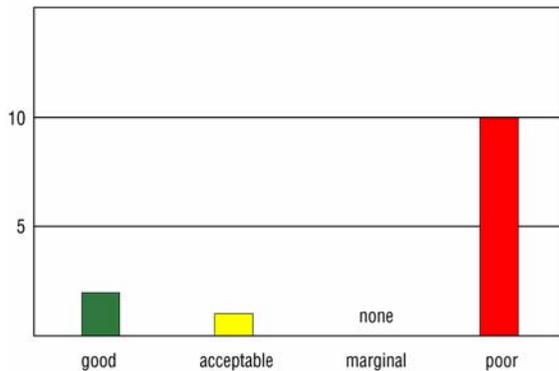
2003 Saab 9-3: excellent structure

Tests of three Saab models illustrate this progress. The 1995 Saab 900's front-end structural design was very poor. It allowed major collapse of the occupant compartment in the offset test. The structure of the 1999 Saab 9-3 was somewhat improved, mainly in the foot region. There was less structural collapse. The 2003 9-3 was improved even more, so that this model now has excellent structural design.

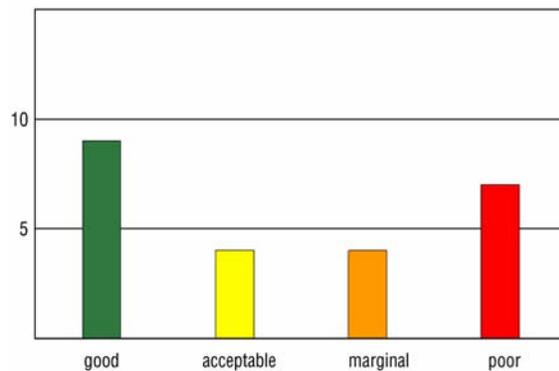
Similar improvements are being made in response to the Institute's more recently initiated side impact crashworthiness program. In April 2004 we released the first side impact ratings for 13 midsize cars. Among these only 2 earned good ratings, 1 was acceptable, and the other 10 were rated poor. Following a second round of tests of midsize cars earlier this year, there now are 9 rated good, 4 acceptable, 4 marginal, and 7 poor.

SIDE CRASHWORTHINESS RATINGS

First results, April 2004



Latest results, June 2005



Auto manufacturers are responding to these crashworthiness evaluation programs because they recognize the power of the safety marketplace. There is no debate about whether safety sells cars — it does — and the manufacturers and their suppliers are voluntarily developing and installing new safety technologies. An example is side airbags that protect occupants' heads. This technology, which reduces driver fatality risk in side impacts by about 45 percent, was developed without regulation or even the threat of it.

Side impact airbags initially were introduced in more expensive passenger vehicle models. Now they are well on the way to becoming standard equipment, in part because of the Institute's crash-worthiness evaluations and in part because automakers are addressing the issue of the harm that SUVs and pickups inflict on car occupants, especially in side crashes.

As powerful as the safety marketplace is, it cannot fully address issues such as the harm that light trucks pose to car occupants. In February 2003 NHTSA Administrator Jeffrey Runge challenged automakers to address this issue. The response is an effort, led by the Institute and Alliance of Automobile Manufacturers, to develop voluntary standards to reduce the risks. To begin the process, experts from around the world presented the latest research on crash compatibility at a technical meeting convened in Washington, D.C. Then two groups of engineers and other technical experts from car companies and safety organizations began meeting weekly, one group addressing incompatibility in front-to-side impacts and the other addressing front-to-front crashes. Within months the working groups completed the first phase of their work, and all of the major automakers agreed to adopt the performance and design requirements developed by the two groups.

The requirements addressing front-to-side crashes will improve occupant head protection in such collisions. In effect, auto manufacturers have agreed that by September 2009 they will equip all of their new vehicles with side impact airbags that protect occupants' heads. To address incompatibility in front-to-front crashes, automakers agreed that by September 2009 all of their new pickups and SUVs will have front-end energy-absorbing structures that overlap the federally mandated bumper zone for cars. This is a necessary first step toward reducing the chances of override and underride, thus enhancing the ability of the front ends of both vehicles to absorb crash energy and keep damage away from the occupant compartments. In effect, this particular agreement sets geometric design restrictions for the front ends of SUVs and pickups — something that would be harder and more complicated to achieve through the NHTSA rulemaking process because federal motor vehicle safety standards must specify performance, not design, requirements.

This is not the end of the collaborative effort. In fact, it is more like the beginning. The current research phase is expected to lead to additional performance requirements addressing front-to-front crash compatibility. A series of barrier and vehicle-to-vehicle crash tests will be conducted to develop procedures to measure the distribution of crash forces across the front ends of vehicles. This should lead, in turn, to requirements that will match front-end forces in head-on crashes between cars and light trucks. Similarly, research planned for side impacts is expected to lead to

performance criteria for body regions in addition to the head as well as evaluations of advanced dummies for use in side impact testing.

It should not be assumed that achieving these kinds of voluntary standards is an easy process. Virtually every major automaker participated in the compatibility meetings, and there were frequent disagreements. Exchanges sometimes became contentious as we negotiated our way through the collaborative process. To achieve consensus we met frequently, conducted teleconferences, debated myriad options, and revisited thorny issues again and again.

We at the Institute signed on to this process knowing our credibility would be at stake if the outcomes of the collaboration turned out to be standards reflecting the lowest common denominators. So we were committed to making sure the process led to important safety improvements. I believe such improvements will happen, especially as the research phases of this initiative progress and we develop new knowledge about countermeasures to reduce crash incompatibilities.

Establishing rulemaking priorities

Although today we can address some vehicle safety issues on a voluntary basis, there continues to be an important place for federal rulemaking to establish *minimum* safety levels for all new vehicles. A question is, who should establish NHTSA's rulemaking priorities? Should it be Congress, or should the agency set its own priorities? Ideally NHTSA should have both the commitment and the technical expertise to set priorities and complete the rulemaking process by issuing standards. But history is mixed in this regard. Few NHTSA administrators have been knowledgeable about highway safety when they were appointed, so lags to accommodate learning frequently have slowed the agency's progress. Plus the political leadership sometimes has been ideologically opposed to rulemaking, which has further slowed progress toward vehicle safety improvements.

A good example involves the side impact protection rule. Federal Motor Vehicle Safety Standard (FMVSS) 214, first issued in 1970, was an adaptation of internal General Motors requirements for beams in car doors to resist intrusion. Somewhat later NHTSA conducted extensive research aimed at upgrading the standard to include crash testing with instrumented dummies. This research increased knowledge about vehicle performance in side impacts, but largely for political reasons NHTSA was not pursuing many new rules during the 1980s. Upgrading side impact requirements was put on hold. In November 1989 the newly appointed administrator, Jerry Curry, responded to what was by then strong political pressure to move forward with an upgrade, and he committed to do so early in his tenure. An upgraded rule was issued within a year of his arrival at

NHTSA. Because of continuing technical controversy about the adequacy of the new side impact test dummy, Curry acknowledged when he issued the rule in October 1990 that it was not perfect. But adding that waiting for a perfect rule would only delay the timely establishment of a good rule, he said he expected the agency to pursue further upgrades as new research became available.

NHTSA recently issued a notice of proposed rulemaking to further upgrade FMVSS 214 by adding crash tests and test dummies. The new standard will, in effect, require head protection. In the meantime, the Institute's side impact crashworthiness program and the voluntary agreement on front-to-side compatibility already are accelerating the installation of side airbags that protect people's heads. By the time any FMVSS 214 revisions can take effect, virtually all cars already will meet the new requirements. So in this case marketplace demands and voluntary standards will have superceded agency action.

As this example indicates, the rulemaking process has not always proceeded as expeditiously as it should. Sometimes this is because the agency's leadership has failed or because Congress has changed the agency's own priorities. I believe NHTSA's present administrator, Jeff Runge, is competent, knowledgeable, and committed. Therefore, I believe detailed Congressional dictates for new rulemaking are not needed at this time. Any Congressional mandates that may be issued should be broad rather than specific. The goal should be to facilitate safety outcomes rather than to tell NHTSA how to achieve those outcomes. And in all cases Congress should ensure that what it legislates NHTSA to undertake is feasible and based on sound science and adequate data.

Challenge of new safety technologies

Automakers and their suppliers are developing a wide range of new technologies, including many features designed to prevent crashes, and in some cases these already are being marketed. An example is electronic stability control, which NHTSA and Institute studies show to be effective in preventing single-vehicle crashes. Other examples include lane departure warning systems, blind spot detection, night vision enhancement, adaptive cruise control with stop-and-go braking, and run-flat tires. Still more features such as brake boost assist may prevent some crashes and reduce the severity of others. Systems also are being developed to activate crash protection features before impacts begin.

These innovations pose challenges for NHTSA and the rest of the safety community. We do not have the equivalents of crash tests with instrumented dummies to assess the performance of the new technologies. In most cases crash databases do not provide sufficient and reliable informa-

tion to assess the potential benefits that can be expected. We simply do not know how many crashes occur when drivers drift out of their travel lanes, for example. We do not know the extent to which suddenly deflating tires contribute to crashes. Nor do we know how drivers might respond to the various new technologies. The absence of reliable data about crash causation limits our ability to predict potential benefits of many of these new technologies. NHTSA, the auto industry, its suppliers, and the safety community need to work together to develop better data and new methods to assess such technologies so the most effective ones can be promoted.

Conclusion: a range of complementary approaches

Today vehicle safety is being improved through regulation, consumer information, and voluntary standards. This mix should mean that important safety improvements will be achieved much faster than when we relied solely on the slow and deliberative regulatory process. Federal standards set minimum levels of safety, but in some areas the manufacturers are designing vehicles substantially beyond these minimums to earn good ratings in consumer crash test programs. New safety technologies are being developed. But not every vehicle safety issue can be addressed in the marketplace. For example, it is hard to imagine consumers demanding vehicles that are less aggressive, or harmful, to people in other vehicles. So alternatives are needed. One such approach is for automakers to collaborate on voluntary safety standards. The main reason the Institute has signed on to collaborative approaches is that sometimes they can offer a faster track toward improvements than federal rulemaking would allow.

Voluntary approaches do not replace rulemaking, which is and will continue to be an important NHTSA function. While the agency need not address every issue with a standard, it should have in place a long-term program to review and upgrade — or in some cases to eliminate — its standards. If the agency adheres to such a course, there should be no need for Congressional dictates on rulemaking.

What is important to recognize is the range of options available today to achieve vehicle safety improvements. The wisest course is to proceed on a case-by-case basis, making full use of the most advantageous approach in any given situation.