SCREENING AUTOMOTIVE PRODUCTS LIABILITY CASES

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Mr. Payne's practice is focused on product defect and aviation cases. He also routinely handles significant personal injury cases arising from commercial vehicle collisions. In his practice, he handles cases involving life-changing events where millions of dollars and the client's long-term security are at stake.

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Texas Bar Foundation, the Dallas Bar Foundation and a member of the Texas Center for Legal Ethics & Professionalism. He is a Fellowship Member and on the Board of Directors for the Texas Trial Lawyers Association. He is also a member of the ATLA, the DBA, the ABA and the Mac Taylor Inn of Court. He has earned Martindale-Hubbell's highest rating (AV) through a peer review evaluation. Andy has been consecutively selected by *D Magazine* as one of The Best Dallas Lawyers Under 40, and by *Texas Monthly* as a Texas Super Lawyer.

Andy has successfully tried numerous cases to jury verdict in State and Federal Courts.

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I. INTRODUCTION

Automotive products liability cases are many things – interesting, technically challenging, hard fought, expert intensive, expensive, sometimes financially rewarding and sometimes financially destructive. More so than almost any other Plaintiffs' personal injury case, automotive product liability cases are extremely capital intensive from the onset through completion. Once you have decided to take an automotive products liability case, you will need to purchase and store the vehicle, conduct an investigation and an accident reconstruction, and hire defect and medical causation experts. Just putting these initial pieces into place can easily cost over $50,000.00 – a considerable expense before even one deposition is taken. A plaintiffs' lawyer can easily spend hundreds of thousands more to get the experts through the needed testing and expert reports/depositions.

The considerable cost of handling automotive product cases makes careful case selection imperative. A financially successful automotive products liability practice demands a strict screening process. This paper serves as a springboard for this screening process.

Section II of this paper details screening thoughts, which are universal to all automotive product liability cases. Section III of the paper provides an overview of common automotive product defect theories. Included in Section III is information regarding how to begin screening cases for each of these defects. A detailed analysis of each theory is the subject of entire seminars, but the overview should help identify key factors to look for in deciding whether to undertake further expense in evaluating a potential claim. Finally, Section IV provides some thoughts and caveats on novel/cutting edge defect theories.

II. UNIVERSAL SCREENS

In evaluating a potential automotive products liability case, there are certain characteristics or signatures of a "makeable" case. Some of those characteristics are defect specific. Many times the characteristics are shared by all or at large category of defect theories. Looking for these universal characteristics can help screen potential cases earlier and cheaper than most defect specific screens. When deciding whether to sign on a potential new case, first look through the following universal screens. If the case passes muster, then proceed with a more defect specific analysis of the potential case as discussed in Section III.

A. Requisite Damages

As you know by now, automotive product liability cases are time intensive and extremely expensive. A case with a defect theory that requires testing, a case with multiple defect theories, and/or a case with complex medical and damage proof can easily run from $250,000 to $500,000 dollars. In order to recoup your expense, collect a reasonable fee and a pay a fair sum to the client, simple math tells you that to be economical feasible, the damages in these cases must be substantial.

As a general rule, limit cases to those that involve death or serious personal injuries. More specifically, death cases of "bread winners" who have associated economic damages are preferred. If minors or non-wage earner deaths are considered, special attention must be paid to keep the expenses as low as possible and the experts' work in check. Failure to do so can make the cases difficult to resolve (by settlement or trial) in a financially satisfactory manner.

Injury cases should always be limited to cases with at least $100,000.00 in medical bills, ongoing future care needs and/or permanent impairment. With those injury cases that involve huge liens, consider negotiations with lien holders up front. Huge liens can make some cases difficult to resolve. I have successfully contacted lien holders and informed them that I am considering taking the case but only if I can get them to agree to a lower dollar figure or percentage on the front end. The leverage you have at the beginning is much greater when you are presenting the notion that there may be no pie to divide up if you do not become involved in the case, rather than at settlement when the only issue is dividing up a pie that the lien holder already knows exist.

In order to fully evaluate economic feasibility, look at realistic settlement value, liens and probable expenses. Do not sign up those cases where one missed step can turn the case upside down. In sum, only take death cases (preferably with the associated economic loss) or serious injury cases with either permanent impairment and/or ongoing medical needs. Because determination of damages is relatively easy and inexpensive, it should always be the first to screen. Many potential cases will not satisfy this first level of evaluation.

B. Drugs and Alcohol

The second universal screen is the presence of drugs or alcohol in your case.

First, if your potential client or decedent was using drugs or alcohol, do not take the case. This is great advice for all personal injury cases. However, ignoring this advice in the automotive products liability arena can spell financial disaster. The stakes are too high and the chances of a 51% bar too great to take these cases.

Second, avoid almost all cases where the driver of the car in which your plaintiff or decedent was a passenger was using drugs or alcohol. Remember, the jury will almost always assess a very high percentage of fault on the drunk, lessening the percentage allocated to the automobile manufacturer. Additionally, the jury will likely place fault on your plaintiff for getting in the car with a drunk. If you decide to bravely proceed with this type of this case, ensure that your plaintiff's knowledge of the intoxication was limited, or better yet, non-existent. I also suggest limiting acceptance of these cases to instances where the defect is a well known and tested defect, which will not require extensive expert work, and cases in which there are significant damages.

Finally, some cases have your driver and your plaintiff or decedent clean, but alcohol and drugs are still involved in the case. Many automotive products cases involve two vehicle collisions. Some of those cases have bullet vehicle drivers who are intoxicated. The presence of an intoxicated bullet driver involves both potential pit falls and possible advantages. Obviously, the jury will allocate a percentage of fault to the bullet driver as either a defendant, a settling party, or a responsible third party. The risk of a high percentage allocation on the intoxicated bullet driver and a correspondingly lower percentage allocation to the manufacturer is obvious. This risk is real and should be carefully considered. Many times, proceeding with this type of case can only be prudently done if the remaining liability and damage screens are very strong.

But having an intoxicated bullet driver can present opportunity as well. The presence of drugs or alcohol (unrelated to the plaintiff) will almost certainly be an aggravating damage factor increasing (perhaps significantly so), the damages awarded by a jury. So, while the manufacturer will enjoy a lower allocated percentage, it may well be a smaller piece of a much larger pie. And while the drugs or alcohol may decrease the percentage allocated to the manufacturer, it will not affect the percentage allocated to the plaintiff and will not present an additional risk of a bar. For these reasons, I do not automatically eliminate potential cases involving an intoxicated bullet driver.

C. High ΔV (Crashworthiness Cases Only)

This universal screen only applies to one category of defects — crashworthiness cases. Crashworthiness cases deal with the issue of whether a vehicle properly protects occupants in a collision. In theory, the cause of the collision is irrelevant; the focus should be on how well the vehicle protects occupants during the collision. Examples of crashworthiness cases are seatbelts, airbags and/or roof crush. Non-crashworthiness defect cases focus on a defect that caused or contributed to the collision. Examples of non-crashworthiness defect cases include tire defects, axle failures, and ESC cases. Understanding the distinction between defect types is important in the application of this screen.

So, what is ΔV? Engineers explained ΔV as the change in velocity that occurs during a collision. A collision that goes from 60 mph to 0 mph is understandably more severe than one that only goes from 20 mph to 0 mph. ΔV should not be confused with the speed of the vehicles at various stages. Rather, ΔV measures the change in velocity caused during the collision itself.

Hand-in-hand with the concept of ΔV is the crash pulse. The crash pulse is the time over which the change of velocity is experienced. Head-on-crashes and barrier impacts have very short crash pulses. On the other hand, rollovers have long crash pulses. Long crash pulses afforded occupants a longer period to safely "ride down" the change in velocity. Thus, the lower ΔV and longer crash pulse, the less severe, more survivable the collision should be. The higher the change in velocity and the shorter the crash pulse, the more severe and deadly the collision.

The above explanation of a basic crashworthiness principle is critical to understanding the high ΔV screen. Manufactures often defend cases with the "hell of a crash defense." It goes like this. The crash was so bad (high ΔV, short crash pulse) that regardless of the vehicle's crashworthiness safety shortcomings, nobody could have survived. For instance, the client calls stating a loved one was killed in a head-on-collision and the airbags did not deploy. The problem is even with a properly deployed airbag, your client's loved one would still have been killed. Why? The crash was so severe as to completely crush the victim.

Look for non-severe crashes that result in surprisingly substantial injuries. The gut reaction should be, "how could anyone have been hurt in this crash." Not, "it is amazing anyone survived." Look for crashes where the potential client is injured/killed, but everyone else walks away relatively unharmed. In engineering terms, look for ΔV's below 30 mph to combat the "hell of a crash" defense.

D. Medical Causation

Medical causation is always a critical screen. In many personal injury cases, medical causation is obvious – the wreck caused the injury. Indeed case law suggests that in some of these simple cases expert testimony may not be needed. Unfortunately, that is not the case in most automotive product liability cases.

While the fact that an injury was caused in a wreck maybe be obvious, the true question is whether the defect you alleged was the cause of the injury. Did the client get the TBI from roof contact or partial ejection and a pavement strike? Are the injuries pre or post ejection injuries? Would a deploying airbag have prevented the injury? While lawyers can make educated guesses and may eliminate injuries without clear causation, many times experts are needed to address these causation issues.

Medical causation in the automotive products liability arena is perhaps more complicated that any area of personal injury law. Experts have to go beyond just medical doctors. The causation experts need to be versed in accident reconstruction, occupant kinematics, biomechanics and medicine. These experts have to have an understanding of how the wreck happens, how the bodies move inside the vehicle during the wreck, when and why the bodies contact interior components and when and what caused specific injuries during the wreck sequence. Avoid the temptation to have a treater testify as to causation. I recommend a forensic pathologist with occupant kinematic and accident reconstruction training. The problem is that there are few of these qualified experts and most are extremely expensive.

While answering medical causation can be a complexed issue, it is always on my list of early universal screens. Many times the cases can be eliminated for the absence of clear medical causation. If the case looks good to me, one of the first experts I generally consult is a Biomechanic M.D. to make certain I can establish medical causation.

E. Seatbelts

Whether the plaintiff or decedent was belted is critical to almost all products liability cases. Evidence of seatbelt usage is especially critical to crashworthiness cases as seatbelt restraints are a cornerstone of a vehicle's crashworthiness. You must be able to demonstrate through some or preferably all of the following that seatbelt usage exists. Generally, I talk to my client and their family extensively about the client's habit and practice regarding seatbelt usage both during the crash and in general. I carefully examine the forensic evidence in the car, specifically the restraint system to look for clues of seatbelt usage. Finally, the medical documentation in either medical records, photographs and/or client testimony can demonstrate injuries consistent with belt usage. The more evidence you have of belt usage, the stronger your case will be.

F. Available Easy Money

Occasionally, I will be presented with a case that has a products liability theory but there is otherwise sufficient liability insurance. For instance, you represent a passenger who was killed by a driver who had a multimillion dollar liability insurance policy. The other driver's fault in the wreck is clear. While you might be able to make a products liability case work, your client will certainly net more money if full and adequate compensation can be recovered from a liability policy without the time and expense associated with pursuit of a more difficult and expensive products liability case.

III. COMMON DEFECT THEORIES

After applying the universal screens, the analysis should shift to investigation and evaluation of specific defect theories. The following list is not meant to be in exclusive, exhaustive list. However, this section does provide a summary of the more common automotive product liability defect theories.

To help evaluate whether specific defects exist, I have broken each defect into several components. First is the crash profile. Should the collision be a side impact, a rollover, an on-road trip, a rear impact, etc? Next is the mechanism of the defect. Although, each defect could be the subject of its own treatise, this component will sketch out what is defective and how that defect manifests itself. The final component is the injury profile. What kinds of injuries would you expect with a given defect? Together, these three components should provide a broad overview of what to look for in evaluating potential specific defects. But be advised that these are simply generalities. Different defect crash profiles and injuries can and will exist. It is always advisable to engage experts to help in your evaluation of the case.

A. Airbag Failure to Deploy

a. Crash Profile

Airbags fire when airbag sensors perceive a collision from a certain angle at a certain barrier equivalent velocity. All cars now have front airbags to protect occupants if there is a significant frontal component to the collision. Some vehicles have side curtain and/or rollover protection airbags. Obviously, your allegation of which airbag failed to deploy will help answer the question of what the crash should look like.

Generally, a failure to deploy case should involve an impact to an airbag sensing area. Thus, frontal airbags are meant to protect frontal component collisions such that if you have only damage to the rear of the vehicle and the clients complain that their airbags did not deploy, you do not have a case.

In addition to the direction of force, the impact must be at a level significant enough to reach the airbag triggering threshold. Airbags are designed to not fire below a certain barrier equivalent velocity as these lower speed impacts are thought to be more benign. At these lower speeds, the firing of the airbag could and would potentially cause more harm if fired than not. Different vehicles have different trigger thresholds depending on the restraint systems, the existence of pretensioners, and other variables. In generally, you need an impact from the correct direction at a speed in excess of a 17 mph barrier equivalent velocity. You may need experts to help analyze whether the impact threshold is satisfied.

b. Mechanism of the Defect

There are several potential causes for an airbag's failed deployment. An understanding of the specific cause for the failure to deployment is not critical to the initial screening process. Indeed, a thorough expert evaluation and inspection of the vehicle is probably necessary to make a determination of the mechanism of defect. But generally, airbags can fail to deploy due to problems with sensors, relays, malfunctions in the onboard computers, or computer algorithms that fail to trigger the firing mechanism.

c. Injury Profile

Most airbags are designed to prevent serious or life threatening injuries to the head. Injuries to the lower body, abdominal injuries and some chest cavity injuries will not be prevented by a properly deploying airbag. With expert consultation, you can eliminate those cases, which have injuries a properly deployed airbag would not have prevented. So, you should decline the case when the client calls with the right crash profile (a frontal impact), with the right defect (a non-deployed airbag), but with lower orthopedic injuries. There is no causation.

A non-deployment case by definition involves in impact significant enough that the airbag should have been triggered. With those types of wrecks, injuries are a statistical probability. Those injuries are not necessarily limited to injuries that airbags are designed to prevent. You may have a head injury that an airbag would have prevented, but also a torn aorta that a deployed airbag would not have prevented. You have causation on one injury, but the other injury would have caused death regardless. Decline the case.

In short, strong medical causation with failure to deploy cases is relatively rare. Look for head trauma in the absence of other life threatening injuries.

B. Airbag Deployment Injuries

a. Crash Profile

The crash profile is easy with deployment injury cases. If the airbag deployed in a low speed collision, then you have the correct crash profile to consider a potential case. The gut reaction is again— no one should have been hurt in this wreck— yet you have the presence of an airbag caused injury.

b. Mechanism of the Defect

The airbag deploys too aggressively. Early generations of airbags deployed very aggressively. Some fired directly toward the occupant's face. Some airbags had a bullwhip effect upon deployment. Later generations of airbags have addressed many of these problems. These later versions employ tethers within the airbag to prevent whipping and allow for a more even deployment. Others are designed to deploy upward first, and then toward the occupant.

Better than the airbag that fires too aggressively is the airbag that fired when it should not have had fired at all. Airbags, by design, must deploy quickly enough to be in place to protect the body from the collision it will have the interior components of the vehicle. This need for a quick deployment comes with risk that the deployment itself may cause some injuries. The logic is that the risk of deployment injury is outweighed by the protection that airbag provides against more severe injuries. This logic is acceptable if there is a significant collision— a collision with a high enough barrier equivalent velocity. The logic does not hold true, if there is a lower velocity crash or no crash at all. I have actual handled a case where an airbag fired with out a collision at all. Obviously, this is a good liability case. More common, however, is the argument that the fire triggering velocity was set too low. When the trigger point is set too low, then the airbag fires in a collision, in which it is not really needed. Indeed, in a collision where it can cause more harm than good.

c. Injury Profile

Airbag deployment injuries typically occur with short, small female drivers whose seats are pulled far forward so they can best reach the steering wheel and pedals. In the most severe cases, the airbag deployments can actually knock the occupant's head back with such force that the neck is broken.

The more common deployment injuries are less severe. These typically include: facial injuries, eye injuries leading to permanent vision loss and ear injuries leading to permanent hearing loss.

C. Electronic Stability Control

The allegation in an ESC case is that the vehicle should have had ESC, but it did not employ this life saving technology.

a. Crash Profile

In an ESC case, the crash is much less important than what preceded the crash. ESC works when the on-board computer makes control corrections to prevent an accident. The on-board computer makes those corrections when it senses vehicle yaw. Thus, accident reconstruction in an ESC case is critical. That accident reconstruction must demonstrate a loss of control that could have been prevented by the presence of ESC. Look for yaw marks or vehicles that make increasing severe s turns down the road as the driver makes over corrections.

ESC will not provide protection in crashes where there is not a loss of control preceding the crash. For instance, intersection collisions and straight rear impacts would not make good ESC cases.

b. Mechanism of the Defect

Electronic Stability Control cases are relatively new. Electronic Stability control systems use the vehicle's on-board computer to sense the onset of a loss of control. Once sensed, the computer then takes over applying control inputs (such as braking) to each of the individual tires. ESC is amazingly effective at preventing loss of vehicle control. Industry commentators have commented that ESC will save more lives than any other vehicle safety system except for seatbelts. NHTSA will soon mandate ESC on all vehicles. The theory is simple— the vehicle should have ESC and it did not despite its availability and relatively low expense. The defense will be "then most cars on the road unreasonably dangerously defective."

c. Injury Profile

The injury profile is simple with this defect. If the vehicle had ESC, the accident would have been avoided and there would be no injury. Medical causation is not the issue in these cases.

D. Seatbelt – Inertial Release, Unwanted Releases, and Partial Engagement

a. Crash Profile

In seat belt release cases, your accident reconstructionist, occupant kinematics expert and defect expert have to work closely together to determine the direction, source and magnitude of force on the buckle or release button, which caused the buckle's unwanted release. Many times these wrecks are rollovers. Rollovers often have forces acting in multiple directions. These forces are needed to impact the buckle and cause the unwanted release. With a single dimensional wreck, the likelihood of having the correct force at the correct direction diminishes greatly.

b. Mechanism of the Defect

A buckle that will inertially release holds the male portion of the buckle into the female portion of the buckle using a spring. If a sufficient force is applied to that buckle housing from the right direction, the spring will compress allowing the buckle to release. There are numerous alternative designs with secondary locking mechanisms that will prevent inertial release.

Inadvertent Release occurs when the release button is not well guarded. These are the buckles that were the subject of the failed ball bearing tests. Essentially, during the collision an object or body part in the car inadvertently contacts the release button causing the buckle to disengage.

Partial engagement occurs when the male portion of the buckle is inserted in the female portion of the buckle, but does not engage the locking mechanism. The buckle appears to be safely locked, but will release in a wreck because it was only partially engaged.

c. Injury Profile

Because most times this defect involves a rollover and because many times occupants whose restraints fail in a rollover collision are ejected, you are often looking for post-ejections injuries. Avoid those injuries that occur to occupants belted in the vehicle. Because there is no bright line injury profile in these cases, it's essential to consult a forensic/biomechanical/medical expert to solidly establish medical causation.

E. Seatbelts— Retractor Defects

a. Crash Profile

Retractor failures most often occur with frontal impacts and rollover collisions. There will also be clear physical evidence of belt usage. If the defect is a skip lock, than a microscopic inspection of the retractor teeth will reveal evidence consistent with skip locking.

b. Mechanism of Defect

Some retractors work when two opposing set of teeth are forced to engage one another thereby causing the belt webbing movement to cease. One system that tells those teeth to engage is a ball and pendulum system. But, in a rollover, these systems may incorrectly tell the retractor to release the webbing.

Retractors also fail when the teeth fail to properly engage one another and skip along the ends. This is referred to as "skip-lock". Both defects allow excess slack into the restraint system.

c. Injury profile

When excess slack is introduced into the restraint system, often the upper torso is not properly restrained. This can result in full ejections, partial ejections and interior head strikes. With the interior strikes and partial ejections, you will often see head injuries. Complete ejections create a variety of injuries as discussed above.

F. Seatbelts – ABTS and Pretensioners

a. Crash Profile

ABTS and pretensioners increase the restraining capability of a restraint system in all wrecks. However, the most dramatic improvement comes in rollovers, wrecks involving seat back failures and wrecks where the b-pillar is crushed to the extent that the excess slack is introduced into the restraint system.

b. Mechanism of the Defect

Like with ESC, the basis for the defect is that the vehicle should have incorporated an All Belts to Seat (ABTS) design and/or pretensioners. Both of these designs greatly improve the restraint system's effectiveness. ABTS is particularly helpful when the b-pillar is compromised or the seat back is deflected rearward. In both of these instances, a belt that is attached to the b-pillar will lose much of its restraining capacity. An ABTS design, however, remains effective because it stays with the occupant regardless of the position of the b-pillar or the seatback.

Pretensioners sense a collision and tighten the belt webbing to the occupant before the belts are loaded. This reduces the potential for slack in the restraint system. Pretensioners are particularly helpful in rollover collisions. Again, the theory is that your vehicle should have incorporated this safety technology, but did not.

c. Injury Profile

When excess slack is introduced into the restraint system, often the upper torso is not properly restrained. This can result in full ejections, partial ejections and interior head strikes. With the interior strikes and partial ejections, you will often see head injuries. Complete ejections create a variety of injuries as discussed above.

G. Tires – Detreads and Failure to Warn of Old Tires

a. Crash Profile

With these defects, you will see evidence on the tires, the wheel wells and the roadway of a tire failing. There may be slap marks on the roadway at the location where the tire failure occurred and continuing on for a period. The marks may then go into a yaw as the vehicle begins its loss of control. Many times this is followed by marking and debris fields consistent with a rollover. There should not be any signs of loss of control prior to the indication of the tire failure itself. The wheel well may also have slap marks that are created as tread pulls away from the tire. The tire itself is the key piece of evidence in determining the existence of the defect. It is also critical to eliminate other potential causes of the tire failure. Damage from the roadway, prior tire repairs or chronic under inflation, are often pointed to by the defendants as the cause of the tire failure. A careful forensic analysis of the tire should help eliminate these potential other causes.

b. Mechanism of Defect

Most tire failures associated with current automobile product liability litigation involves tread separation. Tread separation occurs when there is improper bonding between the layers of a tire. These cases involve both manufacturing defects and design defects. The manufacturing allegations allege that the tire manufacturing process was faulty and allowed an improper bonding. The design aspect asserts that different tire designs such as cap plys can prevent tread separations. The tread separates from the tire's bladder and the vehicle becomes very difficult if not impossible to control. Determining the cause for a tread separation should be done in consultation with a qualified tire expert. However, look for polishing on the separated sections, which indicate that the detread occurred over time as oppose to during a single crash impact.

In addition to straight tread separations, there is a new wave of litigation involving the failure to warn of the dangers of older tires. In Europe, manufacturers are now warning consumers about using older tires. However, no such warnings currently exist in the United States. Most often, these failure-to-warn cases exist when a spare tire goes unused for an extended period of time. When called in to use, the tire appears pristine and with plenty of tread. However, time has compromised the integrity of the tire to the extent that a failure can occur. Tire manufacturers in the United States should take the lead of their European counter parts and warn that older tires may be unsafe.

c. Injury Profile

The injury profile is simple with this defect. If the vehicle had good tires, the accident would have been avoided and there would be no injury. Medical causation is not the issue in these cases.

H. Stability

a. Crash Profile

Most vehicles—even sport cars will roll under certain road conditions. Take a sports car off the road and down an embankment and it will likely rollover. However, on a flat roadway, that same sports car will skid or spin out before it will rollover. Vehicles should be designed to skid out on the roadway, rather than rollover. These concepts are critical to a stability case. To have a good stability case the vehicle must "trip" or began its rollover on the roadway rather than off the roadway (where many vehicles will roll). The accident reconstruction should show an on-road trip and no excess speed.

b. Mechanism of the Defect

The basic allegation is that the vehicle is designed with a center of gravity that is too high and a track width that is too narrow. This design allows the vehicle to tip and roll under foreseeable on-road maneuvers rather than simply skid out.

c. Injury Profile

The injury profile is simple with this defect. If the vehicle had a proper design, the accident would have been avoided and there would be no injury. Medical causation is not the issue in these cases.

I. Roof Crush

a. Crash Profile

In a roof crush case, the allegation is that the roof structure was too weak and crushed onto the restrained occupant(s). It is critical in these cases to show that the occupants were wearing seatbelts at the time of the crash. Even well designed roofs will crush in extreme conditions—such as excessive speed, a steep embankment or a drop off. Thus, you look for a crash profile that includes lower speeds, fewer numbers of rolls and the rolls occurring on a relative flat surface. The roof on the vehicle should be more than partially crushed or deformed. Most good roof crush cases have the area over the injured party crushed down to near the level of or beyond the head rest.

b. Mechanism of the Defect

A weakness in the design of the roof allows it to crush under non extreme conditions. The reasons for weak roofs are as varied as the number of model vehicles. Some vehicles remove steel sections of the support structures to save expense and weight. Other vehicles have suicide doors without supporting b-pillars. Other vehicles are very heavy (like super duty trucks), but do not have stronger roofs to support the additional vehicle weight.

c. Injury Profile

C-spine burst fractures, positional asphyxiation and head injuries with clear severe contacts to the apex of the head are the types of injuries most often associated with roof crush. There will generally not be causation with T-spine, L-spine, mid and lower extremity injuries. Also, be careful with head injuries as many times they will be caused by partial ejection and not roof crush.

J. Fire Cases

a. Crash Profile

Generally look for a crash profile that is a relatively non-severe, survivable crash, except for extensive fire damage. This is important for two reasons. First, many extremely severe crashes with impacts to the fuel lines and motor will have fires regardless of the design. After all, the car does need gas to run. In these crashes, it is hard to prove that a safer alternative design would have prevented the fire or the death. Look for fires that originated in other areas such as the gas tank or in the electrical system. Rear impacts can compromise the gas tanks if the tanks are not properly shielded and contained within the frame of the vehicle. Think—Ford Pintos, GM side-saddle tanks, and Crown Victorias.

b. Mechanism of the Defect

The causes of fire vary widely. If you have a potential case with a vehicle fire, look first at the origin of the fire. If the origin is the electrical system—radios, computers, cruise controls, on board electronics, then move forward with the case. If the origin is the gas tank or fuel lines from the tank to the engine, then proceed forward with the case. If the origin is in the engine, proceed with extreme causation only after qualified expert analyses.

c. Injury Profile

Obviously, the injury profile will be burns. To the extent that it is allowed by the evidence, you want to eliminate other life threaten injuries. Soot and smoke in the throat and lungs is good evidence that the initial impact was survived and the fire was the cause of the loss of life.

K. Glass

a. Crash Profile

Look for a crash profile where an occupant experiences partial or total ejection. You also need a tempered glass window that was broken in the collision. It is important (as with most cases) that the occupant was properly belted.

b. Mechanism of the Defect

Front windshields have laminated glass. Laminated glass contains an inner liner of plastic or laminate. This laminate allows the glass to break, but helps prevent the glass from exploding into piece leaving open large ejection portals. Thereby, the laminate provides some level of protection against ejection through the front windshield. Most cars, however, only have laminated glass on the windshield and have tempered glass on the other windows. Tempered glass explodes into small piece upon impact creating large ejection portals. The defect allegation is that laminated glass should have been used instead of tempered glass. The change in glass type would have prevented the ejection or partial ejection injuries.

A caveat--the manufacturers do not generally believe this is a strong cause of action. It is best to plead this cause of action along with another cause of action such as a seatbelt claim.

c. Injury Profile

Glass cases have injuries that are either partial or total ejection injuries as discussed in detail above.

L. Seatback Failures

a. Crash profile

Seatback failures occur with collisions that have a rearward component. Usually, the collision is a rear impact collision. Look for the rear impacts that have both a seatback failure and a lower ΔV. It is also essential that the occupant is belted.

b. Mechanism of the Defect

The occupant's weight in the rear impact causes a poorly designed seat back to fail. The seatback can fail for several reasons. The seat back's support structures can fail. But more common, the reclining mechanism fails. Both modes of failure allow the seat back into a reclined position. In this position (particularly in a seat without ABTS), there is little restraining capacity left in the restraint system.

c. Injury Profile

Seat back failures usually result in the occupant ramping out of the seat. Many times the occupant is completely ejected from the vehicle. Due to the trajectory of the ejection, you will often see severe head injuries and cervical spine burst fractures. However, you can also see a variety of other post ejection injuries. Sometimes the occupant will be ejected or partially ejected from the seat and contact an interior component of the vehicle such as the roof.

The saddest injuries caused by seatback failures are to children riding in the rear seats. Their injuries are caused both by the collapse of the front seat onto them and by contact with the ejecting front seat occupant.

M. Child Restraints and Forgotten Children

See Appendix A

N. Trunk Shielding

a. Crash profile

Look for a crash with primarily a frontal component. There will also be intrusion from the truck into and sometime through the rear seats.

b. Mechanism of the Defect

There are no warnings about what can safely be placed in the trunk. No limitations on weight or type of object are provided by the manufacturers. Indeed, the manufacturers themselves often place tires, jacks, tire tools, batteries and other heavy objects in the trunk. These objects become projectiles in a crash. If the crash has a frontal component, the objects fly toward the rear seats. If there is not a proper shield between the trunk and the rear seats, these objects can intruded into the occupant space and cause serious injury. Especially at risk are the rear seat occupants who are often our children.

c. Injury Profile

Medical causation is generally easy in these cases. It should be obvious that the injury was caused by a projectile from the trunk.

IV. NOVEL DEFECT ISSUES

Product liability theories evolve and often lead vehicle safety design. Hot product theories five to ten years ago are now obsolete as the manufacturers have incorporated product safety changes. New theories rise with science and technology—for example ESC & Airbags.

Prosecuting novel defect theories can be exciting and interesting. However, before pursuing a novel theory, you should carefully consider several things. With proven defect theories, the experts have already completed most of the needed testing, the key documents have mostly been discovered, and the manufacturers have a historical basis for valuing and settling the cases. This makes the case more economically feasible because they are less expensive to work up and are more likely to settle earlier in the litigation. But this is not true if the defect theory is a novel one.

With a novel defect theory, your experts are going to need to do extensive testing of the products and the proposed safer alternative designs. The manufacturer will generally not consider settling these cases until well after they have conducted their own testing, fully evaluated your experts' testing and completed all expert discovery. Even then, the manufacturer typically will try a number of test cases to determine whether the case is mostly defensible and if it is not defensible, what is an appropriate value. Do not be discouraged from pursuit of a novel defect theory; just chose a very strong test case.

V. CONCLUSION

Automotive products liability litigation is one of the most challenging and interesting areas of Plaintiff's personal injury litigation. In considering undertaking one of these cases, carefully review the crash profile, gain an in depth understanding of the defect and how it works, and finally insure you have medical causation. Hopefully, this paper will help you in the initial evaluation and screening process. While deciding to move forward with a case can be time consuming and expensive, helping your client and facing an interesting new challenge can be a tremendously satisfying undertaking.

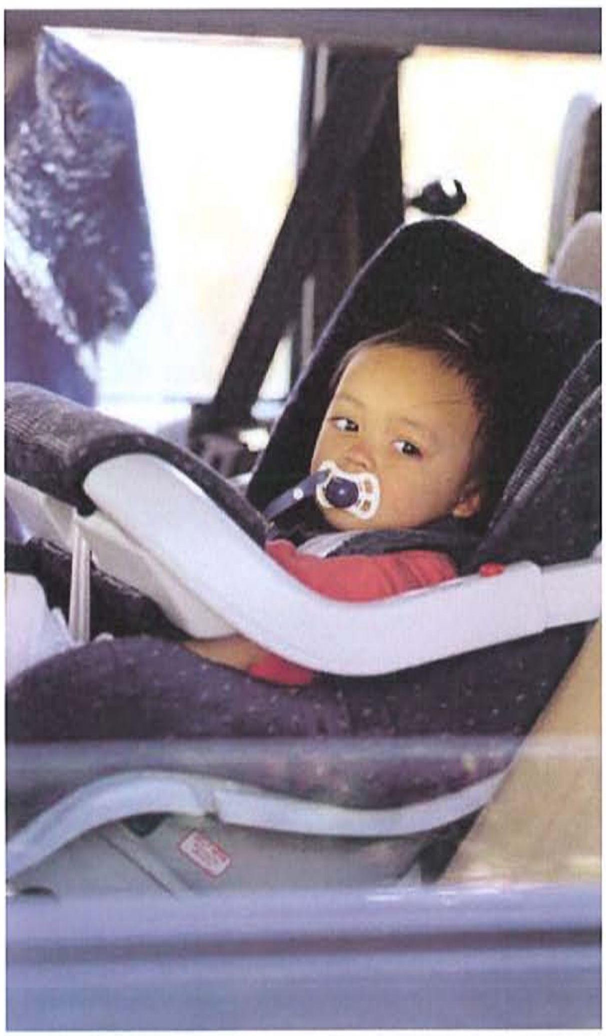
APPENDIX "A"

PayneLawGroup

The Verdict

the winter 2006 edition

Opening Statement



Under crash forces, excessive movement between the child restraint and the automotive seat can cause whipping action, exposing your child to dangerous abrupt acceleration changes, which may cause brain damage.

CHILD RESTRAINT SAFETY

Over 500 children are killed and many more injured each year due to a lack of effective restraint. A significant number of the deaths and injuries suffered by our most precious cargo – our children – could be avoided by design and warning changes, which should be made by automobile and child restraint manufacturers. This article will first focus on potential dangers to our babies and toddlers; make recommendations for parents to protect their youngest children; and suggest design changes that manufacturers should implement. The second portion of this article addresses the "forgotten children." Children between 4 years and 8 years are often taken out of child restraints, yet cannot safely be restrained in adult automotive seat belts. Automotive manufacturers need to make changes to protect the gap in safety that exists with our forgotten children.

Let's first focus on the smaller children – those under 4 years of age or 40 pounds. How are these young children being injured and killed in collisions? This article examines two recurring safety problems with our infant child restraints: (1) improper fit between the child restraint and the automotive seat and (2) poorly designed harness systems, which should, but many times do not, hold your child into the restraint.

Injuries can be caused when the child restraint does not fit properly into the automotive seat.

Injuries can be caused when the child restraint does not fit properly into the automotive seat. Is there any vertical or horizontal play or movement between your child restraint and the automotive seat? Without a tether, your rear-facing child restraint almost certainly has excessive vertical play. Can you lift the top of the rear-facing seat up toward the roof of your automobile? Under crash forces, this play or movement can

CONTINUED ON PAGE TWO

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whipping action, exposing your child to dangerous abrupt acceleration changes, which may cause brain damage. Child restraints without upper tethers (in both the rear-facing and forward-facing configurations) will rotate about the lap belt, either dumping the child in the forward-facing position or slamming the child into the carrier arm or automotive seat in the rear-facing position. Further, excess movement can result in head excursions and associated injuries.

Until car manufacturers integrate child restraints into their vehicles, parents can take several important steps to reduce the injuries associated with a poor fit between the child restraint and automobile seat. First, do not buy your child restraint in a vacuum. Test several different restraints to determine which model best fits your car. Second, ensure that the child restraint has an upper tether strap. This tether will not only help secure the seat horizontally, but can eliminate the dangers of vertical rotation. Also, install the child restraint as tightly as possible into the automobile seat. Place a knee in the restraint and pull the belts to maximize the fit. If you can easily move the restraint a few inches side to side, it is not safely installed. Finally, in September of 2002, the National Traffic Highway Safety Administration begin requiring child restraints be tested with the new LATCH (Lower Anchors and Tethers for Children) system. The LATCH system provides a significant improvement in problems caused by a poor fit between the child restraint and automotive seat. Most new cars and child restraints have this important safety feature. If these systems are available on your vehicle and child seat, use them. If not, consider updating for the safety of you and your youngest passengers.

In addition to harm caused by improper fit between the child restraint and automotive seats, many times the harness system is the culprit in injuries and death. The harness system is the safety belt(s) used to restrain the child to the restraint. If a child seat harness (or belt) meets the FMVSS (Federal Motor Vehicle Safety Standards) performance standards, then it is approved for sale and distribution in the United States. There is no specific design requirement. As a result, there are several different designs of harness systems available. Some of these include are: 3-point harnesses, shield systems and 5-point harnesses. The first two designs should be avoided, as they both can present unnecessary dangers.

The 3-point harness incorporates two straps over the child's shoulders meeting at one point in the crotch. Because of the single lower restraint point, this design is susceptible to ejection, an over-concentration of lower body forces and submarining.

Moreover, 3-point restraints often used friction-based chest clips. Chest clips should work to hold the two shoulder straps in proper position over your child's torso. Friction-based clips are often weak and easily slide up and down the straps. A chest clip that is out of position can lead to ejection. Better chest clips are based on spring buckle systems, which reduce this problem. These spring systems more often are incorporated on 5-point harness systems.

The next design, a shield system, is the most dangerous. Shield systems were introduced in 1979 and were designed to be used in conjunction with a lap belt. The shield systems are dangerous because they offer no or insufficient upper torso restraint. As a result, frontal collision forces concentrate on the abdomen, causing hyper-flexion over the shield. Too many children are paraplegics because of lower spinal injuries associated with this design. Parents, if you have a child restraint that incorporates a shield, throw it in the trash.

The safest harness system is a 5-point restraint. The 5-point restraint incorporates two straps over the child's shoulders and two straps over the pelvis, all buckling at the mid-line over the crotch. The 5-point restraint is the safest design because it distributes crash loads and helps prevent submarining and ejection problems associated with the lesser designs.

What happens to our toddlers when they become children? The last portion of this paper deals with safety for your children. Vehicle manufacturers design automotive belts for average adults, but have forgotten children. Children between 4 and 8 years of age are often too big for regular child safety seats and too small for adult safety belts. Children under 80 pounds and 49 inches generally do not fit correctly in adult restraints. Shoulder restraints contact the children's necks, often resulting in cervical fractures and quadriplegia.

Children will also submarine, causing abdominal and lumbar injuries. Parents with children ages 4 to 8 should place them in a booster with an integrated back and a 5-point harness system designed to fit the child. Some boosters raise the child, but use the vehicle's seatback and seatbelt to restrain the child's body. These designs, while sometimes allowing for a better fit within the automotive belt, are not nearly as effective as those with integrated backs and 5-point harness designs. Ultimately car manufacturers should integrate built-in child restraints for the forgotten children. These designs have been commercially available since the 1980s and should be made available in all fleets. Until integrated child seats are widely available, place your children between 4 and 8 years who are under 80 pounds and under 49 inches into a booster with an integrated back and a 5-point harness system.

We hope these tips will help protect you and your loved ones given the limitations of today's designs. At Payne Law Group we will continue to fight for safer designs for the benefit of all of our children. If you have a question about or a potential case involving child restraints, contact Andy Payne at andy@paynelawgroup.com.