DIVISION ONE
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IN THE COURT OF APPEALS
STATE OF ARIZONA
DIVISION ONE

VIRGINIA L. COX AND JOHN B. COX, wife and husband, Plaintiffs-Appellants, v. FORD MOTOR COMPANY, a Delaware corporation Defendant-Appellee.	1 CA-CV 09-0288 DEPARTMENT E **MEMORANDUM DECISION** (Not for Publication – Rule 28, Arizona Rules of Civil Appellate Procedure)

Appeal from the Superior Court in Maricopa County

Cause No. CV 2005-004666

The Honorable Larry Grant, Judge

REVERSED AND REMANDED

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W E I S B E R G, Judge

¶1 Virginia Cox and her husband, John, (hereinafter "Cox") appeal from the superior court's grant of summary

judgment to Ford Motor Company and dismissal of their product liability suit against Ford. Cox contends that installation of a single stage and single threshold airbag system[1] in Ford's 1995 Ford Crown Victoria automobile rendered the vehicle unreasonably dangerous and caused serious injuries to Virginia when dual stage and dual threshold airbag technology could have been employed to reduce or avoid Virginia's injuries. Cox argues that a jury should determine whether it was reasonable for Ford to have failed to employ this more advanced technology. For reasons that follow, we reverse and remand.

BACKGROUND

¶2 In August 2004, Virginia was a passenger in a 1995 Ford Crown Victoria driven by her husband and was seriously injured when the passenger-side single stage airbag deployed in a low-speed collision. A single stage airbag system deploys with uniform force regardless of the speed of the collision. Experts for both sides agreed that Virginia's hand either was touching or very close to the airbag module door when the airbag deployed, fracturing her arm and flinging her arm into her face, which caused numerous facial injuries. The experts did not

[1]Cox states that a "dual *stage* airbag system is one in which the energy of the airbag deployment is less for 'lower' speed collisions, and higher for high speed collisions. A dual *threshold* airbag system is one in which the velocity thresholds for deployment vary depending on whether the occupant is, or is not, restrained by a seat belt."

agree on whether Virginia had worn her seatbelt, although she and her husband said that she had done so. If she had been belted, according to her experts, a dual threshold airbag most likely would not have deployed at all.

¶3 Cox filed a complaint against Ford and others[2] in March 2005 and alleged, among other things, that the airbag system was defective and unreasonably dangerous due to manufacturing or design defects or improper or defective components. Ford filed three motions for partial summary judgment. Cox conceded one of the motions, and the court granted the other two, entered judgment for Ford, and dismissed the complaint. Cox unsuccessfully moved for a new trial and then timely appealed. We have jurisdiction pursuant to Arizona Revised Statutes ("A.R.S.") section 12-2101(B) (2003).

DISCUSSION

¶4 Summary judgment is proper if no genuine issue of material fact exists and "the moving party is entitled to judgment as a matter of law." Ariz. R. Civ. P. 56 (c). But "if the facts produced in support of the claim or defense have so little probative value, given the quantum of evidence required, that reasonable people could not agree with the conclusion

[2]Cox initially named TRW Safety Systems, Inc., the supplier of the airbag restraint system and Key Safety Systems, Inc., the successor entity to Breed Automotive, which had supplied the sensors used in Ford's airbag. Cox later dismissed Key and TRW from the lawsuit.

advanced by the proponent of the claim or defense," the court may resolve the issue. *Orme Sch. v. Reeves*, 166 Ariz. 301, 309, 802 P.2d 1000, 1008 (1990). On the other hand, summary judgment is not appropriate if a jury could resolve a material issue in favor of either party. *United Bank of Ariz. v. Allyn*, 167 Ariz. 191, 195, 805 P.2d 1012, 1016 (App. 1990).

¶5 To counter Ford's motions, Cox had to offer evidence from which a reasonable jury could find, either directly or by inference, that the probabilities favored her claims. *Orme Sch.*, 166 Ariz. at 310, 802 P.2d at 1009. On appeal, however, we view the record and justified inferences from the evidence in the light most favorable to Cox as the non-moving party. *Nat'l Bank of Ariz. v. Thruston*, 218 Ariz. 112, 116, ¶ 17, 180 P.3d 977, 981 (App. 2008). We review both the grant of summary judgment and issues of statutory interpretation *de novo*. *Bridgestone/Firestone N. Am. Tire, L.L.C. v. Naranjo*, 206 Ariz. 447, 449, ¶ 6, 79 P.3d 1206, 1208 (App. 2003).

¶6 In Arizona, despite a manufacturer's effort to make a safe product, it may be strictly liable for injuries caused by that product's use if the product was in a "defective condition [and] unreasonably dangerous." *Dart v. Wiebe Mfg., Inc.*, 147 Ariz. 242, 244, 709 P.2d 876, 878 (1985) (citation omitted). Thus, to establish a design defect, Cox had to show that Ford manufactured the Crown Victoria, that its airbag design was

defective and unreasonably dangerous,[3] that the defect existed when the vehicle left Ford's control, and that the airbag's defective condition proximately caused the resulting injuries. *Anderson v. Nissei ASB Mach. Co., Ltd.*, 197 Ariz. 168, 172, ¶ 11, 3 P.3d 1088, 1092 (App. 1999). As we held in *Anderson*, a jury usually decides whether a product is defective and whether the plaintiff suffered damages. *Id*. (citing *Dietz v. Waller*, 141 Ariz. 107, 111, 685 P.2d 744, 748 (1984); *Meyer v. Ricklick*, 99 Ariz. 355, 357, 409 P.2d 280, 282 (1965)). A jury also generally determines whether the product proximately caused the claimed injuries unless the facts are undisputed or reasonable jurors could not differ on causation. *Id*. (citation omitted).

¶7 In response to a claim of product liability, a manufacturer may assert an affirmative defense *if "the defect in the product is alleged to result from inadequate design or fabrication, and if the plans or designs . . . or the methods of manufacturing . . . the product conformed with the state of the art* at the time the product was first sold by the defendant." A.R.S. § 12-683(1)(Supp. 2009)[4] (emphasis added). The statute also defines state of the art as the *"technical,*

[3]"A defectively designed product is one that is made as the manufacturer intended it to be but that is unreasonably dangerous." *Gomulka v. Yavapai Mach. & Auto Parts, Inc.*, 155 Ariz. 239, 242, 745 P.2d 986, 989 (App. 1987).

[4]We cite the current version of the applicable statute because no revisions material to this decision have occurred.

mechanical and scientific knowledge of manufacturing, designing, testing or labeling the same or similar products *that was in existence and reasonably feasible for use at the time of manufacture."* A.R.S. § 12-681 (10)(Supp. 2009)(emphasis added).

FORD'S SUMMARY JUDGMENT MOTIONS

Manufacturing Defect or Inadequate Warnings

¶8 Ford first argued that Cox had no evidence to support a claim of a manufacturing defect in either the airbag inflator or crash sensing systems, that the airbag had been manufactured to Ford's specifications, and that no evidence supported a claim of inadequate warnings. Cox conceded these contentions in the superior court.

Dual Stage Inflation

¶9 Cox next argued that the airbag inflation system was defective because in a lower speed collision such as this, the airbag inflated with full force. Ford asserted that single stage inflation conformed to the state of the art in 1995. It also claimed that Cox could not show a causal link between her injury and any defect in the inflation system because any airbag that deployed would have injured her hand given its proximity to the dashboard. Ford further argued that Cox's biomechanical expert, Michelle Hoffman, had done no testing to verify that a dual stage airbag would have reduced Virginia's injuries.

¶10 In response, Cox cited evidence that safer designs would have prevented or reduced her injuries. Dale Weber testified by deposition that this airbag inflation system was defective and that as early as the 1970s General Motors had used a dual stage, dual threshold system that would have deployed with less power and perhaps not deployed at all in a low speed crash. Weber's affidavit stated that Ford's "single stage passenger airbag inflations system . . . [was] unreasonably dangerous and defective" and that the "unnecessarily high power of the . . . deployment . . . was the only cause of the fractures in Mrs. Cox's right upper extremity and her facial bones." Instead, "[a] well-designed first stage of a two stage inflation system . . . would have, much more likely than not, significantly reduced or eliminated [her] injuries."

¶11 Weber also said that *"Allied Signal, Morton International and TRW . . . all had dual stage passenger airbag inflators designed and built that could have been used or adapted for use in the 1995 Crown Victoria*." (Emphasis added.) Testing by these companies had shown that "low levels of airbag inflation . . . [could] provide adequate occupant crash protection in low and moderate crash severities and not cause serious or fatal injuries that full powered airbags would have caused." Weber had worked in the 1990s on testing of two-stage inflation airbags and "saw results from extensive testing that

showed the significant injury reduction benefits of having a two-stage airbag system." He concluded that *"implementation of such low level inflation systems was feasible for Ford's 1995 Crown Victoria models*." (Emphasis added.)

¶12 Similarly, Stanford Hanson testified by deposition that in a low speed collision, "the data . . . indicate[s] that injuries would have been mitigated had there been only a low level deployment." He did not have an opinion about Cox's specific injuries, however, or the position of her hand at the time of impact.

¶13 Hoffman, the biomechanical expert, opined that if Virginia had been belted, she would have received "minor sprains and strains, maybe some bruising." Even if unbelted, she might have sustained fractures but "certainly not to the extent that she received them." Hoffman stated that less severe injuries would have been inflicted by a dual threshold system, which would have raised the threshold for deployment, and by dual stage inflation, which would have deployed less aggressively.

¶14 Cox additionally cited a study begun in Canada in 1993 that showed that airbags reduced injuries in severe crashes but caused injuries in low and moderate speed crashes. For example, belted female drivers suffered more serious arm injuries in low severity crashes with airbags than belted females without an airbag and suffered double the serious injuries of females who

were in severe crashes. As evidence that automakers recognized these risks, Cox noted that in 1996, Ford and others asked a federal agency to authorize use of a different barrier crash test, enabling them to design "improved slower deploying air bags [to] reduce the risk of air bag related fatalities or injuries."

¶15 At oral argument on its motions, Ford asserted that dual threshold sensors were necessary for the dual stage inflation system to work and thus that if it prevailed on its state-of-the-art defense regarding the inflation system, the court likewise must find that omission of dual threshold sensors did not render the car defective. Ford also argued that technology had dramatically changed between 1994 and 2000 when Ford first introduced a dual stage airbag, that there was no dual stage airbag system in existence that could have been used in the 1995 Crown Victoria, and that Ford could not be liable for failing to invent a better airbag in 1995.[5]

¶16 In its ruling, the superior court observed that "no vehicles sold during the 1990s by any manufacturer incorporated

[5]Ford mentions that Cox has offered "no evidence of any car equipped with a lower-power first stage of a dual stage airbag system that could have been legally sold in 1995 and complied with the 1995 federal safety requirements." We note, however, that Ford has not presented evidence affirmatively demonstrating that cars so equipped *would not have complied* with federal requirements. Without facts supporting this assertion, it cannot be the basis for granting Ford's summary judgment.

a dual-stage airbag system," that Ford had made a prima facie showing that a dual stage airbag was not reasonably feasible in 1995, and that General Motor's "experimental dual stage [inflation] system" developed in the 1970s had not been used in production vehicles or been shown to have been "reasonably feasible" in the 1990s. The court noted that the state-of-the-art defense "would be ill-served by a ruling suggesting that decades-old conceptual research could define the state-of-the-art." Thus, "pioneering research" was not state of the art unless it "was actually reasonably feasible for manufacture and sale *without further development*." (Emphasis added.) Because Ford had ample evidence that its inflation system was state of the art, and Cox had not presented "more than a scintilla" to rebut that showing, the court granted summary judgment to Ford on this issue.

Dual Threshold Crash Sensing

¶17 Ford's final motion asserted that the "risk-benefit/utility" test should determine whether its crash sensing system was defective rather than the "consumer expectation" test;[6] that due to the complexity of airbags, expert testimony

[6]Under the "consumer expectation" test, "the fact-finder determines whether the product 'failed to perform as safely as an ordinary consumer would expect when used in an intended or reasonable manner,'" and if so, the product was defective and unreasonably dangerous. *Golonka v. General Motors Corp.*, 204 Ariz. 575, 581, ¶ 14, 65 P.3d 956, 962 (App. 2003) (citations

to establish a design defect was needed; and that none of Cox's experts had said that there was such a defect. Ford cited statements from its experts that the sensing system was free of defects and argued that no reasonable jury could find in Cox's favor on this claim. Ford's expert, Dr. Russel Brantman, stated that in 1995 only Mercedes Benz and BMW "had been able to safely and reliably implement dual threshold" sensing systems and that they were the only automakers to do so until 1999.

¶18 In response, Cox argued that because Ford had not shown that on balance the benefits of its sensing system outweighed the risk of its inherent dangers, the sensing system employed for the airbag was unreasonably dangerous. Cox also contended that under *Logerquist v. McVey*, 196 Ariz. 470, 1 P.3d 113 (2000),[7] a jury should assess the accuracy, weight, and credibility of the competing expert testimony.

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omitted). Under the "risk/benefit analysis", the fact-finder considers a number of factors and determines whether a design's benefits "outweigh the risk of danger inherent in [the] design." *Id*. If not, the design is defective and unreasonably dangerous.

[7]We note that in 2010, the legislature enacted A.R.S. § 12-2203. That statute allows admission of expert opinion testimony if it, among other things, "is based on sufficient facts and data . . . [,] is the product of reliable principles and methods [, and] [t]he witness reliably applies the principles and methods to the facts of the case." Furthermore, the court must consider whether the basis for the opinion has been tested or can be tested, has been subjected to peer review publications, has a known error rate, and "the degree to which the expert opinion and its basis are generally accepted in the scientific

¶19 Cox attached the affidavit of Geoffrey Mahon in which he stated that "[d]ual threshold crash sensing for airbag systems has been feasible all during the 1990s" and that Ford could have specified "*available and feasible technology in designing and developing a well designed dual threshold crash severity sensing system . . . to potential crash sensing system suppliers at the time it began its design and development of the 1995 Crown Victoria airbag crash sensing system*." (Emphasis added.) Mahon said that such a system would have deployed at the high threshold only if Cox had been unbelted and that a well designed system would not have deployed at all in this crash.

¶20 In his deposition, Mahon noted a 1994 admission by Toyota that dual threshold crash sensing was feasible but did not meet its reliability and production needs. Mahon stated that Bosch was actively selling dual threshold sensing systems in 1994. Furthermore, Mahon had designed electronic sensing systems while working at Breed. By 1995, Breed had "sold millions of crash sensors that had two different thresholds," although it did not make a diagnostic monitor to gauge seat belt use and shift the thresholds. Mahon cited a paper published in May 1994 that indicated that Ford knew that "there were a large number of electronic sensors in 1995." Finally, Mahon pointed

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community." At present, we need not speculate on the impact of this legislation.

to Hanson's testimony that Allied Signal "could have created a dual-level system by model year 1994 given reasonable lead time, and that they, in fact, did develop a two-level algorithm at Allied Signal."

¶21 Hanson cited a paper published in February 1994 in which Delco Electronics said that its sensing module would "provide multiple discrimination threshold capability, use different thresholds for bags, pretensioners, dual stage inflators, etc. [and thus Delco had] recognize[d] the need for and the future of dual level systems." He stated that the paper "supports my contention that dual level systems were feasible at that point because we already had inflators and Delco Electronics was very near to having sensors."

¶22 The superior court's ruling did not comment on whether a jury might find Ford's sensing system defective and unreasonably dangerous and also find Ford liable for failing to utilize feasible and available technology to improve its sensing system. Instead, the court issued a signed judgment dismissing all claims. In the motion for a new trial, Cox contended that General Motor's dual stage airbag had been placed in approximately 11,000 vehicles sold to the public in the mid-1970s. In addition, Cox argued that Ford had not asserted a state-of-the-art defense as to the crash sensing system and that

a huge reduction in harm would have resulted from use of that technology. The court denied the motion.

DISCUSSION

¶23 Cox contends that the evidence showed that both a dual stage airbag (which fires either one or both stages depending on the severity of the crash) and a dual threshold airbag (which shifts the deployment threshold upward for belted occupants) existed and were technologically feasible for installation in the 1995 Crown Victoria. Cox further argues that whether a product is state of the art is a fact question for the jury and thus that the superior court erred in resolving that issue as a matter of law. *See Anderson*, 197 Ariz. at 177, ¶ 34, 3 P.3d at 1097.

¶24 Viewing the evidence in the light most favorable to Cox, we agree. Weber's affidavit stated that three major airbag inflator suppliers in the late 1980s and early 1990s "had dual stage airbag inflators designed and built that could have been used or adapted for use in the 1995 Crown Victoria." He testified that every vehicle built up until the year 2000 without a dual-stage inflator was defective and unreasonably dangerous. And although he conceded that in 1995, no cars sold in the United States had dual-stage airbags, he also said that when the 1995 Crown Victoria was being built, Allied Signal and Morton International had dual stage inflators that "were on the

shelf ready to be implemented." Thus, Cox presented evidence that technology for better airbag systems was available and could have been utilized in the Crown Victoria. Whether Ford's single stage airbag reflected the *"technical, mechanical and scientific knowledge* of manufacturing" and design that existed and was reasonably feasible for use in its 1995 vehicle is a question for the jury to resolve.

¶25 Similarly, a jury is entitled to consider Mahon's opinion that dual threshold sensing was feasible and that "Ford could have specified a dual threshold crash sensing system to potential crash sensing system suppliers at the time it began its design and development of the 1995 Crown Victoria airbag crash sensing system." As additional evidence of feasibility, he referred to the sales by Bosch and by Breed of "millions of crash sensors that had two different thresholds in the same sensor." Moreover, it was undisputed that in 1995, both BMW and Mercedes Benz were using dual threshold crash sensing systems.

¶26 Cox thereby offered evidence from which a reasonable jury might find that Ford's single stage inflation system was not state of the art and/or that its single threshold crash sensing system was defective and unreasonably dangerous by comparison to existing and available technology for improved airbag systems. Because a reasonable jury might resolve these

fact questions in favor of either party, the trial court erred in granting summary judgment in Ford's favor.

CONCLUSION

¶27 For the foregoing reasons, we reverse the order of the trial court granting summary judgment and remand this matter to the superior court for further proceedings.

/s/_____
SHELDON H. WEISBERG,
Presiding Judge

CONCURRING:

/s/_____
PHILIP HALL, Judge

/s/_____
JOHN C. GEMMILL, Judge