SIDE IMPACT PROTECTION

Decades of Inaction and Thousands of Unnecessary Deaths;
Still No Standard for Side Impact Airbags and
Other Major Safety Improvements

About 10,000 people die each year in both single- and multiple-vehicle collisions involving side impacts, even though many of these deaths could be prevented by improved side impact safety standards. Side impact crashes have increased in both severity and the number of deaths over the past decade due primarily to the explosive growth in the number of aggressively designed sport utility vehicles in the nation's fleet. Purchases of SUVs, pickup trucks, and large vans now comprise one-half of annual sales of new passenger vehicles.

Not only has the federal government dragged its feet to prevent terribly destructive truck designs, but the National Highway Traffic Safety Administration (NHTSA) has made little progress toward improving side impact occupant protection, despite proven technologies such as side air bags.

Lower Interior Side Impact Protection (FMVSS No. 214):

Jan. 1, 1973	NHTSA's quasi static side impact test takes effect for passenger cars. The test relies on pressing a cylinder against passenger vehicle doors and results in moderate improvements in vehicles resisting intrusion, particularly from poles.
Dec. 6, 1979	NHTSA issues an advanced notice of proposed rulemaking (ANPRM) on upgrading the side impact standard and broadening its scope to include all passenger carrying vehicles.
1980s	NHTSA begins testing passenger vehicle side impact strength and occupant protection when vehicles strike poles in side impact crashes.
Jan. 1988	NHTSA proposes adding a more demanding dynamic test procedure that uses a moving barrier simulating another car to test car side impact safety performance.
Aug. 1988	NHTSA proposes updating lower interior side impact protection, including the use of dynamic tests and the need to address the problems of deep intrusion from narrow, fixed roadside objects, such as telephone poles.
Dec. 1989	NHTSA proposes to extend the cylinder test requirements introduced in 1971-1980 to light trucks, buses, and multipurpose passenger vehicles (MPVs).

Oct. 30, 1990	NHTSA adopts a dynamic side impact protection requirement, but only applies it to passenger cars. It also establishes requirements for a special side impact dummy and a moveable barrier similar to a medium-sized car to be used in dynamic side impact compliance testing. Most vehicles already comply with the meager occupant protection requirements for pelvis and thorax injury, and the other actions primarily comprise the use of special padding. The standard was phased in, with partial compliance necessary by 1994 and full compliance required by 1998.
Nov. 1991	Congress requires NHTSA to conduct rulemaking for the purpose of extending dynamic side impact protection requirements beyond passenger cars to include light trucks, vans, and SUVs with gross vehicle weight ratings (GVWRs) of 8,500 lbs. or less.
June 1992	NHTSA opens to public comment the proposal for extending the dynamic side impact standard to larger passenger vehicles.
Sept. 1, 1993	The quasi static test, made applicable to passenger cars in 1973, is extended to other passenger vehicles.
June 1994	NHTSA proposes to apply the dynamic side impact protection requirements to light trucks, vans, and SUVs weighing 8,500 lbs. GVWR or less.
July 1995	NHTSA extends its dynamic side impact test requirements beyond cars to include light trucks, vans, and sport utility vehicles (LTVs). However, the agency restricts compliance only to such vehicles 6,000 pounds GVWR or less. NHTSA rejects safety community arguments that the moveable barrier used for testing is too low and too light to show the side impact dangers of light trucks, especially smaller makes and models being struck by other large, tall, heavy LTVs. Full compliance not required until 1999.
July 1998	Safety organizations petition NHTSA to strengthen in specific ways the side impact standards for both lower interior and upper interior occupant protection, asking that the agency more closely coordinate the standards.
Mar. 1999	NHTSA holds public meeting on benefits of side impact air bags.
Oct. 1999	NHTSA grants a petition from Advocates for Highway and Auto Safety the Center for Auto Safety to improve the standard, but no rulemaking has occurred to date.
Dec. 1999	NHTSA opens to public comment a technical report authored by the agency on the relationship between the two injury measures (pelvic acceleration and Thoracic Trauma Index) used to determine compliance with the standard.

May 2000	NHTSA partially grants a petition from American Automobile Manufacturers Association (AAMA), Association of International Automobile Manufacturers (AIAM), and the IIHS asking the agency to use European side impact test criteria and crash dummies.
Feb. 12, 2004	Senate passes S.1072, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA 2003), which includes provisions addressing side impact protection that would: - Require the evaluation of additional barriers and measurements of head and neck injuries, consider the need for new dummies for full range of occupants, and review IIHS side impact test criteria (NPRM 6-30-04, not later than 18 months following NPRM).

Upper Interior Side Impact Head Protection (FMVSS No. 201):

1970s	GM begins to improve head impact performance in its vehicles with such technologies as air gap head impact padding (overlapping semicircles of thin aluminum) in critical roof areas.
1980s	By the 1980s, GM discontinues including such protections as air gap padding in most of its vehicles.
1981-1982	NHTSA and automakers begin cooperative research effort into upper interior head protection. The agency conducts its own research after the settlement of a lawsuit regarding conflicts with joint industry-agency research for government standards.
1988	NHTSA gives long-delayed regulatory notice of its interest in upgrading the interior impact protection safety standard to require head protection.
Dec. 1991	Intermodal Surface Transportation Efficiency Act (ISTEA) requires application of passenger car safety standards to light trucks, vans, buses, and MPVs 6,000 lbs. GVWR or less. ISTEA also requires issuance of a standard to prevent head injury, specifically mentioning the front header and roof.
Feb 1993	NHTSA proposes requiring both front and side impact upper interior head protection, but excludes roofs above their pillars, rails and headers.
Nov 1993	NHTSA conducts public meeting on the issues in the February 1993 proposed safety standard.
Aug 1995	Responding to a 1991 ISTEA requirement that NHTSA initiate and complete a rulemaking to address “improved head impact protection from interior components of passenger cars (i.e., roof rails, pillars and front

	headers)," the agency establishes minimum head protection requirements for both frontal and side impact with upper interior vehicle components. The changes apply to both passenger cars and light trucks 10,000 lbs. GVWR or less. The updated standard requires some manufacturers to soften head impacts with these interior features by adding foam padding and other countermeasures, but does not address roof strength.
Mar. 1996	NHTSA issues an ANPRM to evaluate public responses to issues involving the use of dynamic upper interior head impact systems.
Aug. 1997	NHTSA proposes amendment to FMVSS No. 201 for both frontal and side impact upper interior head protection, adding two test procedures to accommodate development of dynamic upper interior head impact protection systems, such as side-head air bags. However, the criteria must be used only if manufacturers choose to use dynamic rather than static systems for head protection. The proposed standard is weak and undemanding, requiring few safety improvements by vehicle manufacturers.
Dec. 1997	NHTSA proposes a new upper interior head impact test dummy composed of parts of two existing test dummies, the Hybrid III (torso) and the Side Impact Dummy (head).
Aug. 1998	NHTSA issues requirements for passenger cars, trucks, buses, and MPVs 10,000 lbs. GVWR or less to provide optional dynamic protection when an occupant's head strikes the vehicle upper interior components such as roof pillars, roof side rails and headers, and the roof itself. However, the rule permits but does not require the use of dynamic protection, such as air bags.
Aug. 1998	NHTSA also adopts specifications for a new composite test dummy to be used for compliance tests. The dummy is a composite of the existing Hybrid III dummy torso with a new Free Motion Headform taken from the Side Impact Dummy.
May. 1999	In a letter to the Alliance of Automobile Manufacturers dated May 9, NHTSA Administrator Dr. Ricardo Martinez expresses interest in the development of industry-generated, voluntary testing procedures to ensure side and head protection air bag safety, and "avoid the need for Federal standards in this area."
Aug. 1999	The Alliance of Automobile Manufacturers, in response to Administrator Martinez's letter, establishes a "Technical Working Group" (TWG) to develop side air bag occupant crash protection test procedures. TWG is comprised of representatives from the Alliance, Association of International Automobile Manufacturers, Automotive Occupant Restraints

	Council (a trade group of restraint manufacturers), NHTSA, Transport Canada, the insurance industry and academia. Significantly, the goal of TWG is not to achieve the actual installation of side air bags in vehicles, but only to develop a test. Contrary to Dr. Martinez's request, consumer representatives are excluded.
Apr. 2000	NHTSA proposes to amend technical features of Standard No. 201 with respect to the minimum distance between compliance test target points. However, no final rule has been issued to date.
Aug. 2000	The TWG releases its recommended procedures for evaluating occupant injury risk from deploying side air bags. The test procedures are the result of closed deliberations and, because they are voluntary, offer no procedural oversight by third parties, no outside verification of test compliance, no mechanism for accountability should an air bag system turn out to be a clear safety danger, and no assurance they will be used by all companies.
2002	More than 20 years after NHTSA's research began — and more than 30 years after GM began installing head impact protection in its vehicles — the upgrade of the upper interior protection safety standard is completely phased-in. Meanwhile, FM, in cost-cutting measures, makes side-air bags — as well as anti-lock brakes — optional equipment in a number of models where they had been standard.
Aug. 2003	The IIHS finds that only 24 percent of 2003 vehicle models offer head-protection side air bags as standard equipment. Moreover, these vehicles tend to be more expensive foreign vehicles.
Nov. 2003	A national household survey by the Insurance Research Council finds that 85 percent of respondents were aware that automakers had begun to equip some vehicles with side impact air bags, and six in ten respondents stated that the availability of side air bags would be an important consideration in the selection of their next vehicle.
Dec. 2003	The Alliance of Automobile Manufacturers announces a voluntary plan to test side air bags for most new vehicles by 2009. The plan, however, does not make any specific commitment to redesigning vehicles to improve side impact safety. Moreover, there is no requirement that all vehicles comply with the plan, and no outside body will verify vehicle compliance. The voluntary "standard" is developed in closed, secret deliberations, involves no procedural or judicial oversight, and provides no mechanisms for accountability.

Feb. 12, 2004	Senate passes S.1072, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA 2003), which includes provisions addressing side impact protection that would: - Require the evaluation of additional barriers and measurements of head and neck injuries, consider the need for new dummies for full range of occupants, and review Insurance Institute for Highway and Safety side impact test criteria (NPRM 6-30-04, not later than 18 months following NPRM).