Many motorists think an air bag will cushion them like a pillow in a collision, but these devices can cause serious injury and death.

The hard truth about air bags

Lawrence Baron and Matthew Whitman

Air bags are heavily touted by automobile manufacturers as safety devices. Sadly, this is by itself misleading. In reality, an air bag is an explosive device tucked in the steering wheel or instrument panel of a vehicle. Air bags have limited utility, and, even today, despite increasing news reports of air bag dangers, the driving public does not fully grasp the trade-offs air bags present. Air bags, especially those manufactured before the 1998 model year, have injured and killed vehicle occupants and will continue to do so—even in collisions where people would not be hurt but for the air bag firing.

Consumers have been receiving mixed messages about air bags for years. Auto manufacturers knew as far back as the 1970s about the dangers associated with the devices.[1] For example, in the August 1971 issue of *Motor Trend*, Ford purchased a full-page ad entitled, "An Up-to-Date Report of Air Bags. The Good News. The Bad News." The ad warned that a "major concern is that children who might be standing near the bag at the moment of deployment could also be severely injured." Automakers resisted air bag installation for safety as well as cost reasons.

However, once the government promulgated air bag regulations, there was silence from the industry. Manufacturers realized the devices' marketing potential and quickly touted them as safety devices. Numerous advertisements shaped consumer expectations that air bags were soft, billowy pillows. The last thing consumers expected was that air bags could kill.

As vehicles became widely equipped with air bags, experience disproved the myth of the air bag as a safety panacea. Reports of child deaths started to circulate in the mid-1990s. In June 1996, the government and auto manufacturers combined to formulate the Air Bag Safety Campaign. This was the first concerted effort to advise the public of dangers associated with air bags. The campaign stressed that children should be placed in the back seat and that drivers and passengers in the front seat should sit as far back as possible.

In October 1999, the National Highway Traffic Safety Administration (NHTSA) issued a warning about side-impact air bags, which many manufacturers have recently begun equipping their vehicles with. In theory, these bags offer great benefit. Not only are they supposed to protect occupants during a side-impact crash, but they may also keep the occupant inside the vehicle during a rollover. NHTSA suggested otherwise, noting that these air bags, like frontal air bags, have been undertested.

The agency released a statement that said

> Side-impact air bags can provide significant supplemental safety benefits to adults in side-impact crashes. However, children who are seated in close proximity to a side air bag may be at risk of serious or fatal injury, especially if the child's head, neck, or chest is in close proximity to the air bag at the time of deployment. Because there are variations in the design and performance of side air bags, manufacturers should notify consumers regarding whether it is safe for children to sit next to the side air bags. Children 12 and under should always travel in the rear seat and use an age-appropriate restraint.[2]

Confusion about air bag safety remains, and alternative designs that could prevent injuries have yet to be incorporated into most vehicles.

Generally, there are three types of air bag cases: those based on the automaker's failure to install an air bag,[3] those involving an air bag's failure to deploy,[4] and those in which an air bag inflated and caused injuries or death. This article focuses on the third type, which is the most common.[5]

An air bag deploys more quickly than the blink of an eye. Typically, one or more sensors detect a crash within the first 15 to 20 milliseconds after a frontal impact. The sensors send an electrical pulse to the air bag module, which ignites a small explosive squib. The squib ignites a solid propellant, typically pellets or disks of sodium azide. The azide burns with tremendous speed, releasing nitrogen gas.

The gas flows into the bag, which is folded inside a compartment in the steering wheel or instrument panel of the vehicle. The expanding bag bursts through its cover, either by splitting its housing at perforations or by forcing open a door built into the instrument panel. (Many injuries to "out of position" occupants are attributed to these doors, rather than the air bags themselves. The doors fly open with great speed and force.) Within 45 to 55 milliseconds after impact, the air bag is fully deployed. Within 75 to 80 milliseconds, it deflates. And within 150 to 200 millisec-

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onds, the crash event is complete.

Usually, an electronic control unit (ECU) detects the electronic signal from the sensors and gives a signal to fire. Many vehicles also employ a crude version of an airplane's black box, which stores data about the crash and detects faults in the air bag system before deployment. In every case, discovery of any black box data should be a priority. [See sidebar.]

An air bag should inflate fully before the passenger strikes it and rides it down, meaning the air bag absorbs the crash energy. This has been an underlying premise of air bag technology for more than 20 years.[6]

Unfortunately, an air bag may burst out at speeds up to 200 mph. One that strikes a passenger before it is fully inflated may cause death or injury. Typical injuries include neck hyperextension, including spinal cord injuries; blindness; facial abrasions, lacerations, or blunt trauma; chest injuries; internal trauma; burns from inflationary gases; and upper extremity injuries.

Regulatory history

Air bags are not a new technology. Early patents date back to the 1950s.[7] Manufacturers researched and tested prototypes throughout the 1960s and 1970s, and General Motors Corp. installed air bags in some of its vehicles in the early 1970s.[8] However, it was not until the federal government mandated that autos be equipped with air bags that manufacturers got fully onboard, attempting to capitalize on air bags' marketing potential as safety devices.

Air bags are only part of a vehicle's occupant restraint system and are broadly classified, together with padded knee bolsters and automatic seat belts, as "passive restraints." In 1984, Congress first required that passive-restraint protection be phased into vehicles from model year 1987 to model year 1990.[9]

This phase-in period for passenger-side protection was later extended: Automakers were allowed to defer passenger-side protection until the 1993 model year by equipping a higher proportion of new cars with driver-side air bags.[10] Then, in 1991, Congress required that all passenger cars have both driver- and passenger-side air bags beginning with the 1997 model year. Light trucks, including minivans and sport utility vehicles, were to have air bags in the 1998 model year.[11]

Federal Motor Vehicle Safety Standard (FMVSS) 208 is the regulation governing occupant restraints. Originally, manufacturers had to certify that their vehicle met certain performance criteria when it was crashed into a solid barrier at speeds up to 30 mph, at right and left angles up to 30 degrees, and head-on.[12] Specifically, belted and unbelted crash test dummies were not supposed to sustain certain injuries when their seats were positioned in the middle of the seat track. Specific injury criteria were formulated to measure the potential for injury.

NHTSA engineers formulated protocols to measure the likelihood of head injury in a collision. The head injury criteria (HIC) scores in each test could not exceed 1,000 units. Crash forces exerted on the dummy's chest were not to exceed 60 gs, and forces transmitted from the knee through the thighbone to the hip could not exceed 2,250 pounds.[13]

In March 1997, partially in recognition of the fact that large, powerful air bags were killing children, NHTSA temporarily amended safety standard 208 to encourage the development of "depowered" air bags that could deploy with less force.[14] Under the revised standard, some tests could be performed with a "sled" rather than a barrier collision.[15] In a sled test, a mock-up of the passenger compartment is mounted on a metal frame, or sled. A hydraulic piston jerks the sled backward suddenly, simulating the sudden deceleration of a crash.

Sled tests offer advantages to manufacturers. They are less expensive than barrier tests, as a vehicle is not destroyed with each test. And while the period of deceleration, or crash pulse, is uniform from vehicle to vehicle in a sled test, in barrier tests, vehicles of different construction, mass, and stiffness vary in their rates of absorbing impact forces. Sled tests allow manufacturers to engineer one-size-fits-all occupant restraint systems, which do not reflect the variability of different cars' performance in actual collisions.[16] Similarly, the uniform crash pulse used in many sled tests is "safer" than a barrier crash pulse. As a result, manufacturers can use air bags that inflate more slowly than those subject to barrier testing.

In a sled test, dummies are connected to similar instrumentation as in a barrier crash, and the air bag must meet the same injury criteria, as well as additional neck injury criteria.[17] This version of safety standard 208 has a sunset provision of September 1, 2001, so beginning in the 2002 model year, manufacturers must again certify compliance with the standard through the use of barrier tests. This coincides with the required implementation of "smart air bags," which incorporate alternative designs such as those discussed below.

NHTSA is considering yet another version of FMVSS 208, which would require testing with smaller child and female dummies at different speeds, depending on whether the dummy is belted or not.[18]

According to auto manufacturers, the primary problem with air bag design has been the safety standard itself. They contend that the regulation has compelled them to manufacture powerful air bags, and they note that a crash into a wall at 30 mph causes an unbelted dummy to move forward very quickly. Automakers argue that air bags must inflate with great speed—and great force—to be deployed in time to restrain an unbelted occupant.

This argument has surface appeal. However, it is misleading. Manufacturers' records have shown that air bags are designed and tested to protect a 5'9" male dummy seated in the middle of the seat track. Little, if any, testing has been done with short female or child dummies with the seat positioned at the front of the seat track.

Significantly, nothing in safety standard 208 has prevented manufacturers from seeking to protect all occupants in all positions. By law, FMVSS 208 is a minimum standard.[19] Moreover, it is a performance, not a design, standard. NHTSA itself has emphasized this point:

> The standard's automatic protection requirements are performance requirements and do not specify the design of an air bag. Instead, vehicles must meet specified injury criteria, including criteria for the head and chest, measured on properly positioned test dummies, during a barrier crash test, at speeds up to 30 mph.
>
> While the standard requires air bags to provide protection for properly positioned adult occupants (belted and unbelted) in relatively severe crashes, and very fast air bags may be necessary to provide such protection, the standard does not require the same speed of deployment in the presence of out-of-position occupants, or even any deployment at all. Instead, the standard permits the use of dual- or multiple-level inflator systems and automatic cut-off devices to protect out-of-position occupants and rear-facing infants. Therefore, regulatory changes are not needed to permit manufacturers to implement these solutions.
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> The agency also notes that there are many other variables in air bag design and related vehicle design that can affect potential aggressivity. Variables related to air bag design include air bag volume, fold patterns, tethering, venting, mass/material, shape and size of air bag module opening, and module location and deployment path. Related vehicle design variables include such things as recessing the inflator/air bag in the steering wheel assembly or in the dash, pedal adjusters, safety belt pretensioners, and webbing clamps. The standard's performance requirements permit manufacturers to adjust all of these variables to minimize adverse effects of air bags.[20]

Alternatives

As NHTSA recognized, alternative designs could minimize the dangers of air bags. These include:

• Dual-deployment thresholds. This is a design that BMW and Mercedes-Benz

have used since 1994. Scientists and engineers do not anticipate that serious injuries will result for seat-belted occupants in collisions with barrier-equivalent velocities (BEV) of less than 18 mph.[21] Accordingly, BMW and Mercedes use sensors in the seat belt and air bag systems to prevent an air bag from firing in the front of a seat-belted occupant unless the collision has a BEV of 18 mph or greater.[22] For occupants who are unbelted, the deployment threshold is 12 mph.[23]

• Tailored and dual gas-flow inflators. These are similar in concept to dual-deployment thresholds. Certain vehicles tailor the flow of gas into the air bag according to the severity of the collision. One such system is sold by Air Belt Systems under the trade name "IntelliFlow CARE BAG." Air Belt claims that in some cases its product can reduce injury-causing forces exerted on out-of-position child dummies by more than two-thirds.

Alternatively, some vehicles use a dual inflator, spacing the firing of the inflators by several milliseconds. This may result in a less aggressive air bag—one that is safer for an occupant who is close to the instrument panel.

• Tethers. A tethered air bag has cloth straps inside it. The tethers restrain the bag from moving too far rearward. They are inexpensive—about $3 per bag—and can be placed in almost any bag without degrading its performance under standard 208.

• Shape, vents, folding pattern, and material. Air bags can be shaped, vented, or folded to minimize rearward excursion and force. Use of lighter materials can cut down on the weight of the bag, reducing the risk of injury.

• Seat belt pretensioners, telescoping steering wheels, and pedal adjusters. Air bags are only a part of a vehicle's restraint system. They are supplementary to the seat belt, the primary occupant restraint. Air bag injuries often occur when an occupant is close to the bag during a collision. This usually results from the occupant's movement caused by pre-impact braking, delayed sensor detection of the crash event, or a seat that is positioned forward in the seat track.

This phenomenon can be minimized. Pretensioners, typically found in European vehicles and some U.S. luxury vehicles, are designed to take the slack out of seat belts and hold the occupant back against the seat during a collision. Telescoping steering wheel columns and pedal adjusters aim to put as much space as possible between the occupant and the steering wheel. General Motors offered pedal adjusters as early as the 1970s.

In many cases, such as those involving small women and children, air bags are no more effective than seat belts alone.

• Seat sensors. With encouragement from NHTSA, manufacturers are beginning to develop sensors for passenger seats that will prevent passenger-side air bags from firing when little or no weight is resting on the seat. This simple device could have prevented many deaths of young children attributed to air bags over the past several years.

• Less aggressive air bags. NHTSA has determined that many air bags could be depowered by approximately 25 percent and still meet the requirements of the safety standard.[24] Air bags labeled "second generation" are typically the same module as in the previous year's model but with less sodium azide as a propellant.

Defense arguments

Warnings. One of the principal areas of contention in these cases is warnings. In a 1998 federal case, Ford Motor Co. argued that FMVSS 208, which requires warnings about air bags to be placed on sun visors, prevents any other warnings elsewhere in the vehicle except in owner manuals. The court agreed.[25] This is almost certainly an incorrect ruling, but unless it is reversed on appeal, plaintiffs can expect to see the defense press this argument.[26]

Although consumers are generally more aware of air bag dangers today, they still remain ignorant of ways to effectively minimize these dangers. A study by the Harvard School of Public Health's Injury Control Center and Center for Risk Analysis found that consumers still believe that using seat belts will protect them from air bag injuries.[27] However, if the occupant is too close to the air bag, or if it is too big or aggressive, the occupant remains at danger despite using a seat belt.

Probably the best way to educate consumers is with videos that demonstrate the risks air bags pose and how consumers can modify their behavior to minimize those risks. Until consumers can see how a particular air bag performs, they will not understand how to protect themselves. Manufacturers of other potentially dangerous products have used videos to alter consumer behavior. For example, Polaris Corp. regularly gives buyers a video on the safe use of its all-terrain vehicles.

Statistics. Statistics are raised in almost all auto crashworthiness cases. In May 1999, NHTSA filed its *Fourth Report to Congress*, which said that air bags do, indeed, save lives. The agency calculated that 2,263 lives had been saved from 1987 through 1997.[28] Plaintiff attorneys should expect that manufacturers will offer statistics like these in trial testimony. A manufacturer may also offer evidence that its vehicles have caused fewer deaths or injuries in frontal crashes than other manufacturers' vehicles. A defendant may also try to prove that its vehicles have caused fewer air bag inflation-induced injuries than other manufacturers' vehicles.

There are several responses to these arguments. First, the premise that air bags save lives should be questioned. NHTSA acknowledged that its findings about the number of lives saved were based on various assumptions, any of which is subject to attack.[29] For example, the agency questioned whether seat belt usage is as high as that reported. It also questioned the sufficiency of the data available, including the number of cases available for study. The agency noted, "Injury-reducing effectiveness can be masked by a multitude of factors not directly related to the air bag or automatic seat belt systems."[30]

Second, even NHTSA recognizes that there is a limit to the utility of air bags.[31] In many cases, such as those involving small women and children, air bags are no more effective than seat belts alone, or are actually less effective.[32]

Third, it is generally irrelevant that some air bags have saved lives. The claim is not that all air bags are dangerous, but that a better design than the one in the plaintiff's vehicle would have saved lives and prevented injury. And fourth, manufacturers are the first to admit that one vehicle's performance cannot be readily compared to another's. In other words, each vehicle is different, which is why manufacturers typically resist demands for their records regarding any vehicle other than the one at issue.

Causation. Another defense to expect is a claim that the occupant was "out of position." Manufacturers search for any basis for claiming that an injured person was "too close" to the air bag.

To diffuse blame, manufacturers usually argue that the injured occupant either did not wear the seat belt or did not wear it properly. Because almost any air bag will injure an occupant who is "too close," the defendant claims, there is nothing unique about its device. The manufacturer argues that the plaintiff really wants air bags to be removed altogether, which it contends will cause more harm than good.

Often, the response to this defense is simply a factual matter—the plaintiff should assert that he or she used the seat belt properly if that is the case. Testimony, such as that of an expert in occupant kinematics, can be helpful to show the jury how the air bag caused the injury. The plaintiff may also be able to assert that an alternative design would have prevented or minimized the injury.

Current litigation climate

Almost four years ago, the *Wall Street Journal* ran a front-page article noting that auto manufacturers were taking air bag cases to court and generally winning them.[33] This is no longer the case. The climate has changed as news that air bags are killing and injuring people has reached consumers across the country. Numerous cases have been won by plaintiffs.[34]

Nevertheless, attorneys should not take air bag cases lightly. Manufacturers still fight these claims, as indicated by a recent defense victory involving a child killed by the passenger air bag in a Volvo.[35] As in all crashworthiness cases, the costs of litigation mount quickly.

Evaluation factors

Factors an attorney needs to consider when evaluating a case include the seriousness of the injuries; the crash facts, including the speed of impact; the damage to the vehicle; the availability of alternative designs; the positions of the injured occupants and whether or not they used seat belts; and the fault, if any, of the injured occupant in causing the crash.

Litigation involving injuries and deaths caused by the deployment of air bags is still emerging, but many organizations have information that may help plaintiff lawyers seek justice for injured clients.[36] Manufacturers need to be held accountable for the harm air bags cause. Thorough case evaluation and trial preparation are crucial to making consumers safer on the road. □

Notes

1. In a 1970 notice of proposed rulemaking, NHTSA expressed concern over the potential for air-bag-induced injuries in low-speed collisions and proposed a rule that would require no air bag deployment in collisions of less than 15 mph. 35 Fed. Reg. 16,937 (Nov. 3, 1970).

2. Consumer Advisory from National Highway Traffic Safety Administration, *NHTSA Issues Consumer Advisory on Side Air Bags and Child Safety* (Oct. 14, 1999) (on file with author).

3. *See, e.g.*, Geier v. American Honda Motor Co., Inc., 166 F.3d 1236 (D.D.C.), *cert. granted*, 67 U.S.L.W. 3717, 68 U.S.L.W. 3152 (U.S. Sept. 10, 1999) (No. 98-1811) (The Supreme Court's decision in this case on federal preemption of state common law claims will reach far beyond air bag claims. The case is being watched closely by trial lawyers nationwide.); *see also* Montag v. Honda Motor Co., 75 F.3d 1414 (10th Cir.) (failure-to-install case preempted by federal law), *cert. denied*, 519 U.S. 814 (1996).

4. *See, e.g.*, Sipes v. General Motors Corp., 946 S.W.2d 143 (Tex. Ct. App. 1997).

5. *See, e.g.*, Sanders v. Chrysler Motor Corp., No. 96-616038-NP (Mich., Wayne County Cir. Ct. filed Mar. 25, 1996).

6. *See, e.g.*, FUMIYUKI ABE & SHOHZO SATOH, STUDY ON AIR BAG SYSTEMS FOR NISSAN SMALL-SIZED CARS 197 (Soc'y of Automotive Engineers Paper No. 740577, 1974).

7. *E.g.*, John Hetrick, Pat. No. 2,649,311, Safety Cushion Assembly for Automotive Vehicles (filed Aug. 18, 1953); Robert H. Hodges, Pat. No. 2,755,125, Inflatable Crash Protection for Vehicles (filed July 17, 1956).

8. L.C. Ludstrom & R.A. Wilson, *Relating Air Cushion Performance to Human Factors and Tolerance Levels*, *in* PROCEEDINGS OF THE FIFTH INT'L CONFERENCE ON EXPERIMENTAL SAFETY VEHICLES 463 (June 4-7, 1974).

9. Federal Motor Vehicle Safety Standards; Occupant Crash Protection, 49 Fed. Reg. 28,962 (codified at 49 C.F.R. §571) (July 17, 1984).

10. Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. No. 102-240, 105 Stat. 1914 (codified in scattered sections of 23 U.S.C.).

11. Federal Motor Vehicle Safety Standards, 58 Fed. Reg. 46,551 (Sept. 2, 1993) (codified at 49 C.F.R. §§571, 585) (implementing mandate of the Intermodal Surface Transportation Efficiency Act of 1991).

12. Interestingly, compliance with FMVSS 208 does not actually require a crash test, only certification that a vehicle would pass the standards if the test were performed. In practice, manufacturers have performed crash tests to assure compliance.

13. 49 C.F.R. §571.208.S6.1-5 (1999).

14. Federal Motor Vehicle Safety Standards; Occupant Crash Protection, 62 Fed. Reg. 12,960 (Mar. 17, 1997) (codified at 49 C.F.R. §571).

15. *Id.* at 12,965-12,966. Under the sled test protocol, the 30-mph barrier crash test with unbelted dummies is replaced by the sled test, and the requirement of a 30-degree offset crash test is suspended altogether.

16. *Id.* The sled test has also been criticized because the impactless "crash" does not accurately forecast dynamic intrusion into the vehicle.

17. Federal Motor Vehicle Safety Standards; Occupant Restraint System, 62 Fed. Reg. 12,960, 12,970.

18. The most recent proposals are available at 64 Fed. Reg. 60555-60629 and may be downloaded from NHTSA's Web page at www.nhtsa.dot.gov/cars/rules/rulings/AAirBagSNPRM/Index.html.

19. 49 U.S.C.A. §30102(a)(9) (West 1999).

20. Federal Motor Vehicle Safety Standards; Occupant Restraint Systems, 62 Fed. Reg. 2996, 2998 n.3 (Jan. 21, 1997) (codified at 49 C.F.R. §571).

21. A.C. MALLIARIS ET AL., HARM CAUSATION AND RANKING IN CAR CRASHES (Soc'y of Automotive Engineers Paper No. 850090, 1985); *see also* GEORGE LIBERTINY ET AL., AIR BAG EFFECTIVENESS—TRADING MAJOR INJURIES FOR MINOR ONES (Soc'y of Automotive Engineers Paper No. 950871, 1995); A.C. MALLIARIS ET AL., AIR BAG FIELD PERFORMANCE AND INJURY PATTERNS (Soc'y of Automotive Engineers Paper No. 960659, 1996).

22. Comments of Ingo Kallina, Head of Design and Safety for Mercedes, Transcript of NTSB Air Bag Public Forum, at 486-87 (Mar. 17-20, 1997); Advertisement for BMW, *Dual Threshold Air Bags*, BMW MAG. (1994); *see also* Advertisement for Audi, *Audi for 1998: Confidence Without Compromise*, AUDI (1998).

23. Transcript of NTSB Air Bag Public Forum, *supra* note 22, at 486-87; *Dual Threshold Air Bags*, *supra* note 22.

24. Letter from Frank Seeles Jr., Chief Counsel for NHTSA, to Robert C. Sanders, Director of Parents for Safer Air Bags (noting that pre-model year 1998 air bags can pass FMVSS 208 even after being depowered through the removal of 25 percent of their sodium azide propellant).

25. Fisher v. Ford Motor Co., 13 F. Supp. 2d 631 (N.D. Ohio 1998).

26. NHTSA's position is clear: The requirement of certain types of warnings does not preclude manufacturers from also using other, more effective warnings. *See* Interpretive Letter from NHTSA Chief Counsel Frank Seales Jr. to Robert C. Sanders, Director of Parents for Safer Air Bags (Nov. 12, 1998). Some manufacturers, including Mercedes-Benz, Volvo, and Saab, do provide additional warnings beyond those on the sun visor.

27. JOHN GRAHAM ET AL., THE AIRBAG'S TEFLON IMAGE: A NATIONAL SURVEY OF KNOWLEDGE AND ATTITUDES (1997).

28. NATIONAL HIGHWAY TRAFFIC SAFETY ADMIN., FOURTH REPORT TO CONGRESS (May 1999) available at http://www.nhtsa.dot.gov/people/ncsa/pdf/RtC_OccProt.pdf (visited Oct. 20, 1999).

29. *Id.* at 5-8.

30. *Supra* note 28.

31. *See* NATIONAL HIGHWAY TRAFFIC SAFETY ADMIN., THIRD REPORT TO CONGRESS (Dec. 1996) (visited Oct. 20, 1999) (available at http://www.nhtsa.dot.gov/cars/rules/rulings/208con2e.html) (for overall injury reduction, the effectiveness of an air bag used alone is "not statistically significant").

32. *Id.* at Exhibit 6 (air bags pose "increased risk" to right-front passengers under age 13).

33. Aaron Lucchetti, *Automakers Fight, with Much Success, Suits over Air Bags*, WALL ST. J., Aug. 14, 1996, at A1.

34. *See, e.g.*, Collazo-Santiago v. Toyota Motor Corp., 937 F. Supp. 139 (D.P.R. 1996), *aff'd*, 149 F.3d 23 (1st Cir. 1998); Crespo v. DaimlerChrysler Corp., No. 97 CV 8246 (JSR), 1998 WL 542304 (S.D.N.Y. Aug. 25, 1998).

35. Hisrich v. Volvo Cars of N. Am., Inc., No. 5:95CV1080 (N.D. Ohio Mar. 9, 1999).

36. *E.g.*, Parents for Safer Air Bags, 1250 24th St., N.W., Ste. 300, Washington, DC 20037, (202) 467-8300, fax (202) 466-3079; National Highway Traffic Safety Administration (NHTSA), Office of Defects Investigation, 400 Seventh St., S.W., #5236, Washington, DC 20590, (202) 366-9550, http://www.nhtsa.dot.gov; Society of Automotive Engineers, 400 Commonwealth Ave., Warrendale, PA 15096, http://www.sae.org; Center for Auto Safety, 2001 S St., N.W., #410, Washington, DC 20009, (202) 328-7700, http://www.autosafety.org; ATLA Exchange (members only), 1050 31st St., NW, Washington, DC 20007, (800) 344-3023 or (202) 965-3500, ext. 615, http://exchange.atla.org; and Attorneys Information Exchange Group (AIEG) (members only), 402 Office Park Dr., #200, Birmingham, AL 35223, (205) 803-4000, fax (205) 803-4008, http://www.aieg.com.