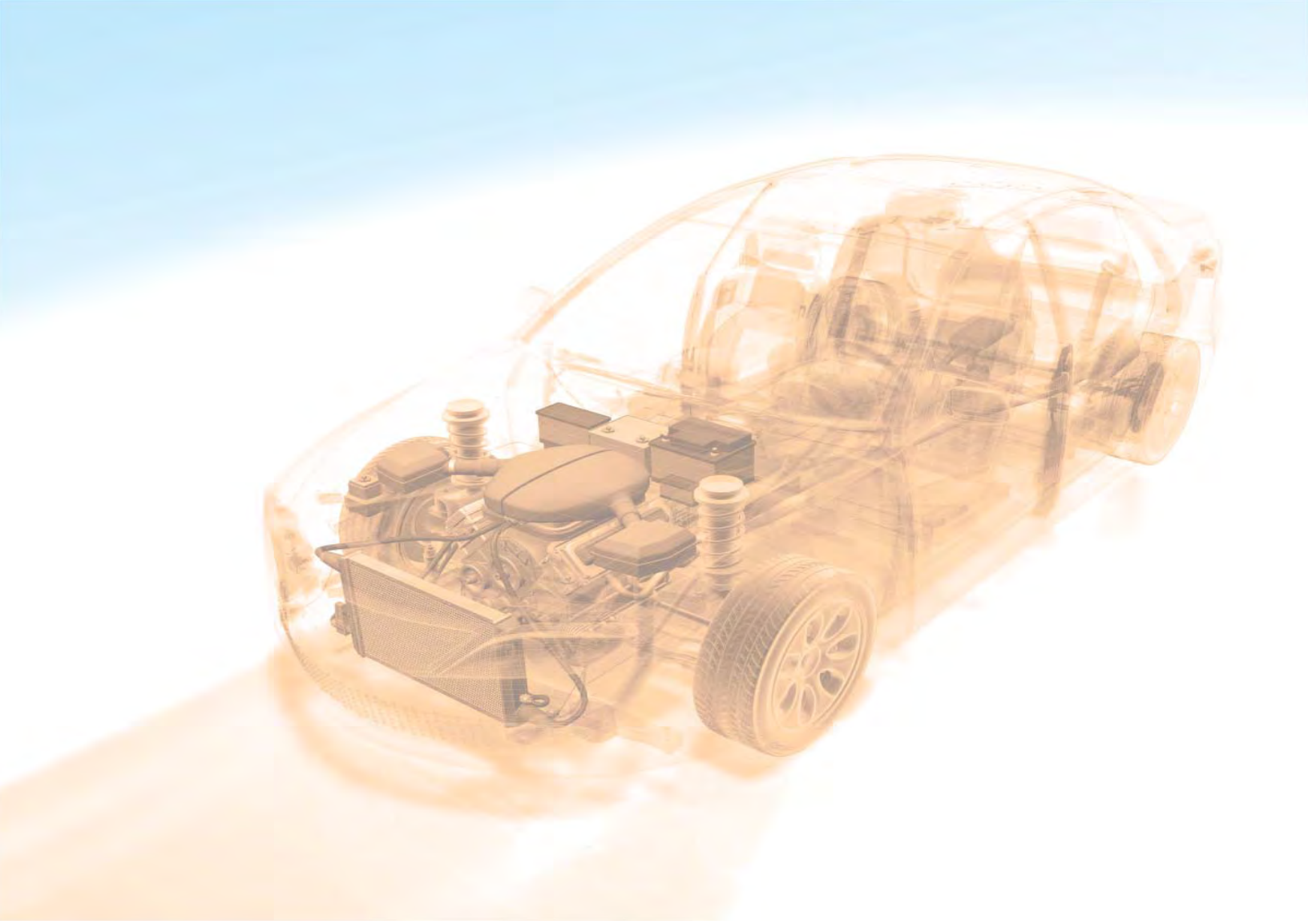

Driven to Safety:

How Litigation Spurred Auto Safety Innovations

April 2010

AMERICAN ASSOCIATION for JUSTICE
Formerly the Association of Trial Lawyers of America (ATLA®)

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Introduction

In the wake of Toyota's sudden acceleration scandal, automobile safety is once again a hot-button issue. After internal documents showed Toyota knew about potential defects, hid them from regulators, and even bragged about saving money from limiting its recalls, Toyota received the largest fine ever levied against an auto manufacturer.

After 50 deaths and 8.5 million recalled cars, this saga is yet another example of regulation as an incomplete safeguard and manufacturers that put profits over safety. Unfortunately, this scenario has been repeating itself for decades.

In 1964 in Michigan, David Larsen was driving a Chevy Corvair when he was involved in a head-on collision. The Corvair's steering mechanism was thrust backwards, ramming the steering wheel into Larsen's head. A court would hear that the Corvair's steering mechanism consisted of a solid shaft that began less than three inches from the front of the car's tires. The unabsorbed forces of a head-on crash were transmitted directly towards the driver's head. [1]

Up until the 1960s, car manufacturers were only held liable for defects in construction that resulted in accidents and had largely avoided responsibility for defects in design.[2] Even when a design defect caused a car to burst into flames, manufacturers succeeded in persuading courts that "no duty exists to make an automobile fireproof."[3]

Manufacturers had a large body of knowledge proving that car design – particularly in regard to steering columns, dashboards, windshields and passenger restraints – was extremely unsafe to car occupants, but did nothing about it. Style was valued over safety. The cost of largely unnecessary styling changes amounted to, at the time, $700 per car, yet the average safety expenditure amounted to just 23 cents.[4] For instance, many manufacturers used chrome enamel dashboards for their aesthetic value, despite evidence that the dashboards commonly reflected sunlight into drivers' eyes and blinded them.

In the 1960s, court cases began highlighting the dangers of car design and the willful negligence of manufacturers in designing cars that they knew to be unsafe.[5] The Larsen case became a landmark decision. General Motors claimed they had no duty to design an automobile that would protect the occupant if an accident occurred. The court disagreed and thus sent a message that car manufacturers had to change their ways.[6]

Since then the civil justice system has worked hand-in-hand with regulation to protect Americans, while spurring generations of safety innovations.

Litigation will ultimately play a key role in identifying what went wrong with Toyota. These findings will aid regulators and legislators in protecting the American public in the future. By holding manufacturers accountable, the civil justice system will continue to spur safety innovations, as it has done for half a century.

Gas Tanks

Barely a decade after Larsen, litigation over the Ford Pinto sent another message to the automobile industry. The Pinto became notorious after court cases highlighted a faulty design that left the gas tank unprotected and resulted in explosion, even in minor rear-end accidents. Internal documents revealed Ford knew of the problem and could fix it for as little as $11 per car, but calculated that it would be more profitable to sell the car as-is and let injuries occur. In *Grimshaw v. Ford Motor Company* (1981), a California appeals court awarded $125 million in punitive damages (later reduced) to the victims of a Pinto explosion.

The Pinto's design met all government standards of the time. Had compliance with federal standards been a complete defense, as many auto industry lobbyists have proposed over the years, Ford could not have been held responsible for the many burn victims that the company itself anticipated. As it was, the litigation spurred the adoption of requirements for fuel tank performance in rear-end collisions that had not been in place before. [7]

Other similar cases, such as the General Motors "side saddle" gas tank and the Chevy Malibu, highlighted the dangers of defective gas tank design. In the case of the Malibu, Chevy spurned fixing the problem for just $8.40 per car because it calculated that paying an anticipated 500 victims of fatal accidents would cost only $2.40 per car – in other words it would be cheaper to let people burn than to fix the problem. As a result of such cases, gas tanks are now universally located within cars' rigid frames. According to Logan Robinson, a University of Detroit law professor and former general counsel for Chrysler, litigation caused manufacturers to redesign the placement of gas tanks, and "now, most all cars are designed to take at least a 50-mph hit."[8]

Side Impact Design

In 1974, Richard Dawson, a police officer with the Pennsauken Police Department in New Jersey, lost control of his Dodge Monaco while driving to respond to a burglar alarm. The side of the car struck an unyielding steel pole. Though eyewitnesses reported the car hit the pole at less than 26 miles per hour, the pole ripped through the car and crushed Dawson. He was left quadriplegic with no control of his body from the neck down and in need of constant medical care.

During the ensuing court case, Dawson's attorneys argued that the vehicle design was defective because it was unable to withstand side impacts at even relatively low speeds. The vehicle had a non-continuous frame, and between its front and rear frame portions was a 17-inch gap. Evidence showed the steel pole slid along the car body until it reached the gap, and then tore through the vehicle, smashing Dawson. Had the vehicle had a full continuous frame, it would have protected the car from being cut in half by the pole.

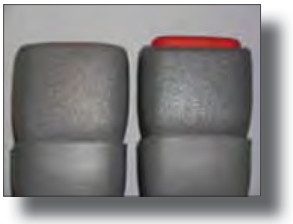
Chrysler argued that it had no duty to produce a "crashproof" vehicle, and furthermore, had met all existing regulatory standards. They also pointed out that a full continuous frame would add $300 to the price of the vehicle.

The court disagreed and held Chrysler responsible for the defective design. Car manufacturers now routinely build cars with stiff, strong unibody designs that offer more protection to occupants in a crash.[9]

Seat Belts

In 1996, Bart Moran's 1997 Dodge Minivan was involved in a low-speed rollover in Corpus Christi, Texas. Moran's seat belt unlatched and he was thrown from the van, suffering a broken neck and massive head injuries. He died the next day, leaving behind a wife and 8-month-old daughter. Court cases highlighting the dangers of cars with inferior or no seat belts spurred major safety improvements, with both seat belts and seat backs redesigned in response to litigation.

One example was the Gen 3 seat belt installed in more than 14 million DaimlerChrysler cars and minivans, including the one Bart Moran was driving. The Gen 3 had a button that protruded over the button cover, allowing it to be accidentally depressed by a flailing arm or loose object. At least 15 deaths and 18 serious injuries were caused by its malfunction. Even after Chrysler's engineers identified the problem and recommended a newer, safer seat belt, the car manufacturer continued to use the Gen 3 in many models, often in the back seat.



A comparison of the Gen 2 and Gen 3 seat belt buttons. The Gen 3 had a button that protruded from the cover.

In 2000, Bart Moran's widow Yvonne won a $6.7 million court award from DaimlerChrysler and the seatbelt manufacturer, which helped force the car company to install safer seat belts throughout all its cars.[10] Other cases highlighted auto manufacturers' failure to install rear seat belts. Car companies had installed rear three-point seat belts in the cars they manufactured for foreign markets, but domestically they stuck to lap seat belts in order to save $12 per car. Again, while regulators refused to investigate or institute rules regarding rear seat belts, car manufacturers did begin installing three-point rear seat belts after being held accountable in court.[11]

Roof Crush

On September 11, 1997, Penny Shipler, a 29-year-old single mother from Nebraska, was seriously injured after the Chevy Blazer she was riding in was involved in a rollover accident. The roof of the Blazer collapsed more than eight inches, crushing her spine and paralyzing her from the neck down.[12]

As far back as the 1960s, car manufacturers knew that the roof strength of their cars was inadequate. After one case, in which a passenger was crushed when the roof of their Buick collapsed, the court held that "it is the obligation of automobile manufacturers to provide more than a movable platform capable of transporting passengers from one point to another."[13]

In 1971, the National Highway Safety Bureau (the precursor to the National Highway Traffic Safety Administration) began to develop its first safety standards regulating roof strength to ensure vehicles could withstand pressure on their roofs when involved in a rollover accident. The automobile industry lobbied the agency to significantly weaken the new roof crush test. They were motivated by the fact that they knew the roof strength of their cars was already a major safety issue. In the case of General Motors, five out of six car models failed their internal crash tests, a fact the manufacturer covered up for more than 30 years. Manufacturers opposed increasing roof strength standards for the next three decades, not only because they knew many current cars would fail crash tests, but also because they did not want the added cost of stronger roofs in future productions. Meanwhile, the death toll from rollovers reached an estimated 7,000 per year.[14]

For Shipler, General Motors' refusal to accept responsibility meant she and her young son were forced to live on $800 a

month in Social Security and food stamps, while her medical bills accumulated into the millions. In 2006, nine years after her accident, a court awarded her $18.6 million, one of the largest court judgments linking vehicle roof strength to severe injuries in rollovers.

NHTSA recently approved a vastly strengthened rule, which will go into effect in 2012. As Shipler herself said, "I hope my case will be a reason for GM to improve the roofs of these vehicles so what happened to me doesn't continue to happen."

Tires

On a beautiful Saturday in March 2000, Donna Bailey, a 43-year-old mother of two, traveled with two friends to a climbing expedition in Texas in a Ford Explorer equipped with Firestone tires. One of the tires suddenly separated, and the Explorer skidded and rolled. Despite wearing her seatbelt, Bailey was left paralyzed from the neck down.[15]

Defective Firestone tires on Ford Explorers took the lives of at least 271 people and seriously injured many more before the companies issued the largest tire recall in history. Internal company documents would later show that the two corporations had known of the deadly tire separation and associated rollover problems for years. Firestone knew as early as 1997 that there were serious problems with its tires. Vehicle owners began sending complaints of tire failures at a rate 100 times greater than normal. Firestone employees would later state that they punctured bubbles in tires to conceal flaws and that inspection of finished tires was nonexistent.

After a series of lawsuits highlighted the issue, the National Highway Traffic Safety Administration (NHTSA) opened an investigation into the tread separations. In August 2000, Firestone recalled 6.5 million tires.

The Ford/Firestone case is only the latest and most recognizable instance of a manufacturer knowingly producing defective tires. Michelin, Cooper and other manufacturers have manufactured unsafe tires and taken corrective actions as a result of litigation. Even Firestone had tried to get away with production of defective tires before its most recent troubles. In 1971, the company debuted the Firestone 500 radial, which was prone to suffer tread separation at high speeds. By 1973, Firestone engineers had identified the problem and the dangers associated with it; however, the company continued to sell what would turn out to be nearly 24 million tires, insisting that there were no defects. At one point Firestone recorded that over 10 percent of tires were suffering separation. Litigation on behalf of victims injured after tire separations began to mount. By 1978, the company was forced to admit it faced more than 250 lawsuits, and the company agreed to recall the tires.[16]

Electronic Stability Control

Electronic stability control (ESC) was a safety innovation prompted in part by litigation surrounding the increasingly popular, but inherently unstable SUVs.[17] As SUVs became popular, their lack of stability became more apparent, their design made them more prone to roll over than regular cars.

Certain models, such as the Ford Bronco II and its successor, the Explorer, were particularly unstable. In 1989, one year before the release of the Explorer, Ford executives tried to stop a *Consumer Reports* article critical of the Bronco II. Jerry Sloane of Ford's public affairs office wrote in one internal memo, "We think going in we were in deep trouble regarding our rollover

rates... Our rollover rate is three times higher than the Chevy S-10 Blazer... [T]he [Fatal Accident Reporting Service (FARS)] data put us in a bad light... We think, however, that we have clouded their minds."[18]

One result of the Ford/Firestone and other SUV litigation was an increased emphasis on the development of electronic stability control. ESC incorporates yaw (rotation around the vertical axis) control into anti-lock braking systems. When a driver loses control, ESC applies brakes to each wheel individually to correct skids and bring the car back under control.[19]

Door Latches

In 2001, Deborah Seliner was driving her 1997 Ford pickup along a Texas highway when a rear tire blew, forcing her off the road and causing the truck to rollover. Seliner was wearing a seat belt but was ejected from the truck because the driver's side door came open. She was paralyzed from the chest down and confined to a wheelchair for life.[20]

Ford's problem with doors unexpectedly opening had been happening since at least 1997. By 2000, Ford had traced the problem to defective springs in its "paddle-style" door handles, affecting more than four million vehicles. On March 6, 2000, Ford's own engineers recommended the cars be recalled and the door latches redesigned. The recommendation was passed onto Ford's Field Review Committee, the executive body that ordered recalls. The committee agreed with the engineers and plans for a recall were made. Then a few days later, the recall was cancelled. Instead, Ford found an alternative and little-used crash test that it knew the handles would likely pass.[21]

Inevitably, people like Deborah Seliner were injured when the doors opened during accidents. As a result of litigation on behalf of victims, car manufacturers began using recessed door handles that were less likely to cause an unintended door opening.[22]

Ford's strategy mirrored that of other automobile manufacturers in the past. Between 1978 and 1987, GM produced cars with so-called "Type 3" door handles. GM's own engineers recommended recalling the cars to fix the doors, but with 30 million affected cars on the road and an estimated cost of nearly $1 billion, GM decided to leave them as they were and instead secretly settle cases for as long as possible until the statute of limitations ran out. Hundreds of people were killed, until a $150 million verdict in Georgia in 1996 highlighted the problem to the public and regulators.[23]

Illusory Park

Kim Golden parked her 1997 Dodge Caravan and got out to speak with a friend, leaving her 4-year-old daughter in the car. Moments later the van began to roll away with her daughter inside. Golden chased after the van and grabbed a door in an effort to stop it. She was knocked down and crushed under a wheel. She died, five months pregnant with twins.[24]

In the 1970s and 80s, Chrysler and Ford produced cars with defective transmission designs. This defect produced an "illusory park" position, giving the driver the impression that the car was secured when in fact it was not. Vibration or slamming of a car door could cause the car's transmission to slip out of the "park" position and into reverse gear. At least 90 injuries and deaths were reported as a result of this defect.

A "smoking gun" interoffice memo discovered during litigation established that Ford engineers had been aware of the "illusory park" problem since 1971 but had taken no action to correct it. The jury found the transmission design defective and, critically, that Ford had failed to give drivers adequate warnings of the problem. Ford finally eliminated the "illusory park" position hazard after it lost two lawsuits filed by people injured as a result of the design. [25]

However, the same problem reappeared in the 1990s. Reports began to circulate about rollaway problems with Chrysler's Minivans and Dodge Dakotas after the vehicles would appear to slip from the park position. For years, Chrysler denied there was a problem and then blamed it on driver error.

Privately, they knew the problem could be fixed but decided not to take action. In 1994, Chrysler safety managers urgently recommended installing brake shift interlock – a system that requires drivers to depress the brake pedal in order to shift out of park – in its minivans. Chrysler executives rejected the recommendation, saying if they installed it on the minivans, they would have to install it on all Chrysler cars, which would be too expensive. The cost was estimated at $9 per car.[26]

Eventually in 2000, ten years after their first production, Chrysler recalled more than 150,000 Dodge Dakotas. As of 2001, Chrysler installed brake shift interlock on all its minivans.

Just months later, NHTSA began investigating another Chrysler car, the Jeep Cherokee, which had the same transmission as the Dakota, after a series of lawsuits were filed on behalf of victims. Over 700 alleged incidences of unintended shifting were reported. Again, Chrysler blamed driver error until one of its engineers admitted in depositions that it was possible to place the gear shifter so it appeared to be in park but was not actually secure. A door slamming or an air conditioner turning on could be enough to shift the car into gear. NHTSA investigators were able to duplicate the problem, and Chrysler finally relented and recalled 1.6 million Jeeps.[27]

Air Bags

In 1991, Rebecca Tebbetts, a 19-year-old college student from New Hampshire, was killed after her 1988 Ford Escort slipped down an embankment and hit a tree. The car was not equipped with an air bag. Tebbetts' mother filed a lawsuit against Ford, one of more than 100 alleging that automakers knew that the absence of air bags resulted in thousands of unnecessary deaths every year.[28]

Automobile manufacturers have been developing air bag technology since at least the 1950s and testing it in cars since at least the late 1960s.[29] General Motors was even offering air bags as an option on certain model cars by the mid-1970s.[30] Yet by 1988, only two percent of new cars were equipped with air bags.[31]

Though the auto industry was aware of the safety benefits of air bags, it was remarkably slow in marketing the technology. General Motors, for instance, stopped its air bag development though it had once been a leader in air bag research and previously said it could equip all its cars.[32] In comments filed with NHTSA, GM told the regulator that it planned to abandon projections on the number of air bag-equipped cars it would manufacture. GM cited NHTSA's plans to closely monitor "automatic restraint system malfunctions" saying the company did "not believe that automatic restraint system malfunctions will be sufficiently prevalent to warrant such attention."[33] This decision came despite the company's own market research on consumer attitudes toward air bags, which showed that as early as 1971, between 40 and 50 percent of customers were willing to pay extra for air bags.[34] The *Wall Street Journal* even reported that GM refused to promote airbags and, "instead,

the company and its dealers actively discouraged sales."[35]

Courts, however, found that the manufacturers knew full well that the absence of air bags made cars less safe, and held them responsible for the consequences. Manufacturers either lost in court or were forced to settle, and until eventually, manufacturers began installing air bags as standard.[36]

Power Windows

In June 2004, a Dallas-area mother stopped her Ford F-150 to talk to her husband through the driver's side window. Her 3-year-old daughter, Yencey Ayala, leaned out of the passenger's side window and accidentally hit the rocker switch, causing the window to close on her neck. Though the girl's parents noticed moments later, it was too late. The girl died from strangulation.[37]

As power windows became more common, so too did instances of children being accidentally strangled. In 2004, seven children died within the space of three months. The safety issue with power windows involved the "rocker" style switch, which can inadvertently close the windows if a child leans on it. Manufacturers were well aware of the issue, and the fix was relatively simple and inexpensive. In response to regulations in other countries, European and Asian cars already used a safer switch – one that must be pulled upward to raise a window – and so did many American manufacturers on cars they offered to foreign markets. Yet incredibly, American manufacturers did not install the safer switches on domestic cars, since NHTSA had no rules governing power window safety.

At one point a Ford spokesperson defended the manufacturer by saying, "there's only so much automakers can do to prevent these tragedies. At some point the parents have a responsibility to make sure children are supervised."[38]

Seats

In 1996, Kevin Gleason strapped his five-year-old daughter into the back seat of his Buick Century. He then sat in the passenger seat in front of her. When their car was struck from behind by a pickup going less than 25 miles per hour, Gleason's seat collapsed backwards and killed his daughter.[39]

Safety engineer Mark Pozzi described the design of many seats as "probably among the most egregious, widespread safety defects to be found." Both manufacturers and regulators have long known that seats not built to withstand accidents can cause serious or even fatal injuries for passengers in cars. Engineers have been able to design seats that both provide protection to the seat occupant and withstand collapsing onto other occupants. GM engineers admitted that seats costing just $1 more could reduce injury levels by up to 90 percent. Yet because NHTSA regulations do not require such seats, many manufacturers did not bother installing them. In 1996, for instance, Chrysler Sebrings were produced with seats that could withstand 3,300 pounds of force, yet the next year the company sold Dodge Rams with seats that could only take 605 pounds of force.

As a result of lawsuits highlighting the issue, seats are engineered to be stronger and with added safety innovations.[40]

Conclusion

Some would say that automobile safety is the sole responsibility of federal regulators. Others say that not even regulators should address safety, and instead it should be left to the free market to protect consumers.

In fact, neither regulation nor the market can succeed in protecting Americans alone. The slow-moving nature and political vulnerability of federal rules, coupled with the revolving door relationship between the car manufacturers and the agencies, leaves regulation as an incomplete protection. The market, meanwhile, can only dictate safer vehicles if the consumer's desire for a safe car is matched by honest information about their relative safety merits, which is not easy to come by when manufacturers often cover up their vehicle's defects.

Rather, federal safety standards work in conjunction with the civil justice system as a two-pronged approach to protection, which in turn spurs safety innovations in the market. Since the 1960s, the civil justice system has worked to make Americans safer. Design defect litigation has enforced safety standards, revealed previously concealed defects and regulatory weaknesses, and deterred manufacturers from cutting corners on safety for the sake of greater profits.

The civil justice system is already beginning to play a key part in holding Toyota accountable. However, this accountability will do more than just secure restitution for victims of defective Toyotas. If history is any judge, the litigation will inevitably force Toyota to fix the problem in the future. While new laws or regulations may take months or years to enact, highlighting the problem in the courtroom immediately puts executives on notice that the American people will not accept such negligent behavior. Time and again, this has forced manufacturers to choose safety innovations over their cost-saving instincts, and likely will again.

Timeline of Key Automobile Litigation

1916 *MacPherson v. Buick Motor Co.*, 217 N.Y. 382, 111 N.E. 1050, N.Y. 1916.

Donald MacPherson was injured when the wooden spokes of one of the wheels on his 1920 Buick Runabout crumbled, causing the car to collapse and ejecting him. Judge Benjamin Cardozo, in a ruling that has often been referred to as the origin of product liability, stated, "If the nature of a thing is such that it is reasonably certain to place life and limb in peril when negligently made, it is then a thing of danger. Its nature gives warning of the consequence to be expected. If to the element of danger there is added knowledge that the thing will be used by persons other than the purchaser, and used without new tests, then, irrespective of contract, the manufacturer of this thing of danger is under a duty to make it carefully."

1968 *Larsen v. General Motors Corp.*, 391 F.2d 495, 8th Cir., 1968.

David Larsen was driving a Chevy Corvair when he was involved in a head-on collision that rammed the Corvair's steering mechanism into his head. General Motors claimed it had no duty to design an automobile that would protect the occupant in an accident. In what would become a landmark decision, the court disagreed and thus sent a message that car manufacturers had to change their ways.

1969 *Dyson v. General Motors Corp.*, 298 F.Supp. 1064, D.C.Pa., 1969.

When a 1965 Buick Elektra rolled over, the right side of its roof collapsed, severely injuring an occupant. The court held, "[I]t is the obligation of an automobile manufacturer to provide more than merely a movable platform capable of transporting passengers from one point to another. The passengers must be provided a reasonably safe container within which to make the journey. The roof is a part of such container...."

1978 *Fox v. Ford Motor Co.*, 575 F.2d 774, C.A.Wyo., 1978.

A Wyoming court held Ford liable for the deaths of two women riding in the back of a Thunderbird during a low-speed, head-on collision. The two passengers in the front seats survived. The two women in the rear seats, wives of the men in front, both died. A court found that the rear seats were improperly designed: the front seats were not cushioned in anticipation of a rear occupant striking them and the seat belts were not designed to prevent passengers jackknifing forward.

1981 *Grimshaw v. Ford Motor Co.*, 119 Cal.App.3d 757, 174 Cal.Rptr. 348, Cal.App. 4 Dist., 1981.

Punitive damages were awarded against Ford after a court found that the company knew its Ford Pinto was susceptible to deadly fires and explosions because of a defective design that left the gas tank exposed in rear-end collisions.

1981 *Dawson v. Chrysler Corp.*, 630 F.2d 950, 3d Cir., 1980, cert. denied, 450 U.S. 959, 1981.

Chrysler was held liable after a police officer was rendered quadriplegic when his car hit a steel pole side-on and was ripped in half. The court held that the Chrysler's divided frame design was defective.

1981 *Leichtamer v. American Motors Corp.*, 67 Ohio St.2d 456, 424 N.E.2d 568, Ohio, 1981.
Punitive damages were awarded against American Motors Corp, after one of its Jeeps, marketed as suitable for off-road and hilly conditions, rolled over during a low-speed hill descent causing its roll bar to crush the occupants.

1981 *Dorsey v. Honda Motor Co. Ltd.*, 655 F.2d 650, C.A.Fla., 1981.
The first car sold in America by Honda was the diminutive AN 600. Honda marketed it as a low-price, economical car. Glen Dorsey purchased one in 1972. When involved in a low speed collision, Dorsey was seriously injured and left with a massive, permanent brain injury. At trial it was revealed that Honda knew the car was extremely vulnerable to collapsing upon impact, but had decided not to strengthen it for fear of reducing its economical performance.

1982 *Hasson v. Ford Motor Co.*, 32 Cal.3d 388, 650 P.2d 1171, Cal.,1982.
Ford's 1966 Lincoln Continental had defective brakes, a fact which the company covered up so as not to damage the Continental's "service-free" reputation. In 1970, 19-year-old James Hasson suffered serious injuries, including a fractured skull and extensive brain damage, when the brakes failed on his Continental. Ford fought the case for he next 12 years until eventually Hasson was granted compensation.

2004 *Seliner v. Ford Motor Co.*, No. 2002-30454, Tex, Harris County Dist. Ct., 2004.
In 2001, Deborah Seliner's 1997 Ford pickup blew a tire along a Texas highway and rolled over. Seliner was wearing a seat belt but was ejected from the truck because the driver's side door came open. Internal documents from this and other similar cases revealed that Ford was aware the door handles were defective and were prone to opening in accidents, but chose to cover up the problem. Seliner was paralyzed from the chest down and confined to a wheelchair for life.

2006 *Shipler v. General Motors Corp.*, 271 Neb. 194, 710 N.W.2d 807, 2006.
Penny Shipler, a 29-year-old single mother from Nebraska, was paralyzed after the roof of the Chevy Blazer she was riding in collapsed during a rollover accident. In 2006, nine years after her accident, a court awarded her $18.6 million, one of the largest court judgments linking vehicle roof-strength to severe injuries in rollovers. Shipler said of the verdict, "I hope my case will be a reason for GM to improve the roofs of these vehicles so what happened to me doesn't continue to happen."

2007 *AlliedSignal, Inc. v. Moran*, 231 S.W.3d 16, Tex.App.-Corpus Christi, 2007.
In 1996, Bart Moran's 1997 Dodge Minivan was involved in a low speed rollover in Corpus Christi, Texas. Moran's seat belt unlatched and he was thrown from the van, suffering a broken neck and massive head injuries. He died the next day, leaving behind a wife and 8-month-old daughter. The court heard that the minivan's "Gen 3" belt latch was defective and could unlatch in an accident, a fact that Chrylser's engineers had already identified.

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[7] *Supra* note 5, at 823.

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[13] *Dyson v. General Motors Corp.*, 298 F.Supp. 1064, E.D.Pa.,1969.

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[26] *Supra* note 24.

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[28] David Stout, *Air-Bag Ruling in Fatal Crash Could Influence Other Cases*, New York Times, September 20, 1995; *Tebbetts v. Ford Motor Co.*, 140 N.H. 203, 665 A.2d 345, N.H.,1995. The United States Supreme Court subsequently turned down Ford's appeal, but in 1997, six years after the original accident, Ford succeeding in getting a favorable decision. Nevertheless, the Tebbetts case, and others like it, had already both highlighted the issue and spurred manufacturers to adopt airbags more comprehensively.

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[33] *GM's Automatic Restraints: Puzzling Pattern, The Highway Loss Reduction Status Report*, Insurance Institute for Highway Safety, March 26, 1980.

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[35] *Congressman Charges Air Bag Data 'Supressed,'* The Highway Loss Reduction Status Report, Insurance Institute for Highway Safety, December 21, 1979.

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[37] AP, *Tot dies after her neck becomes stuck in car's power window*, June 8, 2004.

[38] Greg Schneider, *Advocates Say Technology Exists to Prevent Accidents*, Washington Post, June 24, 2004.

[39] *Are car seats safe?* CBS News, October 27, 2000.

[40] Jeff Plungis, *$106 million judgment against Chrysler and new safety studies intensify the debate over federal standards*, Detroit News, April 1, 2005; *Seat Failures & Occupant Restraints*, SafetyForum.com, http://www.safetyforum.com/seatfailures/; Nicholas Perrone, *Seatback Failures in Rear Impacts Resulting in Continuous Paralyzing Injuries in Chrysler and GM Vehicles*, Center for Auto Safety, http://www.autosafety.org/general-motors-seat-back-collapse-litigation-0.

What Would Cars Be Like Without the Civil Justice System?

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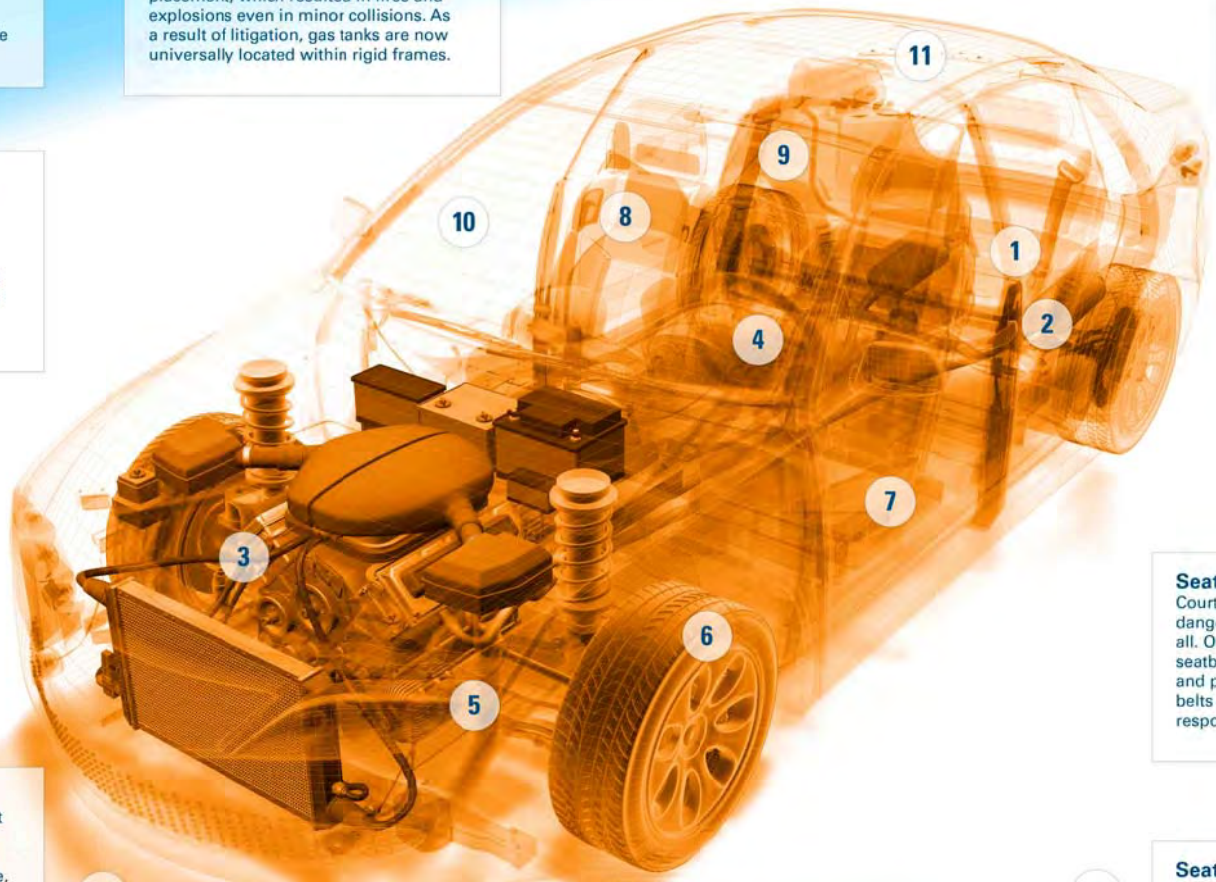

2

Door Latches
Ford's own engineers identified the problem with its "paddle-style" handles, which allowed the doors to accidentally open in collisions. But rather than fix the design, Ford covered up the problem through red tape, until held accountable in court.

1

Gas Tanks
Several car manufacturers, including GM and Ford, designed defective gas tank placement, which resulted in fires and explosions even in minor collisions. As a result of litigation, gas tanks are now universally located within rigid frames.

11

Roof Crush
Vehicle manufacturers, particularly makers of SUVs, had long known roof strength was a critical weakness during rollovers. Without adequate regulatory standards, it was only litigation that forced manufacturers to begin strengthening roofs.

3

Electronic Stability Control
The popularity of SUVs eventually brought to light the stability problems of certain models. Ford's Explorer, built on the already troubled Bronco II frame, experienced a rollover rate more than twice that of other SUVs. One result of litigation on SUV rollovers was an increased emphasis on the development of electronic stability control.

10

Power Windows
As power windows became more common, so did deaths associated with them. Children were especially vulnerable through accidental depression of rocker-style window switches. The inexpensive solution, a lift-up style switch, was ignored by several manufacturers in order to cut costs, but litigation eventually forced universal acceptance of the safer switches.

4

Air Bags
Auto manufacturers have been developing air bag technology since the 1950s, yet were extremely slow in installing it. By 1988, only two percent of new cars came equipped with air bags. Courts found that manufacturers knew full well their cars were safer with air bags and that many lives could have been saved. Eventually, manufacturers were forced to install air bags in all cars.

9

Seat Belts
Court cases went a long way in highlighting the dangers of inferior seat belts, or no seat belts at all. One example was Chrysler's defective Gen 3 seatbelt, installed in more than 14 million cars and proven to unlatch in accidents. Both seat belts and seats themselves were redesigned in response to litigation.

5

Illusory Park
Ford and Chrysler were two manufacturers that experienced systematic problems with transmissions that slipped out of park and allowed their "parked" cars to roll away. In one instance, a pregnant woman was killed after trying to save her four-year-old daughter in a parked minivan that rolled away. Ford eliminated the problem after being held responsible twice in court. Chrysler ignored the problem against its own engineers' recommendations, until finally litigation and regulatory investigations forced them to recall over a million affected vehicles.

6

Tires
Tire manufacturers from Firestone to Goodyear tried to cover up problems with defective tires and have been held accountable in the courts. Firestone's defective tires caused 271 deaths, and the resulting litigation brought tires and their manufacturers under increased scrutiny.

7

Side Impact Protection
When a police officer was left paralyzed by a low-speed, side-impact collision, a court held that the absence of side protection was a design defect. Now all cars are designed with rigid side-impact protection.

8

Seats
Safety engineers call the prevalence of weakened seats the "most egregious, widespread defect to be found." Weak seats can collapse in even low-speed impacts and kill rear passengers. Without adequate regulatory standards, only court cases were able to highlight manufacturers' negligence and force them to install stronger seats in all cars instead of just certain models.