

REPORTED

IN THE COURT OF SPECIAL APPEALS

OF MARYLAND

No. 1511

September Term, 1999

ANITA J. WOOD

v.

TOYOTA MOTOR CORPORATION, et al.

Murphy, C.J.,
Davis,
L. Leonard Ruben,
(Retired, Specially Assigned),

JJ.

Opinion by Murphy, C.J.

Filed: October 5, 2000

In the Circuit Court for Prince George's County, Anita Wood, appellant, asserted a products liability action in which she claimed that the driver's air bag in her 1993 Toyota Tercel automobile ("Tercel") had been defectively designed. After the Honorable Michelle D. Hotten granted appellees' motions (1) in limine and (2) for summary judgment,¹ this appeal followed, in which appellant presents two questions for our review:

I. Did the circuit court err in granting appellee's motion for summary judgment?

II. Did the circuit court abuse its discretion by granting appellee's motion in limine and excluding the testimony of appellant's expert witness?

¹ The appellees in the case are (1) Toyota Motor Corporation (manufacturer), (2) Toyota Motor Sales, U.S.A., Inc.(distributor), (3) Central Atlantic Toyota Distributors, Inc.(distributor), and (4) Rosenthal Landover Enterprises, Inc. (dealer). For purposes of this appeal, we refer to appellees jointly as "Toyota."

For the reasons that follow, we shall answer "no" to each question and affirm the judgment of the circuit court.

Background

Appellant claimed that on April 25, 1995, while driving her Tercel, she was involved in an automobile accident during which she suffered chemical burns to her cheek when she was struck in the face by the air bag on the driver's side of the vehicle.² Appellant identified Michael D. Leshner as an expert witness who would testify that the chemical burns she sustained in the accident were caused by a design defect in the air bag.³ Toyota moved in limine to exclude Mr. Leshner's testimony. Judge Hotten granted that motion. Toyota then moved for summary judgment on the ground that the cause of

² Although appellant suffered no broken facial bones in the accident, she claimed that, in addition to the chemical burns, she received other injuries to her cheeks, nose, and upper lip.

³ Mr. Leshner was prepared to express the following opinion:

I believe that the location of the vent holes and the method of folding the bag made it much more likely that hazardous materials that exit the bag would come into contact with the driver. And, in fact based on the location of the vent holes, and the folding pattern, more likely that it would come into contact with the driver's face. And based on the folding pattern that there also would be some additional risk of the driver being struck by the bag in concert with getting hazardous chemicals deposited on their face which would aggravate the reaction and the effect of those chemicals. So, based on all the things that we've discussed, I think the location of the vent holes, and the method of folding of the bag constitute defects.

action asserted in this case requires the presentation of expert testimony. Judge Hotten granted that motion and this appeal followed.

Discussion

I. Expert Testimony in Air Bag Cases

When ruling on Toyota's motion for summary judgment,⁴ Judge Hotten stated the following explanation for her conclusion of law that expert testimony is required to generate the issue of whether a person's injury was caused by a design defect in a vehicle's air bag:

The standard is whether a fair minded jury could find for the plaintiff in light of the pleadings and the evidence presented, and there must be more than a scintilla of evidence in order to proceed to trial, as set forth in the case of *Seaboard Surety Company v. Richard Kline, Inc.*, 91 Md.[App.] 21, which was a 1992 appellate decision.

Additionally, if the facts are susceptible to more than one inference, inference must be drawn in favor of the moving party....

The main issues before the court

⁴ Summary judgment is appropriate when "there is no genuine dispute as to any material fact and that the party is entitled to judgment as a matter of law." Md.Rule 2-501(a). The "standard for appellate review of a trial court's grant of a motion for summary judgment is simply whether the trial court was legally correct." *Beatty v. Trailmaster Products, Inc.*, 330 Md. 726, 737 (1993) (internal citations omitted). A "denial (as distinguishable from a grant) of a summary judgment motion... involves not only pure legal questions but also an exercise of discretion...; and we further hold that, on appeal, absent clear abuse..., the manner in which this discretion is exercised will not be disturbed." *Presbyterian Hospital v. Wilson*, 99 Md.App. 305, 312 (1994).

relative to the plaintiff's complaint and amendments thereto are issues relative to products liability negligence and breach of warranty, among others.

The plaintiff's assertion, which has been set forth in exhausting detail by the testimony of Mr. Leshner, and as set forth in the appropriate pleadings and arguments is that in fact as a result of a defect in the air bag system that she was injured, and that there was a causal connection between that defect and the injury.

As such, the plaintiff, to support her theories, must assert or establish that, one, a defect existed. Two, that somehow the defect was peculiarly within the pervue of the defendant; that is, that the defect is somehow attributable to the defendant under the appropriate legal theory or standard, and that the plaintiff was injured, and that there is a causal relationship between this defect and her injuries.

The general rule is well established that expert testimony is only required when the subject of the inference is so particularly related to some science or profession that it is beyond the ken of the average layman.

Experts are not required, however, on matters on which the jurors would be aware by virtue of common knowledge.

Air bag technology is highly specialized, and while no Maryland cases have been decided on this issue, other jurisdictions have required an expert in air bag deployment and defect cases.

Without expert testimony in this case the peculiar issues before the court are outside the realm of lay juror's understanding, and without it the theories asserted by the plaintiff are speculative at best.

The court does not believe that the theory of Res Ipsa Loquitur is appropriate under the circumstances and the issues

presented.

Accordingly, upon consideration of the arguments that have been presented relative to the defendant's motion for summary judgment, the court's review of the record and the pleadings, the court at this time grants the motion for summary judgment in the defendant's favor, pursuant to Maryland Rule 2-501.

We agree with that analysis, which is consistent with other appellate courts that have considered the question, including *Britt v. Chrysler Corp.*, 699 So.2d 179 (Ala.1997), in which the Civil Court of Appeals of Alabama affirmed the entry of summary judgment against a plaintiff who had failed to proffer expert testimony:

The airbag system involved in this case is comprised of clock spring sensors, diagnostic units, and an airbag/inflator unit. Therefore, we hold that an airbag system is "precisely the type of complex and technical commodity that [requires] expert testimony to prove an alleged defect."

Britt, 699 So.2d at 181 (internal citations omitted).⁵

In a products liability case, the plaintiff must prove "(1) the existence of a defect; (2) the attribution of the defect to the seller; and (3) a causal relation between the

⁵ See also *Tiner v. General Motors Corp.*, 909 F.Supp. 112 (N.D.N.Y.1995) (plaintiff required to present expert testimony in products liability case alleging defective seat belt design); *St. Clair v. General Motors Corp.*, 10 F.Supp.2d 523 (N.D.N.C. 1998) ("driver could not establish that his air bag was defective in absence of expert testimony"); *Demaree v. Toyota Motor Corp.*, 37 F.Supp.2d 959 (D.Ky.1999).

defect and the injury." *Jenson v. American Motors Corp.*, 50 Md.App. 226, 234 (1981). It is well settled that expert testimony is required "when the subject of the inference is so particularly related to some science or profession that it is beyond the ken of the average layman." *Hartford Accident and Indemnity Comp. v. Scarlett Harbor Assoc. Limited Partnership*, 109 Md.App. 217, 257 (1996), aff'd 346 Md. 122 (1997) (citing *Virgil v. "Kash N' Karry" Service Corp.*, 61 Md.App. 23,23 (1984), cert. denied, 302 Md. 681 (1985)).

Although "[e]xpert testimony is not required... on matters of which the jurors would be aware by virtue of common knowledge," *Babylon v. Scruton*, 215 Md. 299, 307 (1958)), the issue of whether an air bag was defectively designed is well "beyond the ken of the average layman." The correct resolution of that issue requires the application of science, mechanics, and engineering, rather than of matters that jurors "would be aware [of] by virtue of common knowledge." We therefore hold that the products liability plaintiff who claims to have been injured due to the defective design of an air bag must present expert testimony to generate a jury issue on whether the air bag was defective.⁶

⁶ Appellant argued in the alternative that, because the doctrine of *res ipsa loquitur* applies to this case, expert testimony is not required. Judge

II. Expert Testimony

Judge Hotten stated the following explanation for her decision to grant Toyota's motion in limine:

Maryland Rule 5-702 governs expert testimony, and provides such testimony will be admitted if it will assist the trier of fact to understand the evidence, or determine a fact in issue, and if, one, the witness is qualified to render the expert opinion by virtue of knowledge, skill, training or experience or education; and two, that there is a sufficient factual basis to support the expert factual opinions made by that witness; and three, that the expert testimony is appropriate on this subject.

Mr. Leshner's testimony, unfortunately, does not meet the requirements of Maryland Rule 5-702 in terms of his qualifications and sufficiency of the factual basis for his opinions or assumptions.

Had Mr. Leshner been minimally

Hotten rejected that argument. So do we.

Successful reliance upon the doctrine of *res ipsa loquitur* requires proof of each of the following: first, a causality of a sort that usually does not occur in the absence of negligence; second, caused by an instrumentality within the defendant's exclusive control; and finally, circumstances indicating that the casualty did not result from the act or omission of the plaintiff.

Bell v. Heitkamp, Inc., 126 Md.App. 211, 227 (1999). "Proof of a defect [in a products liability case] must rise above surmise, conjecture or speculation, *Woolley v. Uebelhor*, 239 Md. 318, 325 (1964); and one's right to recovery may not rest on any presumption from the happening of an accident. *Brehm v. Lorenz*, 206 Md. 500 (1995). *Res ipsa loquitur* does not apply." *Jensen, supra* at 232. See also *Harrison v. Bill Cairns Pontiac of Marlow Heights, Inc.*, 77 Md.App. 41 (1988).

qualified to render the expert opinions proffered, I would have agreed with plaintiff's counsel that any objections by the defendant relative to Mr. Leshner's training, expertise or basis of knowledge would go to the weight of the evidence, and not to its admissibility.

Unfortunately, such is not the case at bar. Accordingly, reluctantly, upon consideration of testimony, the motion at this time is granted.

Appellant asserts that this ruling was incorrect.⁷ We are not persuaded, however, that Judge Hotten's decision constituted an unfairly prejudicial abuse of discretion.⁸

A. The Qualifications Issue

Mr. Leshner has been a mechanical engineer for twenty-six years and has a state license in professional engineering. He has a bachelor's degree in science and completed one year of graduate studies. He worked as mechanical engineer for

⁷ Md.Rule 5-702 provides, in pertinent part, that ...the court shall determine (1) whether the witness is qualified as an expert by knowledge, skill, experience, training, or education, (2) the appropriateness of the expert testimony on the particular subject, and (3) whether a sufficient factual basis exists to support the expert testimony.

⁸ The "admissibility of expert testimony is a matter largely within the discretion of the trial court and its action will seldom constitute a ground for reversal." *Myers v. Celotex Corp.*, 88 Md.App. 442, 460 (1991)(holding that the judge did not abuse his discretion, but applied an incorrect standard). This is not a case like *Myers*, however, where the trial judge applied the wrong standard. "The decision to admit or exclude 'expert' testimony is within the broad discretion of the trial court and that decision will be sustained on appeal unless it is shown to be manifestly erroneous." *Troja v. Black & Decker Mfg. Co.*, 62 Md.App. 101, 110 (1985)(citing *I.W. Berman Properties v. Porter Brothers, Inc.*, 276 Md. 1 (1975)).

several companies on systems such as automotive cooling and heating, air conditioning, defrosting, engine electronics, control systems, and hospital equipment.

Mr. Leshner is a member of several societies, including the National Society of Professional Engineers, National Forensic Center, National Association of Professional Accident Reconstruction Specialists, and National Academy of Forensic Engineers. He had held 15 U.S. patents and some corresponding foreign patents on automotive electronic control systems, medical products, stoves, and combustion. Mr. Leshner admitted that none of these patents related to air bag systems or components. He has also published several articles, but none of the articles involved air bags.

Mr. Leshner has never been accepted as an expert witness in a trial involving air bag design. His knowledge of air bags was mostly (if not entirely) derived from his employment as a litigation consultant.⁹ He is not a medical doctor and has no medical training. He does not have any "hands on" experience relating to air bag technology, and none of the

⁹Mr. Leshner has never worked *for* an automobile manufacturer. As a litigation consultant, he has worked *with* manufacturers, corresponded with other experts, and reviewed industry documents, specifically Toyota's "test reports, test protocols... having to do with air bag testing and crash testing." He has no employment history "that directly involve[d] air bags." None of his work for any of the companies where he was employed "involved the design, manufacture, assembly, or testing of air bag systems."

courses he has taken involved "air bag design, manufacture or assembly."

Although Mr. Leshner held himself out as a "expert in air bag technology," "air bag denting," and "air bag folding patterns," he has never (1) designed an air bag system, (2) designed a component for an air bag system, (3) "been to a plant where air bags or air bag components are manufactured," nor (4) seen a video of air bag components being installed into a vehicle. Mr. Leshner had not personally "seen an air bag system or any of its components being installed into a car," nor had he been to any automotive assembly plants since the mid 1980's. He also never (1) "designed a protocol or a methodology for analyzing an air bag system or an air bag component," (2) personally saw an air bag deployed, nor (3) "personally conducted or participated in any type of crash test."

Although an expert is "qualified" if he or she demonstrates a "minimal amount of competence or knowledge in the area in which [he] purports to be an expert," *Naughton v. Bankier*, 114 Md.App. 641, 655 (1997), we are not persuaded that Judge Hotten erred or abused her discretion in concluding that Mr. Leshner was not qualified to express the proffered opinion.

B. The "Factual Basis" Issue

Mr. Leshner's opinion was based on: (1) general engineering principles, (2) his examination of the subject air bag and other components from appellant's car,¹⁰ (3) his interpretation of a photograph taken of appellant two days after the accident (looking at the "circular mark on her cheek [which was the] same size and shape as the vents in the air bag," (4) his review of appellant's medical records, (5) his analysis of other air bag cases, (6) his understanding that appellant was wearing her seat belt when the accident occurred,¹¹ and Toyota's supplemental responses to appellant's request for admissions, in which Toyota stated that "a minute amount of sodium hydroxide" was generated during deployment, and that air bags might have caused "minor burns, or abrasions

¹⁰ Mr. Leshner testified that, when examining the air bag filter, he found white residue on the outside of the filter. He did not have the substance analyzed, but opined that it was "based on my reading and understanding of what comes out of an air bag containing sodium azide, the solid material that gets through the screen would be white and it would be a crusty material."

¹¹ Mr. Leshner opined that, because of appellant's size, she sat closer to the air bag than the average sized driver. This opinion was not based on (1) a personal examination of plaintiff's vehicle, (2) an experiment that would place appellant (or a person of her size) in the vehicle involved in the accident or in any similar vehicle to see how close appellant actually was to the air bag, or (3) the examination of any 1993 Tercel. The only thing he did with appellant when he met her was "to put her in her current vehicle [a 1985 Toyota Corolla]." Moreover, appellant testified at deposition that she always sat as far back as possible from the steering wheel when she drove the Tercel, which was in direct contradiction with Mr. Leshner's theory.

and swelling."

In addition, Mr. Leshner examined photographs of crash tests conducted with a crash dummy, where red make-up was placed on the face of the dummy. He claimed that he was able to determine where the air bag hit the dummy's face from observing where the red make-up ended up on the air bag. Although the make-up had also been placed on the dummy's arms, hands, knees, and steering wheel, Mr. Leshner stated that he could nonetheless distinguish "what red, on these air bags, comes from the face as opposed to the arms, the hands, or the knees, or the steering wheel."

Mr. Leshner reviewed expert testimony presented in other air bag cases, and he conducted a search of the National Highway Traffic Safety Administration website and determined that several persons had complained about being "burned" by air bags. He did not, however, conduct a follow-up investigation of any of these complaints, none of which mentioned the word "chemical."

It is well settled that the trial judge -- not the expert witness -- determines whether there exists an adequate factual basis for the opinion at issue. *Madden v. Mercantile-Safe Deposit & Trust Co.*, 27 Md.App. 17, 44 (1975). We are not persuaded that Judge Hotten was clearly erroneous in finding

that Mr. Leshner's opinion was based on an incomplete factual predicate.

C. The Methodology Issue

Even if we were to assume that Mr. Leshner were (1) minimally qualified to express an opinion, and (2) had an adequate factual basis for the opinion he was prepared to express, we would nonetheless affirm Judge Hotten's *in limine* ruling.¹² Mr. Leshner never explained how the data upon which he relied led him to the conclusion that the size of the vent holes caused appellant's injuries. Thus, his opinion was properly excluded under Maryland Rule 5-702 and the cases interpreting that rule.¹³ No trier of fact could conclude that

¹² Because the trial judge has discretion to grant or deny a motion for summary judgment, rare are the occasions on which the appellate court can affirm a summary judgment on grounds other than those relied upon by the trial judge. On the other hand, an appellate court is entitled to sustain an evidentiary ruling "for a reason plainly appearing on the record whether or not the reason was expressly relied upon by the trial court." *United Steelworkers v. Beth. Steel*, 298 Md. 665, 679 (1984).

¹³ Our case law is consistent with the amendments to Rule 702 of the Federal Rules of Evidence (Testimony by Experts), which take effect on December 1, 2000, when FRE 702 will provide:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise if **(1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.**

vent holes in an air bag caused an injury merely because an expert said that they did. Mr. Leshner's theory provided no rational explanation for why the size or location of the vent holes had anything to do with the injuries that appellant sustained.

Mr. Leshner had admitted at deposition that it "would be impossible to estimate" the precise direction that the vent holes were facing before, during, and after contact with appellant's face. He reviewed a test report prepared by Toyota "which compares the potential for [thermal]burns, based on different vent locations....," but he conducted "[n]o testing to determine the effect on the gas flow of moving the vent holes from their present location on the 1993 Tercel air bag," and "no testing, of any kind, to determine whether moving the vent holes to a 9:00 and 3:00 position would increase or decrease the possibility of burn injuries." Mr. Leshner also admitted that he did not have an opinion as to whether one of his exhibits - an alternative airbag - was defective in design, or whether it was part of a defective system.

At the time Mr. Leshner formed his opinions and prepared his report, he had not (1) "interviewed nor spoken to the

(Emphasis added).

plaintiff," (2) read plaintiff's deposition, (3) talked to any of the witness or any other parties, or (4) reviewed the police report. In fact, Mr. Leshner's total inspection "of the air bag in this case... was one half hour or maybe even less," during which time he examined the air bag itself, examined the module, and disassembled the module from the bag.

With regard to the 1993 Tercel, Mr. Leshner did not know (1) where the sensors were for the air bag system, (2) how many sensors there were for that system, (3) the "precise threshold at which the air bag is designed to deploy," (4) "what chemical charge is used in the igniter for the" air bag system, (5) "whether, after that charge ignite[d] the sodium azide, there [were] any bi-products left over from the chemical charge," (6) whether any of the chemical bi-products were toxic, (7) the amount of sodium azide ignited, (8) the size of screens on the air bag's inflator, or (9) the size of the particles emitted through the screens of the filter. He had not measured (1) how far apart the vent holes were from one another, or (2) the distance between appellant's cheeks.

Mr. Leshner agreed that (1) the Tercel air bag complied with governmental standards,¹⁴ (2) an air bag can be non-

¹⁴ Mr. Leshner did not know the "precise amount of sodium hydroxide emitted from any type of air bag for any manufacturer," or of "any manufacturer in 1993 that used a better method of folding the air bag than ...

defective and still cause injury, (3) there was no manufacturing defect in the Tercel, and (4) the air bag operated in conformance with its design. He also agreed that "none of the components on this particular air bag were improperly assembled," and that - as of 1993 - he knew of no alternative to sodium azide as the premier chemical charger for air bags. Moreover, he conceded that in every air bag system "there will always be some amount of sodium hydroxide that will pass through the filter and into the air bag," because no filter could trap all the particles.

In *Beatty v. Trailmaster*, 330 Md. 726 (1993), the Court of Appeals affirmed a summary judgment entered against a plaintiff who proffered the testimony of a qualified expert who could offer no "scientific evidence... [or] sound data to buttress his opinion." *Id.* at 740. In that case, the expert had in essence furnished a "because I say so" explanation for his conclusion that a device installed on a motor vehicle was "unsafe." The *Beatty* Court rejected that explanation on the ground that "[o]ur cases hold that 'an expert's opinion is of no greater probative value than the soundness of his reasons given therefor will warrant.'" *Surkovich v. Doub*, 258 Md. 263,

used in the Toyota Tercel."

272 (1970), and cases there cited." *Beatty* requires that we affirm Judge Hotten's decision to exclude the opinion at issue in this case.

Cases in other jurisdictions support our holding that Judge Hotten did not abuse her discretion. For instance, in *Demaree v. Toyota Motor Corp.*, *supra*, the plaintiff sustained injuries to her wrists and arms when her driver's side air bag deployed in a motor vehicle collision, and presented expert testimony that the air bag was defective because it should have deployed at 20-25 miles per hour in a "frontal, fixed barrier collision," not the way it did deploy. The United States District Court for the District of Kentucky held that the expert's opinion was based solely on conjecture and speculation and was not grounded in any scientific bases. Although the court applied the *Daubert*¹⁵ test for admissibility of expert testimony, its analysis is helpful to the case *sub judice*. The expert in *Demaree* (1) had not published on the theory he was promulgating, (2) did not personally perform crash tests to support his theory, (3) presented no

¹⁵ The *Daubert* test is "whether the expert's testimony reflects 'scientific knowledge,' whether the findings are 'derived from the scientific method,' and whether their work products amounts to 'good science.'" *Id.* at 961 (citing *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993)).

mathematical calculations, and (4) offered no specific test data on the particular subject presented, thus indicating a lack "of the usual indicia of reliability." *Id.* at 963-65.

In *Britt, supra*, the Civil Court of Appeals of Alabama affirmed the trial court's exclusion of a plaintiff's expert testimony in an air bag case because the expert did not provide an adequate explanation for the basis of his opinion.¹⁶ During his deposition, the expert conceded that he had not (1) been to the scene of the accident, (2) seen the car involved in the accident, (3) known the speed plaintiff was traveling before the crash, (4) known the angle of the impact of the crash, nor (5) known the cause of the plaintiff's injuries. *Id.* at 180-82. Although the expert submitted a post-deposition affidavit that contradicted his deposition testimony, the appellate court concluded that the trial judge did not abuse his discretion in excluding the opinion on the ground that the expert had failed to offer an adequate explanation for his "opinion that the air bag system was dangerous and defective." *Id.*

¹⁶ In Alabama, an expert is qualified if the witness has "such knowledge, skill, experience, or training that his opinion will be considered in reason as giving the trier of fact light upon the question to be determined." *Id.* at 182-83 (internal citations omitted). Like Maryland, Alabama also applies the abuse of discretion standard to appellate review of decisions admitting or excluding expert testimony. *Id.* at 182.

Likewise, Mr. Leshner's testimony was properly excluded for lack of an adequate methodology.

**JUDGMENT AFFIRMED; COSTS
TO BE PAID BY APPELLANT.**

