

THE CONTINUING STRUGGLE FOR AUTOMOTIVE SAFETY

I. Introduction

The formulation and implementation of effective regulation in improving automobile safety is at an important stage in light of increased consumer awareness and demand for improved vehicle safety. Notably, airbag and passive restraint technologies have become effective features in sales of new cars. No longer are up-scale foreign automobile manufacturers, such as Mercedes Benz and Volvo, the only manufacturers who emphasize safety advances in their marketing approach; they have been joined by Chrysler, Ford and General Motors. Moreover, less marketable safety features, such as side impact protection, bumper standards, vehicle lighting and roof crush resistance, are integral components in the overall improvement of vehicle safety, not to be overshadowed by the improvements in safety resulting from installation of passive restraints and airbags.

The Motor Vehicle Safety Act of 1966,¹ the first regulatory initiative in automotive safety, was passed after 1.6 million people had died on our streets and highways in what President Johnson termed in 1965 an "epidemic" of traffic fatalities.² Presently, the trend toward manufacturing safer vehicles in the United States is fundamentally secure after twenty-four years of hard fought regulatory disputes and litigation among automobile manufacturers, consumer protection groups, insurance companies and the Department of Transportation (DOT). Clearly, significant vehicle safety improvements are still needed in light of close to 47,000 traffic fatalities annually.³ More importantly, efforts are continuing at the DOT, the congressional level and indi-

¹ National Traffic and Motor Vehicle Safety Act, Pub. L. No. 89-563, 80 Stat. 718, 849-50 (1966).

² U.S. DEP'T OF COMMERCE, REPORT ON THE DEVELOPMENT OF THE INITIAL FEDERAL MOTOR VEHICLE SAFETY STANDARDS Jan. 31, 1967 [hereinafter REPORT ON INITIAL FEDERAL MOTOR VEHICLE SAFETY STANDARDS]. The Commerce Department recommended that federal authority be used to "channel" the automobile industry into manufacturing safer automobiles. *Id.*

³ THE INSURANCE INSTITUTE FOR HIGHWAY SAFETY, IIHS FACTS 1989 (July 1989). Of the 47,000 fatalities, 33,104 involved occupants in passenger vehicles. *Id.* Motor vehicle fatalities are the leading cause of death among 15-24 year-olds. *Id.*

rectly in the courts, to ensure that as automotive technology improves, automobile manufacturers maintain and enlarge their commitment to producing safer automobiles.

This note will examine: (1) the development of motor vehicle safety standards, particularly Motor Vehicle Safety Standard (FMVSS) 208; (2) judicial requirements for specific technology in automotive products liability suits; and (3) recent legislative initiatives to improve and expand vehicle safety regulation.

II. Federal Motor Vehicle Safety Standards

In passing the National Traffic and Motor Vehicle Safety Act (hereinafter "Safety Act") of 1966,⁴ Congress took the first major step to require the DOT to assemble a comprehensive body of regulations aimed at standardizing motor vehicle safety requirements. The Safety Act directed the DOT to administer safety standards that are "practicable, shall meet the need for motor vehicle safety, and shall be stated in objective terms."⁵ The first safety standards incorporated general industry-wide standards set by the Society of Automotive Engineers (SAE).⁶ In addition, the General Services Administration (GSA) provided a limited number of performance and safety standards covering the Federal government's fleet of vehicles.⁷

In 1967, one year after passage of the Safety Act, the Department of Commerce evaluated the newly drafted safety standards.⁸ The 1967 report pinpointed several major safety concerns, especially full frontal collision resulting in driver and front seat passenger impact with the steering column or dashboard.⁹ The Commerce Department report expressly recom-

⁴ National Traffic and Motor Vehicle Safety Act of 1966, P.L. 89-563, 80 Stat. 718, 849 (1966).

⁵ Traffic and Motor Vehicle Safety Act, 15 U.S.C. § 1392 (1966).

⁶ See REPORT ON THE INITIAL FEDERAL MOTOR VEHICLE SAFETY STANDARDS, *supra* note 2, at ii. Secondary sources for the safety standards came from the Swedish National Road Board and the U.S. Bureau of Standards. *Id.*

⁷ *Id.*

⁸ *Id.* at i.

⁹ *Id.* at ix. The report suggested that auto manufacturers analyze the applicability of energy absorbing steering columns in reducing injuries in full frontal collisions. Three "real life" crashes involving vehicles with energy absorbing steering columns failed to provide sufficient evidence for establishing a new safety standard. *Id.*

mended safety improvements for vehicle tires, headrests and dashboards.¹⁰

The DOT's safety program was implemented by a newly formed regulatory agency, the National Traffic Safety Administration, which was renamed the National Highway Traffic Safety Administration (NHTSA) in 1970.¹¹ NHTSA's safety objectives could only be achieved by technological development in evaluating vehicle crash data, crashworthiness, crash simulation, and construction of anthropomorphic test dummies.¹² Generally, the agency has consistently improved biomechanical research and testing in significant areas such as fuel tank integrity, steering column assemblies and vehicle occupant restraint systems.¹³

Foremost among the goals of NHTSA in advancing vehicle safety testing technology is to better understand and quantify collision data in order to reduce traffic accident fatalities and injuries and to encourage automobile manufacturers to direct more resources to research and development in vehicle safety.¹⁴ Secondly, NHTSA provides numerous educational programs on traffic safety and vehicle occupant protection.¹⁵

NHTSA's safety programs continue to spur considerable controversy, particularly in their attempts to balance objectively the tremendous public health and safety needs promoted through stringent safety standards with the concerns of manufacturers that they will be overburdened by expensive safety programs.¹⁶ Traditionally, this balancing process has fostered

¹⁰ *Id.* at x. Effective standards were developed in several key areas: vehicle defrosting and defogging, seat belt anchorage hardware and vehicle lighting. *Id.*

¹¹ J. CLAYBROOK & D. BOLLIER, *FREEDOM FROM HARM: THE CIVILIZING INFLUENCE OF HEALTH, SAFETY AND ENVIRONMENTAL REGULATION* 71 (1986).

¹² *Id.* at 74-75.

¹³ *Id.*

¹⁴ Traffic and Motor Vehicle Safety Act, 15 U.S.C. § 1395 (1966).

¹⁵ NHTSA conducts important educational programs designed to increase usage of child safety seats, prevent alcohol related accidents, reduce speeding and increase safety belt usage.

¹⁶ R. NADER, *UNSAFE AT ANY SPEED* ix (1965). Public awareness of the vehicle safety controversy is partially attributable to Ralph Nader and his lobbying efforts, which forced Congress to review automobile safety. Nader noted in the preface of his 1965 book *UNSAFE AT ANY SPEED*:

[T]he true mark of a humane society must be what it does about *prevention* of accident injuries, not the cleaning up of them afterward. When thirty practicing physicians picketed for safe auto design at the New York International Automobile Show on April 7, 1965, their unprece-

lengthy political debate in Congress and the automotive industry.¹⁷ The controversy between consumer activists and automobile manufacturers over passive restraints has found its way into the courts as proponents of vehicle safety have challenged the automotive industry.

A. *Active and Passive Restraints*

In 1967 NHTSA issued the most widely known and debated regulatory standard of vehicle safety, Federal Motor Vehicle Safety Standard (FMVSS) 208, which mandated installation of restraint systems to protect vehicle occupants in collisions.¹⁸ The single most common and widely used occupant restraint device, the safety belt, was first made available as optional equipment in American made cars in 1955.¹⁹ In 1956 the National Safety Council publicly recommended the use of safety belts.²⁰

Prior to the passage of the National Motor Vehicle Safety Act of 1966, eighteen states had enacted laws requiring safety belts as standard equipment in passenger cars.²¹ As a result, one of the most important safety standards of the 1966 Motor Vehicle Safety Act specifically provided for the installation of safety belts, and in 1971 the standard was extended to multipurpose vehicles and trucks.²²

During the 1960's automotive safety engineers proceeded to develop two forms of restraint systems: active and passive. Active restraints, or conventional seat belts, require the vehicle oc-

dedent action was the measure of their desperation over the inaction of the men and institutions in government and industry who have failed to provide the public with the vehicle safety to which it is entitled.

Id. (emphasis added).

¹⁷ See J. CLAYBROOK & D. BOLLIER, *supra* note 11, at 68-69. Congressional hearings and investigations into vehicle safety date back to 1956 when Rep. Kenneth Roberts held hearings on the use and installation of safety belts. Congressional debate on vehicle safety has continued ever since that date. *Id.*

¹⁸ 32 Fed. Reg. 2408, 2415 (1967).

¹⁹ J. CLAYBROOK & D. BOLLIER, *supra* note 11, at 67.

²⁰ NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, OCCUPANT RESTRAINT LEGISLATION HANDBOOK: A GUIDE FOR PROPONENTS 1-5 (Feb. 1979) [hereinafter OCCUPANT RESTRAINT LEGISLATION HANDBOOK].

²¹ *Id.*

²² *Id.* at 1-6. In Victoria, Australia, mandatory seat belt use laws (MUL's) were passed in 1971 increasing belt usage from 25% to 75% and reducing injuries from accidents by 20% to 25%. *Id.* Similar reductions in accident fatalities have accompanied the passage of MUL's in other countries. *Id.*

cupant to strap or buckle themselves in. The most common and effective active restraint is the 3-point belt, or lap and shoulder belt, that firmly secures the occupant at the waist and the shoulders.²³ The obvious disadvantages of active restraints are frequency of use and overall effectiveness.²⁴ In the 1970's safety belt usage remained only around 20% nationally.²⁵ Mandatory seat belt use laws²⁶ and innovative public education programs highlighting the safety benefits of seat belts have made progress in increasing seat belt usage.²⁷ However, seat belt usage has never reached the levels of other countries with mandatory seat belt laws.²⁸ NHTSA estimates that if safety belt usage reached 85%, over 12,000 lives annually could be saved.²⁹ Because of statistical data confirming distressingly low rates of safety belt usage, NHTSA proceeded to evaluate alternative means of occupant protection that would be more effective than manual safety belts.³⁰ NHTSA, automotive safety experts and the automotive industry acknowledged newly developed passive restraint systems as providing clearly superior occupant protection than manual safety belts, primarily because passive restraints require no action on the part of the vehicle occupant.³¹

²³ NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, RESTRAINT SYSTEM USAGE IN THE TRAFFIC POPULATION i (Aug. 1988). In 1987 driver use of the 3-point belt system was estimated at 42.3%, with 3% of those drivers misusing the shoulder belt. *Id.*

²⁴ Unfortunately, seat belt use remains at approximately 50%. NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, OCCUPANT PROTECTION FACTS 1 (June 1989)[hereinafter OCCUPANT PROTECTION FACTS]. NHTSA calculates 15,900 fewer traffic fatalities would have occurred in 1988 "if all front-seat occupants wore safety belts." *Id.* at 2.

²⁵ OCCUPANT RESTRAINT LEGISLATION HANDBOOK, *supra* note 20, at 1-6.

²⁶ NHTSA has conducted several educational programs to increase safety belt usage, including information for organizations seeking to enact MUL's in their state. *Id.* NHTSA suggests "strategies, tactics and methods" for conducting state level initiatives seeking passage of MUL's. *Id.* at 6.

²⁷ NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, INCREASING SAFETY BELT USE THROUGH AN INCENTIVE PROGRAM 1 (Oct. 1982). NHTSA funded this incentive program, conducted at The Chapel Hill High School and Blue Cross and Blue Shield, both of North Carolina. *Id.* "The approach to belt use . . . is based on the well established learning principle that smaller, more frequent rewards [in this case, cash] can more successfully modify behavior than less frequent albeit greater rewards [i.e., greater protection in the event of a crash]." *Id.*

²⁸ OCCUPANT RESTRAINT LEGISLATION HANDBOOK, *supra* note 20, at 1-6.

²⁹ OCCUPANT PROTECTION FACTS, *supra* note 24, at 2.

³⁰ J. CLAYBROOK & D. BOLLIER, *supra* note 11, at 77.

³¹ HEDLUND, CASUALTY REDUCTIONS RESULTING FROM SAFETY BELT USE LAWS

The first common type of passive restraint is the automatic seat belt.³² The automatic seat belt comes in a variety of configurations, using a motorized spool that straps the occupant in with the close of the vehicle door and engagement of the ignition.³³ A second, non-motorized, system attaches the belt securely to the door and automatically engages with the close of the vehicle door.³⁴ In the development of passive safety belts, concerns have focused on the inclusion or exclusion of emergency release mechanisms and basic comfort and convenience factors.³⁵

B. Airbags

The most controversial and effective passive restraint system available is the airbag.³⁶ The airbag is a passive restraint device designed to protect front seat occupants in full frontal collisions from impacting the steering assembly or the instrument panel, or from being ejected from the vehicle.³⁷ In most configurations the driver side airbag is mounted within the hub of the steering wheel and automatically inflates in microseconds upon impact, and deflates again after impact absorption.³⁸ Airbag systems for front seat passengers are also available, but only a few vehicle manufacturers offer both driver and passenger airbag systems.³⁹

107-09 (1985). Overall seat belt usage must reach at least 80% before the overall safety benefits of airbag systems is even approached. *Id.* The combination of safety belts and airbags clearly provide the optimal occupant protection configuration. *Id.*

³² *Passive Restraints: Hits and Misses*, CONSUMER REPORTS, Apr. 1987, at 202.

³³ *Id.* The motorized passive safety belt system is available in General Motors passenger cars. *Id.*

³⁴ *Id.* The non-motorized passive safety belt type is available in certain Volkswagen and Chrysler models. *Id.*

³⁵ CONSUMER REPORTS evaluated passive safety belts in their 1987 *Car Buying Guide* and found the General Motors system (standard equipment on some Buick, Pontiac and Oldsmobile passenger cars) inconvenient to use. *Id.* The report did not give high marks to the Chrysler system, again because of convenience, but also because the lap belt had to be attached manually. *Id.* Toyota and Ford passive belts were rated as the most comfortable and convenient. *Id.*

³⁶ NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, FINAL REGULATORY IMPACT ANALYSIS AMENDMENT TO FMVSS 208, PASSENGER CAR FRONT SEAT OCCUPANT PROTECTION 2 (July 1984). The 1984 NHTSA report concluded that the airbag system, when used with safety belts, is the most effective occupant protection system available. *Id.* The lifetime cost of an airbag system totalled \$232 with lifetime reductions in insurance premiums ranging from \$76 to \$158. *Id.*

³⁷ *Passive Restraints: Hits and Misses*, *supra* note 32, at 202.

³⁸ *Id.*

³⁹ NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, CONSUMER INFORMA-

The airbag is renowned as the most extensively tested safety device in automotive history, spanning close to 40 years of testing and development.⁴⁰ In the 1950's inventors began filing patents for vehicle airbag systems and the U.S. Air Force began development and testing of airbag units to be used in military aircraft.⁴¹

In 1969, after considerable development and testing of airbags, the Federal Highway Administration issued an Advance Notice of Proposed Rulemaking setting a deadline for installation of airbags in all vehicles for 1972.⁴² As early as 1970, General Motors President Edward Cole addressed an international conference on passive restraints and strongly endorsed airbag development:

The development of passive restraints for automobile occupants should be a top priority in our national efforts to reduce highway deaths and injuries. Many proposals have been made for passive restraint systems to replace the lap and shoulder belts. At this time, however, the inflatable air cushion appears to have by far the greatest potential.⁴³

Subsequently, after conducting public meetings, automobile manufacturers recanted their praise for airbags and passive safety belts and obtained several extensions to the proposed passive restraint rulemaking, offering the 3-point safety belt as an alternative to passive safety belts and airbags.⁴⁴ In June 1976, the Transportation Secretary, William Coleman, instituted a complete review and hearings on the promulgation of a passive restraint safety standard.

TION (Feb. 1988). 1989 passenger cars equipped with driver and passenger side airbag systems include: Lincoln Continental, Mercedes-Benz 260, 300, 420, 560 and the Saab 9000 4dr. sedan or 5dr. Turbo. *Id.*

⁴⁰ PUBLIC CITIZEN, CHRONOLOGY OF AUTOMATIC CRASH PROTECTION (1990)[hereinafter CHRONOLOGY OF AUTOMATIC CRASH PROTECTION].

⁴¹ PUBLIC CITIZEN, PASSIVE RESTRAINTS: CHRONOLOGY OF STANDARD 208 1 (Jan. 1985)[hereinafter CHRONOLOGY OF STANDARD 208]. John Hetrick applied for the first "safety cushion assembly for automotive vehicles," U.S. Patent 2, 649, 311, on August 5, 1952. *Id.*

⁴² *Id.* at 3. Airbag development was thought to be near completion following presentations from airbag manufacturing companies. *Id.*

⁴³ CHRONOLOGY OF STANDARD 208, *supra* note 41, at 3. Mr. Cole presented his remarks at the North Atlantic Treaty Organization's First International Conference on Passive Restraints on May 11, 1970. *Id.*

⁴⁴ *Id.* at 5-6.

Coleman's initial proposal presented five major options for consideration:

- I. Continuation of existing requirements until August 31, 1979;
- II. State mandatory safety belt usage laws;
- III. A federal field test of passive restraints, including extension of current requirements;
- IV. Mandatory passive restraints, proposed August 31, 1979 effective date for driver side; full front — 2 years later; and
- V. Mandatory passive restraint option in some or all models of each manufacturer.⁴⁵

However, the Director of NHTSA, John Snow, reevaluated the passive restraint issue and indicated that Coleman's agreement that any proposed rulemaking mandating passive restraints would be effectively opposed by Congress and automobile manufacturers.⁴⁶ Snow reasoned that airbags should be made available as optional equipment, thus allowing consumers the opportunity to purchase the safety equipment of their choice.⁴⁷ As a result, rulemaking on passive restraints was again delayed and Coleman's plan to compel the marketing of 500,000 passive restraint demonstration vehicles, to promote the life-saving capabilities of passive restraints, and to educate the public on new restraint technology, was eventually discontinued.⁴⁸

In 1977, Brock Adams was appointed Secretary of Transportation. After carefully considering former DOT chief Coleman's decisions and objections, he vowed to move forward with improving FMVSS 208, particularly in the area of passive restraints.⁴⁹ On March 24, 1978, Adams presented three rulemaking options for public comment:

- I. No changes in any standard or regulation;

⁴⁵ *Id.* at 17.

⁴⁶ *Id.* at 19. Snow apparently doubted NHTSA's ability to convince Congress on the necessity for passive restraints and feared opposition from automobile manufacturers. He publicly stated:

Mandating passive [restraints] would require a substantial burden of proof which we would have great difficulty meeting when the issue goes before Congress. . . we know mandating issues would be strongly opposed by the auto manufacturers.

Id.

⁴⁷ *Id.* at 19.

⁴⁸ *Id.* at 20-21.

⁴⁹ *Id.* at 21.

II. Mandate passive restraints at all front designated seating positions of passenger cars manufactured on or after September 1, 1980, or in the alternative, to mandate passive restraint protection at the driver position or the right front passenger position, with full front protection to follow at a later date; and
III. Mandatory seat belt use laws established under the Highway Safety Act.⁵⁰

On June 30, 1977, Secretary Adams, amid intense controversy, amended FMVSS 208 to mandate passive restraint protection in all passenger cars for the 1984 model year and larger wheelbase vehicles in the 1982 model year.⁵¹ The automotive industry continued to oppose strongly any new NHTSA rulemaking.⁵² Finally, in December of 1977, NHTSA denied any further petitions for reconsideration of passive restraint rulemaking on FMVSS 208; such petitions had been issued by American Motors, Chrysler, Ford, General Motors and other manufacturers.⁵³ The agency believed the amendments to FMVSS 208 did provide substantial lead-time for vehicle manufacturers, and that this would reduce the modification and development costs necessary for the proper installation of passive restraints.⁵⁴ The expected congressional objection to the new rulemaking did not materialize in any new legislation blocking the rulemaking.⁵⁵

Throughout the rulemaking process, NHTSA carefully complied with all procedural requirements and implemented the

⁵⁰ *Id.* at 21.

⁵¹ The DOT policy objective behind the rulemaking stated: [U]pgraded occupant crash protection is a reasonable and necessary mandate of the National Traffic and Motor Vehicle Safety Act to provide protection through improved automotive design, construction, and performance." 42 Fed. Reg. 34,289-90 (1977).

⁵² *Id.* at 34,292. General Motors questioned the validity of DOT statistics on airbag effectiveness. *Id.* The automobile industry continued to criticize publicly the effectiveness of airbag systems. For example, General Motor's Vice President, Dr. Betsy Ancker-Johnson, stated airbags are "economically impracticable." Passell, *What's Holding Back Airbags?* NEW YORK TIMES MAGAZINE, Dec. 18, 1983, at 73.

⁵³ CHRONOLOGY OF STANDARD 208, *supra* note 41, at 24.

⁵⁴ 42 Fed. Reg. 34,295 (1977). Department of Transportation Secretary Adams' schedule for rulemaking recognized industry concerns: "The burden placed on the vehicle manufacturers to redesign the instrument panel and related components to accept air bags can be reduced considerably by phasing in the passive restraint requirement over several years." *Id.*

⁵⁵ CHRONOLOGY OF STANDARD 208, *supra* note 41, at 24. The Senate and House of Representatives held hearings to debate the new airbag and passive safety belt rulemaking. *Id.* Resolutions introduced in the House and Senate seeking to terminate the passive restraint rulemaking were unsuccessful. *Id.*

rulemaking only after numerous hearings, examination of laboratory and "real-life" crash results, and full consultation and input from the automotive industry and independent testing laboratories experienced with passive restraint systems.⁵⁶ The majority of the automotive safety analysts consulted were in full agreement that the FMVSS 208 requirements, instituted by the new rulemaking, took a substantial step forward in improving occupant safety and were technically and economically feasible for vehicle manufacturers.⁵⁷

The automotive industry insistence on delaying the installation of passive restraints was predominately attributable to lingering technical and cost difficulties associated with passive restraints.⁵⁸ Indeed, several important technical problems purportedly still bothered automotive engineers in Detroit. Primarily, concerns extended to the possibility of injuries to "out of position" occupants or to children struck by the air cushion when not in a normal seating position.⁵⁹ Another significant concern was airbag inflation in a minor collision disabling the driver from avoiding collision with a second vehicle.⁶⁰ Problems also existed with the possibility of accidental inflation due to malfunctioning sensors or non-inflation because of extreme temperatures or high altitudes.⁶¹ Lastly, the common forms

⁵⁶ *Id.* at 20-21. In fact, Secretary Coleman in 1976, and Adams in 1977, conducted extensive public hearings fully reviewing the airbag and passive restraint issue. *Id.* Testimony was heard from numerous safety experts. *Id.*

⁵⁷ *Id.* at 5. Safety analyst Donald Friedman of Minicars Inc., a vehicle safety development corporation, in testimony before Secretary Adams stated:

I don't think there is any doubt from a manufacturing point of view the [airbag] systems can be put in [small cars]; they have been put in big cars and they can be put in any size car with a nominal research and development cost Whether they [automobile manufacturers] would prefer to do it or not is, I think, a different issue.

Id. (quoting 1977 *Passive Restraint Hearings, Dep't of Transportation* (April 27-28, 1977)).

⁵⁸ Passell, *supra* note 52, at 73-74.

⁵⁹ *Id.* at 74. The out-of-position occupant problem was brought to light by General Motors in 1979. *Id.* at 74. A baboon was killed during airbag testing, possibly because the animal was out of position when the airbag deployed. *Id.* The Insurance Institute for Highway Safety countered GM's test results by citing 16 "real world" crashes resulting in airbag deployment involving children under 10 reporting no fatalities. *Id.*

⁶⁰ *Id.*

⁶¹ *Id.* at 73. Inadvertent airbag deployment could cause the driver to lose control of the vehicle when the vehicle is not involved in a full frontal collision. Airbags also required testing in adverse weather conditions and extreme weather ensuring proper performance of the crash sensor units. *Id.*

of airbag propellants, which are used to inflate the cushion, contain sodium azide or other more toxic chemicals which present the possibility of exposure to toxins by trapped vehicle occupants and further difficulties with disposal of the toxic chemicals following inflation or scrapping of the vehicle.⁶²

More importantly to the automotive industry, airbag and passive restraint technology, although not in its infancy, continued to worry skeptical industry analysts as to the overall effectiveness of the systems in a pure cost/benefit analysis.⁶³ Clearly, the airbag posed substantial cost considerations to auto manufacturers in such a competitive car market.⁶⁴ The airbag unit originally averaged roughly \$800 per vehicle,⁶⁵ and with the influx of foreign competitors and stagnant domestic car sales, the industry was hesitant to include the additional manufacturing costs.⁶⁶ The cost evaluations submitted by the automotive industry to postpone NHTSA passive restraint rulemaking attempted to calculate the number of consumers that would not purchase a new vehicle because of the inclusion of an

⁶² NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, AIRBAGS AND SODIUM AZIDE (1979). Sodium azide is intended to inflate the airbag quickly with a non-toxic gas in a controlled manner. *Id.* The sodium azide used in airbags is housed in a steel canister and is found neither to be a persistent toxin nor explosive. *Id.* The sodium azide units are constructed in a manner that makes them very difficult to disassemble and they need no servicing. *Id.*

⁶³ Airbag installation required "retooling" by automobile manufacturers and design modifications to instrument panels. 34 Fed. Reg. 34,295 (1977). The manufacturers contended that increased seat belt use would provide equivalent, or greater, safety benefits than airbags, without any additional design modification costs. *See State Farm v. Department of Transp.*, 680 F.2d 206, 213-14 (D.C. Cir. 1982).

⁶⁴ In a 1971 White House meeting between automobile industry executives and President Nixon, Lee Iacocca admitted U.S. auto industry troubles:

[W]e are in a downhill slide . . . the Japs are in the wings ready to eat us up alive. So I'm in the position to be saying to Toms [NHTSA Administrator] and Volpe [DOT Secretary] would you guys cool it a little bit? You're gonna break us.

J. CLAYBROOK & D. BOLLIER, *supra* note 11, at 78 (quoting *White House Tapes Transcript, Meeting of Richard Nixon, Lee Iacocca and Henry Ford, General Services Administration* at 19 (April 27, 1971)).

⁶⁵ Cost estimates for airbag systems vary greatly. The NHTSA estimated airbag units would increase vehicle cost by \$112 and passive belts by \$25. *State Farm v. Department of Transp.*, 680 F.2d at 214. Automobile manufacturers estimated airbags would cost consumers \$1,100. J. CLAYBROOK & D. BOLLIER, *supra* note 11, at 81.

⁶⁶ *See supra* note 63.

expensive safety device on the sticker price.⁶⁷

Public reaction and acceptance of airbag technology was another critical concern voiced by auto manufacturers in delaying installation of passive restraints.⁶⁸ Information obtained in 1979 by Congress indicates that the fear of negative public acceptance was not well founded and possibly deceptive.⁶⁹ General Motors, for example, conducted consumer preference testing in 1971 and withheld publication of the test results as trade secrets.⁷⁰ Information released in 1979 by Representative John L. Burton on the General Motor's Workshop on passive restraints revealed that airbags were in fact selected as the most preferred occupant protection device among the participants.⁷¹ The workshop participants were thoroughly briefed on the benefits, hazards, and costs of available passive restraint technology, and they selected airbags over automatic belts as the preferred restraint system. Subsequent General Motors consumer preference testing conducted in 1978 and 1979 confirmed consumer preference and acceptance of airbag systems.⁷²

Automobile manufacturers were soon criticized by consumer activists and the insurance industry for a lack of a fundamental concern for occupant safety and for a reduction of traffic fatalities and injuries.⁷³ Consumer advocates additionally claimed that the auto industry merely sought to delay NHTSA passive restraint rulemaking to protect profits and intended to postpone any passive restraint

⁶⁷ J. CLAYBROOK AND D. BOLLIER, *supra* note 11, at 81.

⁶⁸ CHRONOLOGY OF STANDARD 208, *supra* note 41, at 25.

⁶⁹ INSURANCE INSTITUTE FOR HIGHWAY SAFETY, CONGRESSMAN CHARGES AIRBAG DATA SUPPRESSED, THE HIGHWAY LOSS REDUCTION STATUS REPORT 15-16 (Dec. 21, 1979).

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.* at 16. In debating the DOT appropriations bill, Rep. Burton characterized statements by opponents of passive restraints as "deceptive, incomplete, and irrelevant." *Id.*

⁷³ *Statement by Clarence Dittlow III, Director, Center For Auto Safety, before the Dep't of Transportation on FMVSS 208* (Dec. 5, 1981)(available at the Center for Auto Safety, Washington, D.C.).

The airbag is a tragic saga of a willing technology and a failing morality. Developed nearly 30 years ago, the airbag has long stood ready to save 10-12,000 lives and preventing 100,000 serious injuries annually. By "waging the regulatory equivalent of war," in the words of the Supreme Court, the auto industry has consciously and immorally prevented the installation of lifesaving airbags since they were first mandated for 1972.

Id.

rulemaking until there were further reductions in the cost of airbag technology.⁷⁴

C. *Passive Restraints Go to Court*

Two major lawsuits were filed by automobile manufacturers in the early 1970's in an attempt to postpone passive restraint rulemaking by the DOT. The first challenge in *Chrysler v. Department of Transportation* successfully delayed NHTSA rulemaking in 1972, citing significant technical problems with anthropomorphic test dummy evaluations of passive restraints.⁷⁵ The court did comment in *Chrysler* that NHTSA's evaluation and subsequent requirement for passive restraint systems was supported by "substantial evidence."⁷⁶ In a later case, the Sixth Circuit upheld the remainder of the FMVSS 208 in *Ford Motor Co. v. National Highway Traffic Safety Administration*.⁷⁷

The first legal challenges to the 1977 FMVSS 208 rulemaking were filed by the Pacific Legal Foundation and Ralph Nader's consumer group Public Citizen, and the claims were eventually joined by the court into one action.⁷⁸ The Pacific Legal Foundation questioned the legality of mandating passive restraints and Public Citizen disputed the delay in the phase-in of passive restraints.⁷⁹ The court's findings in *Pacific Legal Foundation v. Department of Transportation* highlighted the effectiveness and benefits of airbags, deeming DOT statistical data on airbag efficacy credible, and declared the NHTSA rulemaking valid.⁸⁰

By affirming the validity of NHTSA FMVSS 208 rulemaking the court rejected Public Citizen's claim.⁸¹ Public Citizen's contention that the delay in phasing in airbag and passive restraint installation was unduly long was also rejected by the court's affir-

⁷⁴ CENTER FOR AUTO SAFETY, NHTSA THREATENS CENTER OVER RELEASE OF INTERNAL AGENCY MEMORANDUM SHOWING AUTO COMPANY COST FIGURES OF ONLY \$100 FOR AIRBAG SYSTEMS (Aug. 12, 1981)(press release).

⁷⁵ 472 F.2d 659, 681 (6th Cir. 1972).

⁷⁶ *Id.* at 672.

⁷⁷ 473 F.2d 1241, 1244 (6th Cir. 1973).

⁷⁸ *Pacific Legal Found. v. Department of Transp.*, 593 F.2d 1338 (D.C. Cir. 1979), *cert. den.*, 444 U.S. 380 (1979).

⁷⁹ *Id.* at 1340.

⁸⁰ *Id.* at 1345.

⁸¹ *Id.* at 1347.

mation of the legality of the DOT rulemaking.⁸²

In 1981 dramatic changes in FMVSS 208 rulemaking were implemented by the newly appointed DOT Secretary, Andrew Lewis.⁸³ The automobile industry, through well-orchestrated lobbying efforts, convinced the Reagan Administration that action was needed to deregulate the U.S. auto industry because of declining domestic automobile sales and increasing foreign competition.⁸⁴ The White House proceeded to encourage measures aimed at reviving the troubled U.S. automobile industry.⁸⁵ Subsequently, in October of 1981 NHTSA issued a Final Rulemaking that rescinded FMVSS 208 requirements for passive restraints.⁸⁶ NHTSA supported the rescission notice, issued only ten months prior to FMVSS 208's effective date, citing the probability of inadequate consumer acceptance or usage of passive restraints, which they claimed would result in negligible benefits from passive restraint installation.⁸⁷

State Farm Insurance and the National Association of Independent Insurers immediately filed suit requesting judicial review of the rescission of FMVSS 208 passive restraint rulemaking.⁸⁸ The Court of Appeals in *State Farm v. Department of Transportation* responded affirmatively to State Farm's objection to the rulemaking rescission.⁸⁹ The court again recognized the tangible safety benefits of effective restraint systems, as it did in *Pacific Legal Foundation*, in reducing insurance premiums, lowering medical expenses, and — most importantly — easing the "human tragedy" of traffic fatalities.⁹⁰ After examining the complete legislative history and congressional debate on vehicle safety standards, the court concluded that the significant change

⁸² *Id.* at 1348.

⁸³ CHRONOLOGY OF STANDARD 208, *supra* note 41, at 27.

⁸⁴ 46 Fed. Reg. 12,033 (1981). The one year rulemaking delay was a result of "unanticipated events" in the auto industry. *Id.* The unemployment level of auto workers approached 200,000 in 1981. *Id.* According to automotive manufacturers, industry expenditures to meet fuel economy standards coincided with declining sales, rendering the industry vulnerable to foreign competition and unable to implement safety improvements. *Id.*

⁸⁵ *Id.*

⁸⁶ CHRONOLOGY OF STANDARD 208, *supra* note 41, at 27.

⁸⁷ *Id.*

⁸⁸ *State Farm v. Department of Transp.*, 680 F.2d. 206, 208 (D.C. Cir. 1982).

⁸⁹ *Id.* at 242.

⁹⁰ *Id.* at 212.

in NHTSA policy toward deregulation was not the clear intention of Congress.⁹¹

Moreover, the court undertook a lengthy review of the NHTSA rulemaking process and the congressional will to improve vehicle safety.⁹² The DOT's contention that passive belts would not provide any measurable safety benefit, were financially over burdensome for the automotive industry, and were likely to discourage further development in occupant protection, was uncorroborated by the evidence presented.⁹³ In sum, the court judged the DOT rescission of FMVSS 208 as blatantly "arbitrary and unlawful" and unquestionably lacking in convincing statistical evidence that the installation of passive belts would not provide any appreciable safety benefits.⁹⁴ The court additionally maintained that the possibility, or threat, of a congressional veto of any safety standard mandating airbags did not in itself justify rescission of FMVSS 208.⁹⁵

The United States Supreme Court in 1983 granted review of the Court of Appeals decision upon petition from the Motor Vehicle Manufacturers Association (MVMA).⁹⁶ Justice White applied a general test for "arbitrary and capricious" conduct by government agencies, distinguishing inactivity by a regulatory agency in a particular field from rescission of an existing regulation.⁹⁷ The agency rescinding a regulation is held to be under a significantly greater burden to supply "well reasoned" analysis to justify their actions than the government agency that has failed to act in a particular area.⁹⁸

The majority acknowledged that the Supreme Court lacked the authority to invalidate a rationally formulated rule squarely within the statutory province of the federal agency as determined by Congress.⁹⁹ Nevertheless, NHTSA's actions failed the ration-

⁹¹ *Id.* at 230.

⁹² *State Farm v. Department of Transp.*, 680 F.2d at 210-28.

⁹³ *Id.* at 242.

⁹⁴ *Id.* at 230.

⁹⁵ *Id.* at 238.

⁹⁶ *Motor Vehicle Mfr. Ass'n v. State Farm*, 463 U.S. 29 (1983).

⁹⁷ *Id.* at 44.

⁹⁸ *Id.* at 52. The Court derided the NHTSA rescission of important safety rulemaking and found that the agency's actions were not the product of "reasoned decisionmaking." *Id.*

⁹⁹ *Id.* at 43.

ality criteria applied by the Court.¹⁰⁰ The Supreme Court vacated the lower court ruling and remanded the case back to the Court of Appeals, directing NHTSA to come forward with substantially more detailed information and analysis on the need for the rescission of the FMVSS 208 passive restraint rulemaking.¹⁰¹

In response to the Supreme Court ruling, the NHTSA Administrator reviewed the rescission notice and reinstated FMVSS 208 with two major caveats attached.¹⁰² First, if two-thirds of the states pass mandatory seat belt use laws the rulemaking requiring passive restraints would be suspended.¹⁰³ Secondly, the passive restraint requirement would not become mandatory until September 1, 1989, and until that date all passive restraint requirements would only be gradually phased-in.¹⁰⁴

In 1987, Mercedes Benz became the industry leader in offering airbags as standard equipment.¹⁰⁵ Chrysler followed Mercedes' lead in offering driver side airbags. In 1988 Chrysler manufactured 70,000 airbag-equipped vehicles for domestic sales.¹⁰⁶ In addition, Chrysler announced that their 1990 car line would contain driver side airbags as standard equipment.¹⁰⁷ Accident crash data released by Chrysler reported ninety-one airbag deployments as of September 15, 1988 with no reported fatalities, life threatening injuries or deployment failures.¹⁰⁸ Other vehicle manufacturers have reported similar "real life" successes and have begun heralding the safety benefits of the airbag.

III. *The "State of the Art Requirement" and Federal Preemption*

The scope of automobile products liability has seen considerable broadening since the landmark case of *McPherson v. Buick Motor Co.* was decided in 1916.¹⁰⁹ The availability of legal reme-

¹⁰⁰ *Id.*

¹⁰¹ *Id.* at 57.

¹⁰² CHRONOLOGY OF AUTOMATIC CRASH PROTECTION, *supra* note 40.

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ CONSUMER REPORTS, *supra* note 32, at 202.

¹⁰⁶ CHRYSLER MOTORS, CHRYSLER REPORTS 91 AIR BAG DEPLOYMENTS (Sept. 15, 1988)(press release).

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ 217 N.Y. 382, 111 N.E. 1050 (N.Y. 1916). This decision allowed *McPherson* to successfully bring a negligence claim without privity of contract.

dies for defective vehicle design was further expanded in *Larsen v. General Motors*, which emphasized judicial responsibility to evaluate fully and openly the sufficiency of vehicle design and fabrication.¹¹⁰ In the early 1970's a blatant design defect involving the placement of the fuel tank in the Ford Pinto resulted in sharp public outcry against the Ford Motor Co.¹¹¹

Furthermore, the principle of strict liability in tort under Restatement Second of Torts § 402 A has additionally benefitted plaintiffs in automobile product liability suits by holding vehicle manufacturers liable for product defects despite the exercise of reasonable care in the manufacturing stage.¹¹² The policy objective intended in the application of strict liability in tort to automobile design cases is to compel manufacturers to incorporate the vast scientific data and latest technological advancements available within the automotive industry to reduce the injuries and fatalities resulting from design defects.¹¹³

A. *Liability Under the Crashworthiness Doctrine*

The crashworthiness doctrine,¹¹⁴ whether applied in the context of strict liability in tort or negligence, directly imposes liability for injuries due to a product defect which did not cause the accident, but which "enhanced" the injuries of the vehicle occupants.¹¹⁵ Generally, enhanced injuries are a result of a "second collision" when the driver or passenger strikes any part of the vehicle, or is ejected from the vehicle and strikes the ground or roadway.¹¹⁶ In *Larsen*, General Motors was strictly liable for the driver's head injuries caused after impacting the steering col-

¹¹⁰ 391 F.2d 495, 496 (8th Cir. 1968).

¹¹¹ See R. GOODMAN, *AUTOMOBILE DESIGN LIABILITY* 4 (1983). See, e.g., *Indiana v. Ford Motor Co.*, No. 79-5304, 47 LW 2514-15 (Ind. Super. Ct. 1979). Three Indiana women were killed when the fuel tank in their Ford Pinto exploded. *Id.* Criminal charges were brought against Ford for reckless homicide in manufacturing the Pinto. *Id.* However, Ford was acquitted of criminal wrongdoing. *Id.*

¹¹² See generally PROSSER & KEETON *ON THE LAW OF TORTS*, 95-98 (5th ed. 1984).

¹¹³ *Id.*

¹¹⁴ 15 U.S.C.S. § 1901 (14) (Law Co-op. 1982) defines crashworthiness as "the protection that a motor vehicle affords its passengers against personal injury or death as a result of a motor vehicle accident."

¹¹⁵ R. GOODMAN, *supra* note 111, at 7. Goodman suggests crashworthiness is simply defined as "enhancement of injuries." *Id.*

¹¹⁶ *Id.*

umn of a Corvair.¹¹⁷ Today, crashworthiness claims are common and the doctrine has been accepted in a majority of jurisdictions.¹¹⁸

Minority jurisdictions, notably North Carolina, that do not fully accept the crashworthiness doctrine maintain that the defect must directly cause or contribute to the accident itself. In failing to accept fully the crashworthiness doctrine in *Erwin v. Jeep Corporation*, for example, the court concluded that only a claim based solely on negligence is likely to be successful.¹¹⁹ The standard formula is that absent the manufacturer's negligence, such as failing to tighten wheel lug nuts, no accident would have resulted.¹²⁰ By failing to recognize the crashworthiness doctrine the plaintiff in *Erwin* objected to allowing automobile manufacturers to have a lower standard of care for vehicles distributed in North Carolina.¹²¹

In adopting the crashworthiness doctrine, courts generally discount vehicle manufacturer's assertions that their duty of care is fulfilled simply through compliance with existing federal safety standards.¹²² Thus, successful negligence claims prove "a reasonably prudent manufacturer would have designed or manufactured the vehicle differently" in order to remove the defect responsible for the vehicle occupant's injuries.¹²³ Moreover, product liability doctrine and the Motor Vehicle Safety Act conclusively dictate that governmental standards and regulations merely set a minimum safety standard that cannot preempt common law duties.¹²⁴ In recent years the crashworthiness doctrine has been tested considerably with the effective application of federal preemption as a valid defense only in a limited number of design defect cases.

¹¹⁷ *Larsen*, 391 F.2d at 495.

¹¹⁸ R. GOODMAN, *supra* note 111, at 10.

¹¹⁹ 812 F.2d 172, 173 (4th Cir. 1987). *Erwin* was paralyzed after a multiple car accident in which her Jeep overturned. *Id.* *Erwin* claimed the Jeep's rollbar system was inadequate, and thus substantially contributed to her injuries. *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² R. GOODMAN, *supra* note 111, at 13.

¹²³ *Id.* at 7.

¹²⁴ *Id.* at 13.

B. Federal Preemption

The supremacy clause of the United States Constitution¹²⁵ is obviously an important provision in suits involving federal regulations and state tort law doctrine.¹²⁶ Federal legislation, if clearly stated, can thoroughly encompass a particular field of law.¹²⁷ For example, Federal Motor Vehicle Safety Standards clearly have preemptive force and preclude state common law tort doctrine from infringing or interfering with the implementation or enforcement of automobile safety standards.¹²⁸

The benefits of the federal regulatory scheme entailed in the Motor Vehicle Safety Act are intended to be conferred upon both the general public and the automobile industry.¹²⁹ The primary industry benefit is a uniform, predictable, body of regulations fixing safety requirements and performance standards for all motor vehicles sold in the United States.¹³⁰ Likewise, the standards substantially benefit society at large: six major safety standards are estimated to save 1,000 lives and prevent 200,000 serious injuries per year at a cost of only \$48.86 per vehicle.¹³¹

However, the preemption scheme set forth in the Motor Vehicle Safety Act does allow states to enact regulations in specific areas not covered by federal regulation.¹³² The applicable test developed in *Silkwood v. Kerr-McGee* obliges courts to determine if the applicable state tort law acts to defeat the goals of the federal regulation or law.¹³³

Nevertheless, compliance with federal safety standards by

¹²⁵ U.S. CONST. art. VI, cl. 12.

¹²⁶ Wilton & Campbell, *Effect of Federal Safety Regulations on Crashworthiness Litigation* 22 TORT INS. L. J. 554, 559 (1987).

¹²⁷ The Federal Tobacco Inspection Act was found in *Campbell v. Hussey*, 368 U.S. 297 (1961), to preempt any state tobacco standards. In passing the Act Congress "preempted the field and left no room for any supplementary state regulation" *Id.* at 301.

¹²⁸ Wilton & Campbell, *supra* note 126, at 560.

¹²⁹ *Id.* at 561.

¹³⁰ Traffic and Motor Vehicle Safety Act, 15 U.S.C.A. § 1392 (West 1966).

¹³¹ J. CLAYBROOK & D. BOLLIER, *supra* note 11, at 76. The NHTSA FMVSS's achieved safety improvements in steering assemblies, side impact, head restraints, fuel system integrity, laminated windshields, and windshield adhesive bonding. *Id.*

¹³² *Id.*

¹³³ 464 U.S. 238 (1984). The federal preemption defense asserted by *Kerr-McGee* was deemed by the Court ineffective in alleviating liability for punitive damages awarded as a result of radiation contamination. *Id.* at 250-51.

the automotive industry has not fully insulated the public from automotive components that are defectively designed.¹³⁴ The Firestone 500 radial tire fully complied with FMVSS 109 tire standards, yet the tire's defect caused 3,300 traffic accidents.¹³⁵ Safety analysts termed the tire problem "one of the worst defects in automotive history."¹³⁶ In short, any court's acceptance of the preemption doctrine in tire safety would serve effectively to bar those individuals harmed by Firestone's unsafe tire from receiving any compensation for their injuries.¹³⁷

The Ford Pinto fuel tank complied with FMVSS 301 crash impact requirements. Nevertheless, fuel tank explosions accounted for twenty-seven deaths and twenty-four major burn injuries.¹³⁸ Plaintiffs successfully recovered \$25 million for the defective fuel tanks.¹³⁹ Subsequently, internal Ford evaluations revealed that a cost analysis study was undertaken by Ford and a \$90 million savings resulted from delaying new standards for fuel tank integrity in rear impact collisions.¹⁴⁰

In another example, although the General Motor's Pontiac Trans Am complied with roof crush resistance standards under FMVSS 216, a vehicle occupant suffered a broken neck and paralysis in a single low speed rollover.¹⁴¹ In *Shipp v. General Motors* the

¹³⁴ See, e.g., Teret & Downey, *Airbag Litigation: Promoting Passenger Safety*, TRIAL (July 1982), at 93. The authors further state:

Product liability law fosters injury prevention by creating a financial incentive to design safe products. The importance of this function of product litigation becomes even greater when the executive and administrative offices of government choose not to regulate industry for the benefit of public health and safety. The message of large verdicts for the failure to make airbags available can be loudly heard by automotive manufacturers, and has the potential for being more effective than the attempts to regulate over the past dozen years.

Id. at 99.

¹³⁵ *The Role of Government Standards and the State-Of-The-Art Defense in Product Liability Litigation: Hearings Before the Subcomm. on Commerce, Consumer Protection & Competitiveness of the House Comm. on Energy and Commerce, 100th Cong., 1st Sess. 1-4 (1987)*(statement of Clarence M. Ditlow III, Director, Center For Auto Safety).

¹³⁶ *Id.*

¹³⁷ *Id.* Mr. Ditlow further remarked that in automobile design defect cases "innovative" defense attorneys would always locate a FMVSS to absolve their client from liability. *Id.* at 3.

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ *Shipp v. General Motors*, 750 F.2d 418, 420 (5th Cir. 1985).

Fifth Circuit Court of Appeals stated "obedience to the federal standard does not intensify our standard of review."¹⁴² Likewise, compliance with FMVSS 216 did not immunize General Motors from common law strict liability.¹⁴³

The federal preemption defense has been strongly opposed by plaintiffs' lawyers and consumer activists, who argue that it relieves auto manufacturers from financial liability for automobile design defects.¹⁴⁴ Opponents of the federal preemption defense have put forth three basic arguments rejecting preemption as harmful to fostering progress in vehicle safety.¹⁴⁵ First, the FMVSS's fail to reflect adequately the overall capability of the automotive industry to produce safer vehicles and are primarily a minimum standard for vehicle performance.¹⁴⁶ Second, FMVSS's do not regulate all facets of vehicle safety and are slow to respond to new technologies because of a variety of procedural requirements built into the rulemaking process.¹⁴⁷ Third, vehicles can be manufactured in compliance with FMVSS, yet following normal wear and tear, become unsafe and slip below the minimum requirement of the safety standard.¹⁴⁸ Generally, federal safety standard compliance has been an unsuccessful defense in product liability suits, except in airbag litigation.¹⁴⁹

C. *Airbag Litigation*

Amid the regulatory struggle surrounding the implementation of passive restraint safety standards, plaintiffs' attorneys have brought actions against auto manufacturers by arguing a new variation in design defect product liability. Injured vehicle occupants, or personal representatives on behalf of deceased motorists' estates, have filed lawsuits against vehicle manufacturers for injuries which could have been prevented had airbag systems been installed in the subject vehicles.¹⁵⁰

Typically, in design defect cases, plaintiffs' bring suit claim-

¹⁴² *Id.* at 421.

¹⁴³ *Id.*

¹⁴⁴ Bryant, *Airbag Litigation: Past, Present, and Future*, TRIAL (Feb. 1989) at 32.

¹⁴⁵ GOODMAN *supra* note 111, at 13-14.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ Bryant, *supra* note 144, at 30.

ing both breach of the implied warranty of merchantability and negligence in product design on the part of the automobile manufacturer.¹⁵¹ The factual basis of the case in airbag litigation, however, presents a new wrinkle. The plaintiff's claim asserts that the lack of any airbag or passive restraint system has rendered their vehicle defective and unreasonably dangerous to vehicle occupants.¹⁵²

Although plaintiff's attorneys are often limited in conducting extensive discovery proceedings, evidence is readily available that the "big three" automobile manufacturers in the United States could have installed airbags in their regular production vehicles at a considerably earlier date.¹⁵³ Moreover, statistical evidence gleaned from internal Ford documents indicate roughly 15,000 severe injuries or fatalities could be prevented on an annual basis with mandatory airbag installation.¹⁵⁴

In *Wood v. General Motors* the court declined General Motor's motion for summary judgment preceding review of an express and implied federal preemption analysis.¹⁵⁵ In the express preemption analysis, common law damage awards simply provide compensation for tortious conduct and do not interfere with the operation of FMVSS compliance.¹⁵⁶ Under the implied preemption analysis the court determines the existence of any "irreconcilable conflict between the federal and state regulatory schemes."¹⁵⁷

General Motors contended that a basic conflict existed between federal and state law that precluded them from attaining compliance with both legal standards.¹⁵⁸ The *Wood* court, relying on *Chevron v. Ferebee*¹⁵⁹ ruled that the party liable under state

¹⁵¹ See *Larsen*, 391 F.2d at 497.

¹⁵² WILTON & CAMPBELL, *supra* note 126, at 9.

¹⁵³ BRYANT, *supra* note 144, at 30.

¹⁵⁴ *Id.*

¹⁵⁵ 673 F. Supp. 1108, 1109 (D. Mass. 1987). Patricia Wood, a passenger in a 1976 Chevrolet Blazer that impacted a roadside tree, broke her neck and was rendered quadriplegic. *Id.* Wood's parents claimed the Blazer was defective because of the manufacturer's "failure to install a passive restraint system, specifically the failure to equip the automobile with airbags or automatic seat belts." *Id.*

¹⁵⁶ *Id.* at 1113.

¹⁵⁷ See *Rice v. Norman Williams Co.*, 458 U.S. 654, 659 (1982).

¹⁵⁸ *Wood*, 673 F. Supp. at 1115.

¹⁵⁹ 736 F.2d 1529 (D.C. Cir. 1984). Although the chemical compound paraquat was labelled in accordance with EPA standards, the court held that federal compli-

common law is not forced to alter its conduct.¹⁶⁰ The defendant can "continue to comply with the Federal standard and simultaneously pay the damage award."¹⁶¹

Courts are split on the preemption issue;¹⁶² however, plaintiffs' attorneys, including the Trial Lawyers for Public Justice and the American Trial Lawyers Association, believe that prior settlements and litigation costs have directly contributed to certain manufacturers expediting installation of passive restraint systems.¹⁶³

IV. Recent Legislative Initiatives For Improving Vehicle Safety

Significant progress in the development of safer automobiles can in large measure be attributed to consumer activism, safety conscious legislators, and to NHTSA regulatory action.¹⁶⁴ An estimated 10,000 lives are saved annually in automobile accidents in addition to an incalculable number of injuries prevented as a direct consequence of regulatory standards.¹⁶⁵

Nevertheless, very few motorists or politicians "bear witness to the benefits of auto regulation."¹⁶⁶ Despite NHTSA's substantial contribution in establishing motor vehicle safety standards, the agency is characterized by various legislators and automotive industry watchdog groups as lethargic in refining existing safety

ance did not shield defendant from state tort liability. *Id.* at 1543. In evaluating the congressional intent of pesticide labelling, the court found that federal and state law were to act in conjunction in protecting against accidental poisoning. *Id.*

¹⁶⁰ *Wood*, 673 F. Supp. at 1115.

¹⁶¹ *Id.*

¹⁶² For cases rejecting the preemption defense in airbag litigation, see *Murphy v. Nissan Motor Co.*, 650 F. Supp. 1095 (E.D.N.Y. 1987); *Kitts v. General Motors*, 875 F.2d 787 (D. N.M. 1989); *Pokorny v. Ford Motor Co.*, 714 F. Supp. 739 (E.D. Pa. 1989); *Kolbeck v. General Motors*, 702 F. Supp. 532 (E.D. Pa. 1988); *Garrett v. Ford Motor Co.*, 684 F. Supp. 407 (D. Md. 1987); *Staggs v. Chrysler Corp.*, 678 F. Supp. 270 (N.D. Ga. 1987); *Wattelet v. Toyota Motor Corp.*, 676 F. Supp. 922 (E.D.N.Y. 1987). *Richart v. Ford Motor Co.*, 681 F. Supp. 1462 (D. N.M. 1988). For cases affirming federal preemption defense in airbag litigation, *Surles v. Ford Motor Co.*, 709 F. Supp. 732 (N.D. Tex. 1988); *Vanover v. Ford Motor Co.*, 632 F. Supp. 1095 (E.D. Mo. 1986).

¹⁶³ *Bryant*, *supra* note 144, at 32.

¹⁶⁴ *Claybrook*, *The Hidden Benefits of Regulation: Disclosing the Auto Safety Payoff*, 3 *YALE J. ON REG.* 84 (1985) (Joan Claybrook, former NHTSA Administrator, outlines the agency's efforts to reduce traffic fatalities and injuries).

¹⁶⁵ *Id.*

¹⁶⁶ *Id.* at 88.

standards and unresponsive to development of new standards.¹⁶⁷ The improvement of vehicle safety remains an area where more consistent congressional leadership is also needed. In light of the subsidence of political fervor for industry deregulation, due in large measure to the continuing lessons learned from the Savings & Loan debacle, there may emerge a greater political will to promulgate more stringent vehicle safety regulation, but the chances of this occurring are still unclear.

One of the more sweeping and stringent legislative initiatives seeking revision of FMVSS's came on October 6, 1989 from Representative Sam Gejdensen of Connecticut.¹⁶⁸ The Gejdensen Bill was proposed in order to drastically improve the safety of the Multi-Purpose-Vehicle (MPV).¹⁶⁹ The new MPV class is quickly replacing the station wagon as the family car of choice; it accounted for one-third of the new vehicles sold in 1989.¹⁷⁰ The MPV class consists of minivans and four wheel drive vehicles, popular for their utility, space and cost.¹⁷¹

The present DOT plan for implementation of vital MPV safety standards is based on the following tentative timetable:

¹⁶⁷ Senator Gorton, during debate over the 1989 DOT Reauthorization Act, accused the NHTSA of knowledge of safety inadequacies, particularly in side impact protection, and the lack of NHTSA initiative to resolve them. 135 CONG. REC. 10,038 (1989).

¹⁶⁸ 135 CONG. REC. F3333-02 (1989)(remarks of Rep. Gejdensen).

¹⁶⁹ *Id.*

¹⁷⁰ CENTER FOR AUTO SAFETY, MPV INFORMATIONAL LETTER (Oct. 1990)(available from the Center for Auto Safety, Washington, D.C.)(hereinafter MPV INFORMATIONAL LETTER). The Center for Auto Safety recommended the following station wagons because they offer airbag systems and scored significantly better than MPV's in crashworthiness testing: Audi 100/200; Chevrolet Caprice/Oldsmobile Custom Cruiser/Buick Roadmaster; Ford Crown Victoria/Mercury Grand Marquis; Honda Accord; Ford Taurus/Mercury Sable; Mercedes 300TE; Volvo 240/740/760. *Id.* The following MPV's, according to DOT testing compiled by the Center for Auto Safety, scored in the serious-to-fatal range in 35 mph crash tests: 1989 Toyota Van; 1984 Dodge Caravan/Plymouth Voyager; 1985 & 1988 Volkswagen Vanagon; 1987 Ford Aerostar; 1985, 1988-89 Chevrolet Astro/GMC Safari. *Id.*

¹⁷¹ CONSUMER REPORTS, 1990 BUYING GUIDE 137-47 (1991). The MPV class includes minivans manufactured by: Mitsubishi, Nissan, Toyota, Mazda, Ford, General Motors, Plymouth and Chrysler. *Id.* The MPV class also includes four wheel drive sport utility vehicles: Jeep Cherokee, Suzuki Samurai, Geo Tracker, Ford Bronco II, Ford Explorer, Chevrolet Blazer, Isuzu Trooper, Nissan Pathfinder, and Toyota Four-Runner. *Id.*

FMVSS 108 Center high-mounted stop lamps	- Model Year 1993
FMVSS 202 Front seat head restraints	- Model Year 1992
FMVSS 208 Rear lap/shoulder belts	- Model Year 92/93
FMVSS 208 Passive Restraints (phase-in)	- Model Year 95/96
FMVSS 214 Side impact protection	- Model Year 1993
FMVSS 216 Roof crush resistance	- Model Year 1992 ¹⁷²

The Gejdensen Bill required MPV's to conform to the identical safety standards as passenger cars and shortened the timetable for implementation of certain critical areas of vehicle safety. The areas of gravest safety concern in MPV's included: side impact protection, roll over prevention standards, minimum roof crush resistance, installation of passive restraints and airbags and bumper standards.¹⁷³ The extension of airbag and passive restraint protection to MPV's, along with the aforementioned modifications, attempted to fill a "gaping hole" in motor vehicle safety standards.¹⁷⁴

Another legislative initiative, the Reauthorization Act of 1989, incorporated the majority of the Gejdensen's Bill's proposals.¹⁷⁵ Although the Reauthorization Act assembled important new safety priorities and goals for the NHTSA, the new automotive safety legislation was unsuccessful in securing passage despite support from the Senate Commerce Committee.¹⁷⁶ Nonetheless, the Bill will very likely be proposed in the next session of Congress.¹⁷⁷ The most strident opposition to vehicle safety on the House of Representatives side has commonly come from Commerce Committee Chairman John Dingell of Michigan.¹⁷⁸ Representative Dingell's state, of course, includes major centers of automotive manufacturing.

The 1989 NHTSA Reauthorization Act comprehensively ap-

¹⁷² MPV INFORMATIONAL LETTER, *supra* note 170.

¹⁷³ 135 CONG. REC. F3333 (daily ed. Oct. 6, 1989)(statement of Rep. Gejdensen).

¹⁷⁴ *Id.*

¹⁷⁵ S. 673, 101st Cong., 1st Sess. (1989)[hereinafter Reauthorization Act].

¹⁷⁶ 135 CONG. REC. S10038-01 (daily ed. Aug. 3, 1989)(strongly endorsed in the Senate by Senators Danforth, Hollings, Gorton, and Bryan).

¹⁷⁷ Interview with Clarence Ditlow III, Director, Center for Auto Safety in Washington, D.C. (Nov. 28, 1990).

¹⁷⁸ *Id.*

proached relevant safety issues and effectively fixed parameters and goals for important NHTSA rulemaking in the following areas.

A. *Side Impact Protection*

The amendments to FMVSS 214 would have obligated NHTSA to establish useful new criteria for improvement of occupant safety in side impact accidents within one year.¹⁷⁹ The Act specifically recognized that passenger safety was jeopardized in MPV's under existing safety standards.¹⁸⁰ Furthermore, the side impact protection standards of FMVSS 214 were to be applicable to MPV's.¹⁸¹

The Reauthorization Act stated as general policy that improvements in side impact protection should be a NHTSA priority not only for MPV's but all vehicles.¹⁸² The annual death rate from side impacts in 1988 was reported to have reached 9,000; appreciable deficiencies in side impact protection are well known among safety analysts.¹⁸³ The need for improvements in side impact protection was exemplified by the expert testimony from Calspan safety testing laboratory in *Dawson v. Chrysler*.¹⁸⁴ Dawson, a New Jersey police officer responding to a call, was paralyzed when his squad car skidded sideways into a steel pole.¹⁸⁵ The requisite automotive technology to prevent Officer Dawson's injuries, and thousands of other accident victims like him, was proven to the satisfaction of the court to be available in 1974.¹⁸⁶ Nevertheless, material improvements in side impact protection

¹⁷⁹ S. 673, 101st. Cong., 1st Sess. § 201 (1989).

¹⁸⁰ *Id.* at § 202.

¹⁸¹ *Id.*

¹⁸² 135 CONG. REC. S10038-01 (daily ed. Aug. 3, 1989)(statement of Sen. Danforth emphasizing that the proposed safety standards are not overburdensome to the automobile industry and seek only to provide "basic protection every family deserves").

¹⁸³ *Id.*

¹⁸⁴ 630 F.2d 950 (1980). The Third Circuit Court of Appeals accepted expert testimony confirming the existence of a safer frame design to prevent side impacts: "[A] continuous frame and cross-member would have deflected the patrol car away from the pole after a minimum intrusion into the passenger area and, they declared, Dawson likely would have emerged from the accident with only a slight injury." *Id.* at 954.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.*

have not been forthcoming from NHTSA.¹⁸⁷

B. *Roof Crush Resistance and Rollover Prevention Standards*

Automotive industry knowledge of MPV safety hazards in roll-overs and inadequate roof crush resistance dates back to the early 1970's.¹⁸⁸ The Reauthorization Act compelled NHTSA to reevaluate the whole system of vehicle classification and MPV's will be reevaluated by NHTSA leading to the inclusion of certain MPV's under passenger car safety standards.¹⁸⁹ The safety concerns apparent from the high incidence of roll-overs in MPV's is compounded by the lack of minimum roof crush resistance standards mandatory in passenger cars.¹⁹⁰

The MPV roll-over prevention standard was included due to the propensity of MPV's to roll over during emergency maneuvering and high speed turns. The Reauthorization Act mandates the establishment of a safety standard requiring tangible improvements in vehicle stability to reduce MPV vulnerability to roll-over.¹⁹¹

C. *Installation of Passive Restraints and Airbags*

In addressing the safety benefits of airbag systems in Senate debate, Senator Gorton praised automobile manufacturers for the installation of airbag systems in passenger cars.¹⁹² Senator Gorton commended impressive crash protection statistics achieved by 6,500 airbag equipped Ford Tempos in the federal government fleet.¹⁹³ In line with the appreciable success with airbag systems, the Reauthorization Act required all federal government fleet vehicles purchased in 1991 to be equipped with

¹⁸⁷ NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, FINAL REGULATORY IMPACT ANALYSIS: NEW REQUIREMENTS FOR PASSENGER CARS TO MEET A DYNAMIC SIDE TEST II-3 (Aug. 1990). Side impact protection measures include interior padding and structural modifications as well as improved testing with new side impact test dummies. *Id.*

¹⁸⁸ See *Brandenburger v. Toyota*, 513 P.2d 268, 269 (Mont. 1973) (awarding plaintiff's estate \$125,000 for injuries resulting from a roll-over accident in a Toyota Land Cruiser MPV).

¹⁸⁹ S. 673, 101st. Cong., 1st Sess. § 304 (1989).

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

¹⁹² 135 CONG. REC. S10038-01 (daily ed. Aug. 3, 1989)(statement of Sen. Gorton).

¹⁹³ *Id.*

airbag restraint systems.¹⁹⁴

D. *Bumper Standards*

New bumper safety standards were limited in scope. The NHTSA was to conduct rulemaking to institute bumper labelling; the label would be designed to inform consumers as to the collision impact sustainable by the bumper system at specific impact speeds.¹⁹⁵ Compliance with the labelling requirement could be fulfilled by complete disclosure of the requisite damage criteria information pursuant to the Automobile Disclosure Act.¹⁹⁶ In addition, the Reauthorization Act called for a return to the 1982 five m.p.h. bumper crashworthiness standard from the present two and one-half m.p.h. standard.¹⁹⁷

E. *Rear Seatbelts*

The need for the installation of rear seat lap and shoulder safety belts has been made dramatically clear after several collisions in which rear seat occupants were severely injured as a result of wearing lap belts.¹⁹⁸ The Reauthorization Act mandated lap and shoulder belts in all passenger cars, convertible passenger vehicles and MPV's.¹⁹⁹ Funds were also to be allocated to alert the public to the availability of retrofit kits accommodating installation of lap and shoulder belts.²⁰⁰

F. *New Safety Programs Proposed in the Reauthorization Act*

The Reauthorization Act specifically provided for several other beneficial safety initiatives for NHTSA implementation. First, the act mandates safety improvements in FMVSS 213 regulating "child booster seats."²⁰¹ Second, the development of a crashworthiness rating system available to consumers prior to purchasing a new vehicle so that they can reliably evaluate the

¹⁹⁴ S. 673, 101st. Cong., 1st Sess. § 308 (1989).

¹⁹⁵ *Id.* at § 102A.

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ Center For Auto Safety, *Are Rear Lap Belts Hazardous to Your Health?*, LEMON TIMES Vol. 9, No. 4, 1988, at 1.

¹⁹⁹ S. 673, 101st. Cong., 1st Sess. § 305 (1989).

²⁰⁰ *Id.*

²⁰¹ *Id.* at § 307.

overall safety of that vehicle.²⁰² The rating system would provide evaluations of safety devices used in normal driving conditions.²⁰³ The overall feasibility of the rating system, to be developed along with the National Academy of Sciences, is yet undetermined.²⁰⁴ Third, establishment of a safety standard to reduce pedestrian injuries, specifically from certain vehicle components.²⁰⁵ Fourth, in order to decrease traffic accidents involving handicapped drivers the Reauthorization Act obligated all states to issue license plates and stickers for front windshields with the international symbol for the handicapped.²⁰⁶

V. Conclusion

Development of automotive safety technology is a burgeoning new market in the automotive industry.²⁰⁷ High technology corporations have already unveiled impressive new safety devices. Ford Motor Co. has developed a "collision avoidance" system, in which front and rear radar systems warn of a possible collision, alerting the driver to any possible impact.²⁰⁸ Nissan Motor Co. has begun production of a "Heads Up Display" (HUD).²⁰⁹ The HUD projects instrument readings to "float on the front of the hood" with an image enhancement feature to let the driver see through fog.²¹⁰

In the near future the availability of these new high technology safety devices will likely be limited to the most expensive vehicles on the market.²¹¹ More importantly, vehicle consumers are beginning to demand not only speed and style, but safety. Consequently, NHTSA, Congress, and the automotive industry should make more rapid advances in those fundamental vehicle safety

²⁰² *Id.* § 202.

²⁰³ *Id.*

²⁰⁴ *Id.*

²⁰⁵ 135 CONG. REC. S10,038-01 (daily ed. Aug. 3, 1989)(statement of Sen. Danforth).

²⁰⁶ S. 673, 101st. Cong., 1st Sess. § 303 (1989).

²⁰⁷ Marbach & Brandt, *Smart Cars*, BUSINESS WEEK, June 18, 1988, at 69.

²⁰⁸ *Id.* at 68.

²⁰⁹ *Id.*

²¹⁰ *Id.* at 69. The automotive industry has continued developing improved traction control systems, tire sensors, and adaptive lighting systems. *Id.*

²¹¹ *Id.* at 70.

improvements that are necessary to decrease traffic injuries and fatalities.

Daniel D. Cutler