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XIV. Torts

XIV. TORTS

A. *Admissibility of State-of-the-Art Evidence in Design Defect Strict Liability Litigation*

An injured plaintiff bringing a products liability action[1] against a manufacturer has to prove either negligence, breach of warranty, or strict liability in tort.[2] In maintaining a strict liability cause of action against a manufacturer under section 402A of the Restatement (Second) of Torts,[3] a plaintiff must

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1. *See* W. PROSSER, HANDBOOK OF THE LAW OF TORTS §§ 96-98 (4th ed. 1971). Products liability refers to an area of the law involving the liability of sellers or manufacturers to third persons for injuries resulting from the use of a product. *Id.* at 641. The first court to recognize products liability was the English court in *Winterbottom v. Wright* which established the rule that a manufacturer of goods is not liable for negligence to the buyer unless the buyer was in a contractual relationship or in privity with the seller. 152 Eng. Rep. 402, 405 (1842); *see* W. PROSSER, *supra*, at 641. In *MacPherson v. Buick Motor Co.*, Judge Cardozo recognized that a manufacturer is liable to the consumer for negligence regardless of whether privity exists between the buyer and the seller. 217 N.Y. 382, 389, 111 N.E. 1050, 1053 (1916). Before 1963, an injured plaintiff bringing a products liability action against a manufacturer had to prove either negligence or breach of warranty. *See* Greenman v. Yuba Power Prod., Inc., 59 Cal. 2d 57, ____, 377 P.2d 897, 900-901, 27 Cal. Rptr. 697, 700-701 (1963). Unless a plaintiff could prove that a manufacturer was negligent in constructing a product or that a manufacturer breached an express or implied warranty owing to a party in privity of contract, courts would not award damages. *See* W. PROSSER, *supra*, at 143-44 (to prevail in negligence against manufacturer, plaintiff must prove four elements including duty, breach, proximate cause, and injury); *see also MacPherson*, 111 N.E. at 1053 (negligently made product is one "reasonably certain to place life and limb in peril"); *cf.* W. PROSSER, *supra*, at 651-52 (injured plaintiff bringing warranty claim must show either breach of express or implied warranties between manufacturer and consumer). *Compare Winterbottom*, 152 Eng. Rep. at 405 (manufacturer protected against liability since plaintiff was not in privity of contract) *with* Henningsen v. Bloomfield Motors, Inc., 32 N.J. 358, 413-16, 161 A.2d 69, 99-100 (1960) (imposing implied warranty obligations as matter of law to hold defendant manufacturer liable). In 1963, the California Supreme Court in *Greenman v. Yuba Power Prod., Inc.* advanced the then novel theory of "strict liability in tort." 377 P.2d at 901. A manufacturer is strictly liable in tort if the injured plaintiff shows both that the product was defective and that the defect caused the product to injure the consumer. *Id.* at 900. The *Greenman* court held a manufacturer liable although the plaintiff could not prove negligence and could not base a claim on the manufacturer's implied warranty of the product's safety. *Id.* at 898-99. In *Greenman*, a piece of wood flew out of a power tool and injured the plaintiff. *Id.* at 898. The *Greenman* court held the manufacturer strictly liable to the plaintiff since the power tool was defective. *Id.* at 901. The California Supreme Court in *Greenman* justified imposition of strict liability on the defendant in terms of shifting the cost of injuries resulting from defective products from the injured consumer to the manufacturer. *Id.* The California court reasoned that consumer are unable to protect themselves from products with latent defects and that, therefore, courts should impose liability on the manufacturer who places defective products on the market knowing that the consumer will use the product without inspecting the product for defects. *Id.*

2. *See* W. PROSSER, *supra* note 1, §§ 96-98 (three bases of recovery in products liability actions are warranty, negligence, and strict liability in tort). *See generally* Wade, *Strict Tort Liability of Manufacturers*, 19 SW. L.J. 5 (1965) [hereinafter cited as *Strict Tort Liability*] (explanation of breach of warranty, negligence, and strict liability in tort); *supra* note 1 (discussion of products liability).

3. RESTATEMENT (SECOND) OF TORTS § 402A (1) (1965). A manufacturer is subject to strict liability under § 402A of the RESTATEMENT (SECOND) OF TORTS if he sells a product that is both

prove that a product is both defective and unreasonably dangerous to the consumer who uses the product.[4] Courts in jurisdictions that have adopted section 402A will hold a product's manufacturer strictly liable for product defects[5] notwithstanding the care that the manufacturer may have exercised in the preparation and sale of his product.[6] A manufacturer may avoid a court's imposition of strict liability by showing that the product was not defective or unreasonably dangerous.[7] Ordinarily in strict liability actions, the plaintiff focuses on the product and not on the conduct of the manufacturer in attempting to show the defective and unreasonably dangerous condition of the product.[8] Moreover, evidence of the manufacturer's due care is not relevant as a defense to strict liability.[9]

Courts have had difficulty in deciding what evidence is admissible in strict liability actions, particularly in design defect cases.[10] In a design defect cause

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defective and unreasonably dangerous to the user or consumer of the product. *Id. See generally* [1983] 1 PROD. LIAB. REP. (CCH) § 4016 (as of May, 1982, 47 of 50 states have adopted strict liability theory and 37 states have adopted § 402A of RESTATEMENT).

4. RESTATEMENT (SECOND) OF TORTS § 402A (1) (1965). In the interests of consumer welfare, courts will impose strict liability on the manufacturer of products in the stream of commerce. *See Greenman*, 377 P.2d at 900-901 (purpose of strict liability is to provide remedy for injured person who often does not know who manufactured product). Section 402A presumably protects the consumer against the possibilities of injury from products on the market. *See* RESTATEMENT (SECOND) OF TORTS § 402A comment c (1965) (by marketing product, manufacturer is responsible to public for product's safety). The theory of strict liability also is consistent with economic policy goals of internalizing the costs of production by forcing manufacturers to bear the risks that their products will cause injuries. *See id.* (courts should impose liability on manufacturer as cost of production since manufacturer is in better position than consumer to obtain liability insurance). Strict liability, therefore, spreads the risk of a product defect from the consumer to the manufacturer who is better able to insure against this defect. *See generally*, Wade, *On the Nature of Strict Tort Liability for Products*, 44 MISS. L.J. 825 (1973) [hereinafter cited as *Strict Liability Nature*]. The imposition of strict liability upon the manufacturer should deter the manufacturer from making unsafe products in the future. *Id.* at 826.

5. *See* RESTATEMENT (SECOND) OF TORTS § 402A comment g (1965) (defective product is product in unsafe condition).

6. RESTATEMENT (SECOND) OF TORTS § 402A (2) (a) (1965) (courts will hold manufacturer strictly liable notwithstanding care manufacturer may have exercised in preparing and selling product).

7. *See id.*

8. *See* Werner v. Upjohn Co., 628 F.2d 848, 857 (4th Cir. 1980) (reasonableness of manufacturer's conduct in design defect action will not relieve manufacturer of strict liability for damages), *cert. denied*, 449 U.S. 1080 (1981); *see also* RESTATEMENT (SECOND) OF TORTS § 402A(2)(a) (1965) (courts will impose strict liability on manufacturer regardless of whether manufacturer has exercised all possible care).

9. *See* Holloway v. J.B. Sys., Ltd., 609 F.2d 1069, 1073 (3d Cir. 1979) (evidence of reasonableness of manufacturer's conduct is evidence of due care and is inconsistent with doctrine of strict liability).

10. *See* RESTATEMENT (SECOND) OF TORTS § 402A(2)(a) (1965) (manufacturer's exercise of due care does not prevent manufacturer's strict liability for damages); *see also* FED. R. EVID. 402 (evidence not relevant is inadmissible); *Strict Liability Nature, supra* note 4, at 838 (manufacturing defects distinguished from design defects in products liability actions); *cf. Greenman*, 377 P.2d at 901 (blurring distinction between defects in design and manufacture). Manufacturing flaws, unlike design flaws, generally are inadvertent and result in the unintentional deviation

of action, the plaintiff alleges that an entire line of products is inherently defective because of the manufacturer's poor design.[11] Since the plaintiff in a design defect case maintains that the manufacturer could have designed the product differently and thus more safely, evidence of alternative designs in the industry may help the trier of fact decide whether to impose strict liability on the manufacturer of the product.[12] In *Reed v. Tiffin Motor Homes, Inc.*,[13] the Fourth Circuit addressed whether state-of-the-art evidence, which refers specifically to evidence concerning the feasibility of alternative designs, is admissible as a defense in a strict liability action to assist the jury in determining whether a product's design was unreasonably dangerous.[14]

In *Tiffin*, Christopher Reed and his family were travelling in a motor home that Tiffin Motor Homes, Inc. designed, manufactured, and assembled.[15] When another vehicle struck the Reeds' motor home from the rear, an auxiliary gasoline tank in the rear of the motor home ruptured and spilled gasoline into the passenger compartment.[16] The motor home subsequently burst into flames.[17] As a result of the accident, the Reeds suffered personal injuries.[18] The Reeds brought a diversity action in the United States District Court for the District of South Carolina alleging that the placement of the fuel tank outside of the motor home chassis constituted an unreasonably dangerous design.[19] Over the objections of the plaintiffs' counsel, the district court ad-

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from the manufacturer's specifications during the manufacturing process. *See* Henningsen v. Bloomfield Motors, Inc., 32 N.J. 358, 369, 161 A.2d 69, 75 (1960) (mechanical flaw in production of steering system of new car constituted manufacturing defect). In *Singleton v. International Harvester Co.*, the Fourth Circuit noted that § 402A is easier to apply in manufacturing defect cases than in design defect cases. 685 F.2d 112, 114 (4th Cir. 1981). In a manufacturing defect case, the trier of fact must compare the allegedly defective product with a presumably safe design to determine whether a product's deviation from the intended design is so substantial that the product is unreasonably dangerous. *See Strict Tort Liability, supra* note 2, at 14. In a design defect case, however, the trier of fact does not have available a specific standard against which to judge the allegedly defective product. Birnbaum & Wrubel, *The Difficulty in Defining a Test for Use in Design-Defect Litigation*, N.L.J., Sept. 19, 1983, at 42. A plaintiff in a design defect case instead must present the jury with evidence that the manufacturer could have designed the product differently. *Id.*

11. *See* Volkswagen of Am., Inc. v. Young, 272 Md. 201, 204-205, 321 A.2d 737, 738-39 (1974) (driver's seat in automobile manufactured according to specifications but seat separated from floor in accident raising issue of defective design of automobile); *see also* Birnbaum, *Unmasking the Test for Design Defect: From Negligence [to Warranty] to Strict Liability to Negligence*, 33 VAND. L. REV. 593, 600 (1980) [hereinafter cited as *Unmasking Design Defect*] (in considering product's design, plaintiff questions manufacturer's selection of design and not manufacturer's product).

12. *See infra* text accompanying notes 40, 70-72, & 76 (discussing feasibility of manufacturer's selection of alternative design or "state of the art").

13. 697 F.2d 1192 (4th Cir. 1982).

14. *Id.* at 1194.

15. *Id.* at 1195.

16. *Id.*

17. *Id.*

18. *Id.*

19. *Id.*; see 28 U.S.C. § 1332 (1976) (diversity jurisdiction of federal courts). In *Reed v. Tiffin Motor Homes, Inc.*, the plaintiffs based their complaints against Tiffin Motor Homes,

mitted evidence of custom and industry-wide practices in motor home design.[20] The plaintiffs also objected to the trial judge's jury charge that allowed the jury to consider whether the manufacturer followed industry standards in selecting the design.[21] The plaintiffs argued before the trial judge that the court's instruction permitted the jury to consider evidence of due care when deciding if the product was defective and unreasonably dangerous.[22] The trial judge overruled the plaintiffs' objection to the court's jury instruction, and the jury returned a verdict in favor of the defendant.[23] The district court subsequently denied the plaintiffs' motion for a new trial and entered judgment in favor of the defendant.[24] Thereafter, the Reeds appealed to the Fourth Circuit.[25]

The Fourth Circuit in *Tiffin* similarly held that state-of-the-art evidence as well as evidence of trade custom and industry-wide standards is admissible in a design defect strict liability cause of action and denied the plaintiffs' request for a new trial.[26] Hearing a claim based on diversity jurisdiction, the

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Inc., the manufacturer of the plaintiffs' motor home, on three theories of liability: a negligence, breach of implied warranties, and strict liability. 697 F.2d at 1195. The cause of action proceeded to trial, however, only on the theory of strict liability. *Id.* The plaintiffs offered evidence to show that the placement of an auxiliary fuel tank between the frame rails of the motor home chassis constituted a safer design than the design that the manufacturer employed. *Id.* at 1195 n.2. Additionally, the plaintiffs' expert witness testified that a safer design was available prior to the time that the defendant manufactured the motor home. *Id.*

20. *Id.* at 1195.

21. *Id.* The trial judge's jury charge in *Tiffin* instructed the jury to consider the standards of design in the motor home industry and permitted the jury to conclude that the manufacturer's design of the product was not defective if the manufacturer followed the customary practices of motor home manufacturers. Joint Appendix to Briefs for Appellant and Appellee at 178-81, Reed v. Tiffin Motor Homes, Inc., 697 F.2d 1192 (4th Cir. 1982) [hereinafter cited as Joint Appendix].

22. 697 F.2d at 1194.

23. *Id.*

24. *Id.*

25. *Id.* In *Tiffin*, the plaintiffs also appealed the trial court's refusal to admit into evidence a photograph of a crash test of a motor vehicle. *Id.* at 1199. The trial court concluded that the plaintiffs had not laid a sufficient foundation for admission of this photograph into evidence because the plaintiffs had not indicated how fast the vehicle in the photograph was travelling prior to impact. Brief for Appellee at 37, Reed v. Tiffin Motor Homes, Inc., 697 F.2d 1192 (4th Cir. 1982) [hereinafter cited as Brief for Appellee]. The plaintiffs also objected to the trial judge's willingness to admit the defendant's photographs of controlled barrier crash tests. 697 F.2d at 1199. The defendant offered these photographs as evidence in determining the closing speed of the vehicle that struck the plaintiffs' motor home. *Id.* The trial court ruled that the defendant laid a proper foundation for admission of these photographs. Brief for Appellee, *supra*, at 30-35. Finally, the plaintiffs objected to the trial court's refusal to allow the plaintiffs to cross-examine the defendant's expert witness about the police accident report's estimate of the speeds of the two vehicles. 697 F.2d at 1199. The trial court considered the police report's record of the speeds of the vehicles to be irrelevant and thus refused to permit further cross-examination by the plaintiffs about the report. Brief for Appellee, *supra*, at 30-33.

26. 697 F.2d at 1194-95, 1197. The *Tiffin* court held that state-of-the-art evidence is necessary and probative on the issue of the unreasonably dangerous requirement in a design defect strict liability cause of action. *Id.* at 1197. The Fourth Circuit in *Tiffin*, however, equated state-of-the-art evidence and evidence of trade custom under the rubric of "state of the art." *See id.* at 1197; *infra* text accompanying notes 31-42 (*Tiffin* court's reasoning on state-of-the-art and trade custom issues).

Fourth Circuit applied the substantive law of the forum state consistent with *Erie Railroad v. Tompkins*.[27] Although South Carolina has enacted section 402A of the Restatement into statutory law,[28] the South Carolina Supreme Court has not ruled on the issue of the admissibility of state-of-the-art evidence in a strict liability action.[29] In the absence of a South Carolina certification statute allowing federal courts sitting in diversity jurisdiction to transfer questions of state law to the South Carolina Supreme Court,[30] the Fourth Circuit held that the South Carolina Supreme Court would have admitted state-of-the-art evidence and trade custom in a design defect case.[31] According to the *Tiffin* court, South Carolina would have found that state-of-the-art evidence and trade customs are relevant in helping the jury to determine the reasonableness of the manufacturer's design.[32] South Carolina courts have adopted a balancing test for establishing whether a product is unreasonably dangerous.[33] The Fourth Circuit thus interpreted the unreasonably dangerous

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27. *See* 697 F.2d at 1195 (applying *Erie R.R. v. Tompkins*); *see also* Erie R.R. v. Tompkins, 304 U.S. 64, 78 (1928). Under the *Erie* doctrine, federal courts sitting in diversity jurisdiction must apply the substantive law of the forum state which consists both of statutory law and decisional law of the highest court of the state. 304 U.S. at 78.

28. *See* S.C. CODE ANN. § 15-73-10 (Law Co-op 1976). In 1974, South Carolina adopted § 402A in its entirety. *Id.* South Carolina also incorporated the comments to § 402A as the legislative intent of the statute. *Id.* § 15-73-30.

29. 697 F.2d at 1195.

30. *See* Purvis v. Consolidated Energy Prod. Co., 674 F.2d 217, 219 (4th Cir. 1982) (South Carolina lacks certification statute). A certification statute enables a federal court sitting in diversity jurisdiction to transfer questions of state law to the highest court of the state in which the federal court sits. *Id.*

31. 697 F.2d at 1196; *see* Commissioner v. Estate of Bosch, 387 U.S. 456, 465 (1965) (if highest state court has not ruled on issue then, under *Erie*, federal court must predict how state's highest court would decide issue). The *Tiffin* court recognized that courts applying § 402A have excluded state-of-the-art evidence in manufacturing defect cases because such evidence is not relevant in determining whether the product conforms to the manufacturer's own specifications. 697 F.2d at 1196 (dictum); *see supra* note 10 (discussion of manufacturing defect cases).

32. 697 F.2d at 1196; *cf.* RESTATEMENT (SECOND) OF TORTS § 402A comment i (1965) (explaining unreasonably dangerous requirement in terms of dangerousness of product); Keeton, *Product Liability and the Meaning of Defect*, 5 ST. MARY'S L.J. 30, 33 (1973) [hereinafter cited as *Meaning of Defect*] (strict liability theory focuses on defect while negligence theory focuses on fault). *But see* Holloway v. J.B. Sys., Ltd., 609 F.2d 1069, 1073 (3d Cir. 1979). Pennsylvania courts refuse to instruct juries on the unreasonably dangerous standard for fear both of resurrecting the "reasonable person" standard in products liability actions and of returning design defect cases to a negligence theory. *Id.; see* Cronin v. J.B.E. Olson Corp., 8 Cal. 3d 121, 132, 501 P.2d 1153, 1162, 104 Cal. Rptr. 433, 442 (1972) (rejecting "unreasonably dangerous" terminology of § 402A since term "rings of negligence"); *see also infra* text accompanying notes 47-50 (discussion of South Carolina court's rationale for focusing on reasonableness of manufacturer's conduct in design defect strict liability cases).

33. *See* Claytor v. General Motors Corp., 277 S.C. 259, 265, 286 S.E.2d 129, 132 (1982). In *Claytor v. General Motors Corp.*, the Fourth Circuit affirmed a directed verdict in favor of the manufacturer of allegedly defective lug bolts. *Id.* The lug bolts cracked and a wheel separated from the automobile that eventually collided with the plaintiffs' automobile. *Id.* at 130. The defendant's expert witness testified that a mechanic had overtightened the bolts, and consequently the trial court concluded that the product was not defective or unreasonably dangerous despite the fact that larger lug bolts might have prevented the accident. *Id.* at 131-32. In affirming the trial court's directed verdict ruling, the *Claytor* court employed a balancing test for use in design

requirement of section 402A as involving the balancing of the utility of the product against the magnitude of the risks associated with a given design.[34]

The Fourth Circuit acknowledged the difficulty in interpreting the unreasonably dangerous requirement of section 402A.[35] The *Tiffin* court's application of a balancing test in a design defect strict liability action led the court to consider comment i of section 402A in which the drafters of the Restatement explained the unreasonably dangerous requirement.[36] The *Tiffin* Court construed comment i to imply that state-of-the-art evidence and trade customs are admissible for the jury to consider in determining the ordinary expectations of a consumer with respect to the product's safety.[37] The Fourth Circuit characterized its decision in allowing state-of-the-art evidence and trade customs in design defect litigation as representing the majority view and distinguished minority cases by reasoning that South Carolina would refuse to hold manufacturers absolutely liable for all injuries resulting from the use of a product.[38]

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defect cases. *Id.* at 132. The *Claytor* court balanced the utility of the product against the cost of added safety, the likelihood of injury, and the obviousness of the danger. *Id.* The *Claytor* court concluded that the subsequent mishandling of the product by a mechanic who overtightened the lug bolts was sufficient to prevent the case from going to the jury. *Id.* In *Claytor*, the obviousness of the danger of overtightening a lug bolt apparently far outweighed the desirability of heavier lug bolts. *See id.*

34. 697 F.2d at 1196; *see* Singleton v. International Harvester Co., 685 F.2d 112, 115 (4th Cir. 1981) (determination of defectiveness in design defect case requires risk-utility analysis). Dean Wade, formerly the reporter for the RESTATEMENT (SECOND) OF TORTS, developed a risk-utility analysis as the standard for determining whether a product is unreasonably dangerous. *Strict Liability Nature, supra* note 4, at 837-38. The unreasonably dangerous requirement involves seven factors including the desirability of the product, the likelihood that the product will cause injury, the availability of other safer substitute products, the feasibility of making the product safer, the consumer's ability to avoid the danger by exercising due care when using the product, the consumer's awareness of the dangers inherent in the product, and the manufacturer's ability to spread the risk of potential injury from the product by raising the product's price or by carrying liability insurance. *Id.*

35. *See* 697 F.2d at 1198. *See generally* J. BEASLEY, PRODUCTS LIABILITY AND THE UNREASONABLY DANGEROUS REQUIREMENT (1981) (unreasonably dangerous requirement is nebulous concept and difficult to distinguish from reasonableness in negligence context, particularly in design defect cases).

36. *See* 697 F.2d at 1197 (comment i to § 402A requires determination of what consumers expect when purchasing product); Young v. Tidecraft, Inc., 270 S.C. 453, 471, 242 S.E.2d 671, 679-80 (1978) (absence of "kill switch" on motorboat that would turn off engine when driver thrown overboard held not unreasonably dangerous because consumer would not expect "kill switch"); *see also* RESTATEMENT (SECOND) OF TORTS § 402A comment i (1965) (product must be dangerous to extent beyond expectations of ordinary consumer who uses product).

37. 697 F.2d at 1197. The *Tiffin* court emphasized that state-of-the-art evidence in a design defect case is only one element for the jury to consider in determining whether a product is unreasonably dangerous. *Id.; see* Hoppe v. Midwest Conveyor Co., 485 F.2d 1196, 1202 (8th Cir. 1973) (state-of-the-art evidence and evidence of trade custom aids jury's understanding of defective and unreasonably dangerous requirements of § 402A).

38. 697 F.2d at 1196; *see infra* notes 60-66 and accompanying text (discussing majority rule that state-of-the-art evidence is admissible in design defect case). *See generally* J. BEASLEY, *supra* note 35 (distinguishing majority and minority rules on admissibility of state-of-the-art evidence in design defect cases). A manufacturer theoretically always can make a product safer, but courts

In upholding the trial court's decision allowing the jury to consider state-of-the-art evidence and industry standards, the Fourth Circuit recognized that negligence concepts would enter into strict liability actions.[39] Nevertheless, the *Tiffin* court decided that South Carolina would follow the majority rule and would admit evidence of common industry practices and state-of-the-art evidence that refers specifically to the level of knowledge available to the industry in terms of the feasibility of various designs.[40] The Fourth Circuit in *Tiffin* held that evidence concerning alternative locations of the auxiliary fuel tank aided the jury in deciding whether the motor home's design was unreasonably dangerous.[41] Additionally, the Fourth Circuit noted that since the Reeds were seeking to recover punitive damages from the manufacturer, state-of-the-art evidence and industry standards were relevant and indeed probative on the issue of whether Tiffin's conduct was sufficiently wanton, willful, and malicious to warrant an award of punitive damages.[42]

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will impose strict liability for damages on a manufacturer only when a product is unreasonably dangerous. *See* RESTATEMENT (SECOND) OF TORTS § 402A comment i (1965). Under § 402A in South Carolina, a manufacturer is not an insurer of a product's safety. *See* Claytor v. General Motors Corp., 277 S.C. 259, 264-65, 286 S.E.2d 129, 132 (1982) (all products are not unreasonably dangerous).

39. 697 F.2d at 1198 n.8. The *Tiffin* Court acknowledged that the jury's consideration of state-of-the-art evidence might raise the issue of due care. *Id.* Nevertheless, the Fourth Circuit in *Tiffin* upheld the admissibility of state-of-the-art evidence and evidence of trade custom in seeking to provide some guidance for the jury in deciding whether the product's design is unreasonably dangerous. *Id.*

40. *Id.* The *Tiffin* court reasoned that state-of-the-art evidence and evidence of trade custom helps the jury to determine whether the design of a product was unreasonably dangerous. *Id.* Comment i of the RESTATEMENT suggests that a product is unreasonably dangerous if a product is dangerous beyond the expectations of the ordinary consumer who uses the product. RESTATEMENT (SECOND) OF TORTS § 402A comment i (1965). The Fourth Circuit in *Tiffin* held that state-of-the-art evidence and evidence of trade custom is useful to the jury when considering the expectations of the consumer in the product's safety. 697 F.2d at 1198 n.8.

41. 697 F.2d at 1197.

42. *Id.* at 1198. South Carolina courts allow punitive damages in personal injury actions when a plaintiff shows the wanton, willful, or malicious conduct of the defendant. Gilbert v. Duke Power Co., 255 S.C. 455, 500, 179 S.E.2d 720, 723 (1971). The *Tiffin* court reasoned that the manufacturer's compliance with industry standards in design would be relevant to the jury's determination of the wantonness, willfulness, and maliciousness of the defendant's conduct. 697 F.2d at 1198. In *Tiffin*, the plaintiff offered evidence concerning the manufacturer's conduct presumably for the limited purpose of establishing grounds for punitive damages apart from the evidence necessary for an award of compensatory damages based on the theory of strict liability. *Id.* at 1196. The Fourth Circuit noted that South Carolina courts have not decided whether a plaintiff may recover punitive damages in a strict liability action. *Id.* at 1195 n.1. Nevertheless, courts should not allow a plaintiff's evidence on the issue of punitive damages to jeopardize and undermine the plaintiff's strict liability claim to the extent that the manufacturer may counter with evidence of due care as a defense on the separate issue of strict liability. *See* Grimshaw v. Ford Motor Co., 119 Cal. App. 3d 757, 813, 174 Cal. Rptr. 348, 384 (1981) (punitive damages award upheld in strict liability action based upon evidence of aggravated conduct such as malice). In *Grimshaw v. Ford Motor Co.*, the plaintiff presented evidence that the Ford Motor Company knew that the design of the Pinto's fuel tank was hazardous and that other safer designs were available at nominal increases in cost. 119 Cal. App. 3d at 774-78. Ford decided instead to forego changes in the design in order to maximize profits. *Id.* Although the *Grimshaw* court did not

Courts have had difficulty in defining a workable standard in design defect cases for determining whether a product is defective and unreasonably dangerous.[43] In South Carolina, for example, courts employ a balancing test and consider numerous factors before concluding that a product is unreasonably dangerous.[44] South Carolina courts weigh the desirability of a product against the cost of added safety and the likelihood and seriousness of injury.[45] The South Carolina Supreme Court has been careful not to extend strict liability to enterprise liability in which a court holds a manufacturer responsible to the consumer for all injuries that the consumer's use of the product may cause.[46] In strict liability actions, South Carolina courts instead have focused on the reasonableness of the manufacturer's conduct in selecting a particular design.[47] A reasonableness standard, however, involves the conduct of the manufac-

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consider the admissibility of state-of-the-art evidence, the California court did review the trial court's refusal to submit the defendant's jury instruction allowing the trier of fact to consider evidence of trade custom or usage in the automobile industry on the issue of strict liability. *Id.* at 803. The *Grimshaw* court noted that an instruction on the strict liability issue must focus the jury's attention on the condition of the product and not on the reasonableness of the manufacturer's conduct. *Id.* In *Grimshaw*, the California court recognized, however, that Ford's conduct was relevant on the issue of punitive damages. *Id.* at 804. *See* Owen, *Punitive Damages in Products Liability Litigation*, 74 MICH. L. REV. 1258, 1268-71 (1976) (majority of courts hold punitive damages doctrine not inconsistent with theory of strict liability); *see also* Comment, *Punitive Damages in Products Liability Cases*, 16 SANTA CLARA L. REV. 895, 908 (1976) (when plaintiff relies solely on strict liability theory, malice would be difficult to show unless plaintiff also proves manufacturer was negligent). *But see* Walburn v. Berkel Corp., 433 F. Supp. 384, 384-85 (E.D. Wis. 1976) (refusing to allow plaintiff to recover punitive damages except in intentional tort cases).

43. *See* 697 F.2d at 1198; J. BEASLEY, *supra* note 35, at 393-410 (admissibility of state-of-the-art evidence in strict liability case presents court with problem of how to distinguish between strict liability and negligence theories).

44. *See* Claytor v. General Motors Corp., 277 S.C. 259, 265, 286 S.E.2d 129, 132 (1982) (adopting risk-utility analysis in strict liability actions to weight usefulness of product against dangerousness of product); *see also* Montgomery & Owen, *Reflections on the Theory and Administration of Strict Liability for Defective Products*, 27 S.C. L. REV. 803, 818 (1976) (two South Carolina law professors suggest that South Carolina state courts adopt balancing test).

45. Claytor v. General Motors Corp., 277 S.C. 259, 265, 286 S.E.2d 129, 132 (1982).

46. *Id.; see Tiffin*, 697 F.2d at 1197-98 (South Carolina has not made manufacturer guarantor or insurer of product's safety).

47. *See Tiffin*, 697 F.2d at 1197 (South Carolina would admit state-of-the-art evidence and evidence of trade custom because risk-utility analysis related to reasonableness of manufacturer's actions in selecting particular design); *Claytor*, 286 S.E.2d at 132 (balancing utility of design against magnitude of risk of injury to determine if product is unreasonably dangerous). A comparison of the utility of a product with the risk of injury to the consumer presents analytical problems for judges and juries to the extent that a risk-utility analysis may direct the attention of the trier of fact away from the product and toward the conduct of the manufacturer. *See* O'Brien v. Muskin Corp., 94 N.J. 169, 181, 463 A.2d 298, 304 (1983). The Fourth Circuit construed South Carolina law as focusing on the reasonableness of the manufacturer's actions in selecting a design instead of the dangerousness of the design. *See Tiffin*, 697 F.2d at 1197; *Claytor*, 286 S.E.2d at 132. While the distinction between reasonableness of conduct and reasonableness of danger may seem to be only a matter of semantics, the fact remains that imprecise definitions of the unreasonably dangerous requirement of § 402A have accounted for the present confusion surrounding the theory of strict liability. *See* J. BEASLEY, *supra* note 35, at 6, 393-410 (unreasonably dangerous requirement of § 402A injects standard of negligence into strict liability action); *see also* Grimshaw v. Ford Motor Corp., 119 Cal. App. 3d 757, 803, 174 Cal. Rptr. 348, 378 (1981)

turer and not the product itself.[48] Once the conduct of the manufacturer becomes an issue in a strict liability case, the manufacturer will attempt to show that he exercised due care with respect to the design of the product.[49] South Carolina's emphasis on the reasonableness of the manufacturer's conduct, therefore, led the Fourth Circuit to conclude that the South Carolina Supreme Court would have admitted state-of-the-art evidence and evidence of industry standards.[50]

In considering the strict liability theory, the Fourth Circuit previously has applied section 402A in various ways in accordance with the applicable state law.[51] For example, in *Singleton v. International Harvester Co.*,[52] the Fourth Circuit interpreted the forum state's law and found that Maryland did not apply the theory of strict liability in design defect cases.[53] According to the *Singleton* court, Maryland courts would have tried a design defect cases as a negligence action as opposed to a strict liability action, and therefore a Maryland court presumably would have admitted state-of-the-art evidence and evidence of trade customs.[54] In another federal appellate case based on Maryland law, the Fourth Circuit in *Werner v. Upjohn Co.*[55] recognized that in a negligence action the focus is on the reasonableness of the defendant's conduct, while in a strict liability action the focus is on the product.[56] The *Werner* court, however, while conceding the distinction between negligence and strict liability, found the distinction to be overly technical because the consumer is suing the manufacturer and not the product.[57] Alternatively, the

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(distinguishing condition of product that is focus in strict liability action from reasonableness of manufacturer's conduct that is focus in negligence action).

48. *See* RESTATEMENT (SECOND) OF TORTS § 402A comment i (1965) (imposition of strict liability for damages on manufacturer requires showing of defective condition of product making product unreasonably dangerous); J. BEASLEY, *supra* note 35, at 393-410 (state of the art and trade custom implicate reasonableness of manufacturer's conduct and thus due care which is contrary to § 402A).

49. *Cf.* RESTATEMENT (SECOND) OF TORTS § 402A (2) (a) (1965) (defense of due care will not relieve defendant of imposition of strict liability).

50. *Tiffin*, 697 F.2d at 1197.

51. *See infra* text accompanying notes 52-59 (discussing cases in which Fourth Circuit has considered § 402A).

52. 685 F.2d 112 (4th Cir. 1981).

53. *Id.* at 115. In *Singleton v. International Harvester Co.*, the Fourth Circuit held that the standard Maryland would apply in assessing the reasonableness of the design of a tractor without roll-over protective bars was the degree of care the manufacturer exercised in selecting that design. *Id.* A Maryland court held that § 402A was not applicable in design defect cases. *See* Volkswagen of Am., Inc., v. Young, 272 Md. 201, 220-21, 321 A.2d 737, 747 (1974).

54. *See Singleton*, 685 F.2d at 115; *Volkswagen*, 321 A.2d at 747. In a design defect case in Maryland, a court would admit state-of-the-art evidence and evidence of trade custom to aid the jury in determining whether the manufacturer acted reasonably in selecting the design of the product. 685 F.2d at 115; *see* Polk v. Ford Motor Co., 529 F.2d 259, 264 (8th Cir. 1976) (to avoid imposition of strict liability, manufacturer must exercise due care consonant with trade custom and state of the art in selection of design).

55. 628 F.2d 848 (4th Cir. 1981), *cert. denied*, 449 U.S. 1080 (1981).

56. *Id.* at 857.

57. *Id.* In *Werner v. Upjohn Co.*, the Fourth Circuit considered the admissibility of evidence concerning revised warnings that Upjohn supplied with a prescription drug. *Id.* at 853; *see* RESTATE-

Fourth Circuit in *Bly v. Otis Elevator Co.*[58] distinguished between the unreasonably dangerous nature of a product and the unreasonableness of the manufacturer's conduct.[59]

Other United States circuit courts have considered whether to admit state-of-the-art evidence and trade custom based on an interpretation of the difference between the strict liability and negligence theories.[60] In *Bruce v. Martin-Marietta Corp.*,[61] the Tenth Circuit expressly rejected the minority rule that state-of-the-art evidence is never admissible in a strict liability action by concluding that such evidence assists juries in determining consumer expectations and thus the reasonableness of the design.[62] The Eighth Circuit in *French v.*

MENT (SECOND) OF TORTS § 402A comment j (1965) (product is not unreasonably dangerous if manufacturer provides warning explaining how to use product safely). The plaintiff in *Werner* attempted to show that Upjohn was either negligent or strictly liable in not warning of the drug's dangerous side-effects when the plaintiff purchased the product. 628 F.2d at 853. The *Werner* court excluded evidence of the manufacturer's subsequent warning and reasoned that courts should not permit juries to infer from subsequent actions making a product safer that the initial version of the product without the remedial warning was defective. *Id.* at 857. The *Werner* court concluded that under either a strict liability or a negligence theory, courts should exclude evidence of the manufacturer's revised warnings since a manufacturer will be less likely to warn against dangerous side-effects if the manufacturer knows that consumers will use the revised warnings in a products liability action against the manufacturer. *Id.* The plaintiff in *Werner* argued that exclusion of Upjohn's revised warning was improper under the theory of strict liability because § 402A focuses not on the conduct of the manufacturer but on the product itself. *Id.* The *Werner* court found the distinction to be irrelevant in determining the adequacy of the initial warning regardless of whether the plaintiff proceeded under a negligence theory or under a strict liability theory. *Id.* at 857-58.

58. 713 F.2d 1040 (4th Cir. 1983).

59. *Id.* at 1045. The Fourth Circuit in *Bly v. Otis Elevator Co.*, construed Virginia's anti-privity statute as establishing a manufacturer's liability for breach of an implied warranty of merchantability and determined that the Virginia statute was the equivalent of strict liability theory in cases concerning a manufacturer's failure to provide a warning with a dangerous product. *See id.* at 1045 n.6 (Virginia has not adopted strict liability theory); VA. CODE ANN. §§ 8.2-314, 8.2-318 (1950) (manufacturer liable to consumer for breach of warranty when product is unreasonably dangerous). The *Bly* court invalidated a jury instruction that allowed the jury to impose liability on the manufacturer of a forklift if the jury found that the manufacturer failed to warn of dangers that he discovered after the sale of the forklift. 713 F.2d at 1046. In determining that the lack of warning did not make the forklift unreasonably dangerous, the Fourth Circuit in *Bly* distinguished between a lack of warning rendering a product unreasonably dangerous and a lack of warning implicating the unreasonable conduct of a manufacturer. *Id.* at 1045. Under § 402A, courts may impose strict liability on a manufacturer only for defects present at the time of manufacture. *See* RESTATEMENT (SECOND) OF TORTS § 402A(1)(b) (1965) (manufacturer is subject to strict liability for product sold in defective condition). According to the Fourth Circuit in *Bly*, the trial court improperly introduced negligence concepts into a strict liability action to the extent that the jury instruction imposed a continuing duty upon the manufacturer to warn of dangers associated with the use of the product. 713 F.2d at 1046.

60. *See infra* notes 61-71 and accompanying text (discussion of federal courts' application of state law of § 402A). *See generally* J. BEASLEY, *supra* note 35 (discussion of federal courts' analysis of § 402A).

61. 544 F.2d 442 (10th Cir. 1976).

62. *Id.* at 447. In *Bruce v. Martin-Marietta Corp.*, the Tenth Circuit held that state-of-the-art evidence is relevant in a strict liability action in helping the jury to determine the expectations of the ordinary consumer in the product's safety. *Id.; see supra* note 37 and accompanying text

Grove Manufacturing Co.[63] admitted state-of-the-art evidence and evidence of trade custom because an Arkansas statute expressly provided that the trier of fact may consider state-of-the-art factors and customary industry standards.[64] The Eighth Circuit in *Raney v. Honeywell*[65] reasoned that a court should permit the jury to consider the availability and feasibility of alternative designs and the likelihood of injury resulting from a particular design.[66]

In contrast, the Seventh Circuit in *Walker v. Trico Manufacturing Co.*[67] noted that Illinois courts have held that state-of-the-art evidence is not relevant in strict liability actions since, according to one Illinois court, allowing the introduction of evidence of technological feasibility would emasculate the doctrine of strict liability and would signal a return to a negligence theory.[68] The Third Circuit in *Holloway v. J.B. Systems, Ltd.*[69] interpreted Pennsylvania law and held that the Pennsylvania Supreme Court would not have admitted testimony regarding trade customs in section 402A design defect cases.[70] The *Holloway* court left open the possibility, however, that Pennsylvania courts might admit evidence regarding the feasibility of alternative designs.[71]

(discussion of expectations of ordinary consumer test in *Tiffin*). In *Bruce*, the plaintiffs alleged that the manufacturer of an airplane failed to implement a safer design notwithstanding the age of the aircraft. 544 F.2d at 447. The Eighth Circuit rejected this argument and noted that an ordinary consumer would not expect an eighteen-year-old aircraft to have contemporary state-of-the-art safety features. *Id.* Consequently, the *Bruce* court allowed the introduction of state-of-the-art evidence by the defendant to enable the jury to determine the expectations of the ordinary consumer at the time the defendant had manufactured the plane. *Id.* The Fourth Circuit in *Tiffin* cited *Bruce* for the general proposition that state-of-the-art evidence and evidence of trade custom are admissible in design defect cases. 697 F.2d 1196. The *Bruce* court's holding, however, appears to be limited to evidence of the feasibility of alternative designs. *See* 544 F.2d at 447.

63. 656 F.2d 295 (8th Cir. 1981).

64. *Id.* at 298 (state-of-the-art evidence is relevant under § 402); *see* ARK. STAT. ANN. § 34-2805 (Cum. Supp. 1981) (in determining strict liability of manufacturer, trial court may consider technological feasibility and customary practices of other manufacturers).

65. 540 F.2d 932 (8th Cir. 1976).

66. *Id.* at 935 (in determining whether product is unreasonably dangerous, jury should consider feasibility of alternative designs).

67. 487 F.2d 595 (7th Cir. 1973), *cert. denied*, 415 U.S. 978 (1974).

68. *Id.* at 600 (dictum) (under Illinois law, state-of-the-art evidence is prejudicial to plaintiff's case and is not relevant in strict liability action); *see* Cunningham v. MacNeal Memorial Hosp., 47 Ill. 2d 443, 453, 266 N.E.2d 897, 902 (1970) (excluding state-of-the-art evidence as defense to imposition of strict liability for fear of resurrecting due care standard).

69. 609 F.2d 1069 (3d Cir. 1979).

70. *Id.* at 1073. In *Holloway v. J.B. Sys., Ltd.*, the plaintiff alleged that the manufacturer of a pressurized vacuum tank failed to affix a warning to the vacuum tank cautioning against internal pressurization. *Id.* at 1071. The Third Circuit held that the trial court improperly admitted testimony in a strict liability action regarding trade custom because the jury might have found from such evidence that the manufacturer was not liable if others in the industry acted similarly. *Id.* at 1073. In reaching a decision, the *Holloway* court considered a prior decision of the Pennsylvania Supreme Court in which the Pennsylvania court invalidated a jury instruction that used the term "unreasonably dangerous" from § 402A. *Id.* at 1073; *see* Azzarello v. Black Bros. Co., 480 Pa. 547, ____, 391 A.2d 1020, 1027 (1978) (condemning use of jury instruction on unreasonably dangerous requirement of § 402A because jury might believe reasonableness of defendant's conduct was relevant to determination of strict liability of manufacturer).

71. Holloway v. J.B. Sys., Ltd., 609 F.2d 1069, 1073 n.12 (3d Cir. 1979) (recognizing

When considering the admissibility of state-of-the-art evidence, some courts have distinguished between evidence of the level of knowledge available to the industry in terms of the feasibility of various designs and evidence of the common practices that other manufacturers in the industry use.[72] Since a manufacturer theoretically can make any product more safe, courts have been reluctant to impose liability on a manufacturer when the design of the product is safe within the limits of technological feasibility.[73] In interpreting section 402A, the Fourth Circuit in *Tiffin* has left open the possibility that negligence concepts will enter into strict liability cases.[74] In *Tiffin*, industry standards were admissible as evidence for the jury to consider in determining the reasonableness of the design of a product in a strict liability action.[75] The *Tiffin* court, however, never distinguished between state-of-the-art evidence and evidence of industry-wide custom and, therefore, admitted evidence of trade custom.[76]

The Fourth Circuit in *Tiffin* permitted introduction of state-of-the-art evidence and evidence of trade custom although section 402A imposes liability on a manufacturer notwithstanding the care he may have exercised in preparing and selling his product.[77] The introduction of evidence of trade custom in a strict liability action might prejudice the plaintiff's case[78] since this evidence essentially raises the issue of due care.[79] Courts should not permit juries to infer that a manufacturer's due care in selecting the industry-

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possibility that Pennsylvania Supreme Court might admit evidence regarding the feasibility of preventing product defect).

72. *See* Holloway v. J.B. Sys., Ltd., 609 F.2d 1069, 1073 & n.12 (3d Cir. 1979) (distinguishing feasibility of incorporating safety features during manufacture from trade custom); Boatland of Houston, Inc. v. Bailey, 609 S.W.2d 743, 748 (Tex. 1980) (distinguishing custom from state of the art). *But see Tiffin*, 697 F.2d at 1197 (treating state of the art and trade custom together under rubric of "state of the art").

73. *See* Werner v. Upjohn Co., 628 F.2d 848, 858 (4th Cir. 1980) (emphasizing close similarity between negligence and strict liability to distinguish from absolute liability); O'Brien v. Muskin Corp., 94 N.J. 169, 179-80, 463 A.2d 298, 303 (1983) (necessity of proving defective and unreasonably dangerous nature of product distinguishes strict from absolute liability and prevents manufacturer from becoming insurer of product's safety). *But see* Salvador v. Atlantic Steel Boiler Co., 457 Pa. 24, 32, 319 A.2d 903, 907 (1974) (manufacturer under § 402A is insurer of product's safety).

74. *See* 697 F.2d at 1195. The *Tiffin* court noted but did not discuss the significance of Tiffin Motor Homes' use of evidence of trade custom. *See id.* Specifically, the purpose of the manufacturer's evidence was to show that the defendant exercised due care in selecting the placement of the auxiliary fuel tank. *Id.*

75. *Id.* at 1197.

76. *See id.* (state of the art and trade customs are relevant in helping jury determine reasonableness of design); *see also supra* notes 12 & 72 and accompanying text (defining state of the art).

77. 697 F.2d at 1197; *cf.* RESTATEMENT (SECOND) OF TORTS § 402A (2) (a) (1965) (defense of due care will not relieve manufacturer of imposition of strict liability); Holloway v. J.B. Sys., Ltd., 609 F.2d 1069, 1073 (3d Cir. 1979) (evidence of trade custom has no place in strict liability actions since jury could have found from such evidence that manufacturer was not liable if others in industry acted similarly).

78. *See supra* note 48 (discussion of state of the art and trade custom in relation to § 402A).

79. *See* Holloway v. J.B. Sys., Ltd., 609 F.2d 1069, 1073 (3d Cir. 1979).

wide standard of design is a defense in a strict liability action.[80] An entire industry may fall behind in its adoption of new and more safe designs.[81] Industry-wide standards not only are irrelevant as evidence in a strict liability action but also are prejudicial to the plaintiff's case.[82] Unfortunately, many courts use the term "state of the art" when describing the common practices in the industry.[83] The majority rule allowing the introduction of state-of-the-art evidence in strict liability actions would appear to apply only to evidence of feasibility and not to evidence of trade custom.[84]

Evidence that reflects on the reasonableness of the manufacturer's conduct in selecting a particular design is evidence of due care and, therefore, should not be admissible in a strict liability action.[85] South Carolina's interpretation of section 402A in focusing on the reasonableness of the manufacturer's conduct instead of the dangerousness of the product's design combined with the majority rule in other jurisdictions concerning the admissibility of state-of-the-art evidence accounted for the Fourth Circuit's decision in *Tiffin*.[86]

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80. 697 F.2d at 1196; *see* Singleton v. International Harvester Co., 685 F.2d 112, 114 (4th Cir. 1981) (because plaintiff need not prove negligence in strict liability case, focus in design defect case is on dangerousness of product not on conduct of manufacturer in selecting design).

81. The T.J. Hooper, 60 F.2d 737 (2d Cir. 1932).

82. *See* Boatland of Houston, Inc. v. Bailey, 609 S.W.2d 743, 748 (Tex. 1980) (custom is distinguishable from state of the art because state of the art refers only to technological and economic feasibility of selecting alternative designs while custom refers to common practices in the industry). The Fourth Circuit in *Tiffin* blurred the distinction between state-of-the-art evidence and trade custom. *See* 697 F.2d at 1197; *cf.* 609 S.W.2d at 753 (Campbell, J., dissenting) (evidence of industry-wide custom diverts jury's attention toward reasonableness of manufacturer's conduct instead of dangerousness of product).

83. *See* Bruce v. Martin-Marietta Corp., 544 F.2d 442, 447 (10th Cir. 1976) (equating standards in industry at time of manufacture with state of the art).

84. *See* Boatland of Houston, Inc. v. Bailey, 609 S.W.2d 743, 748 (Tex. 1980) (identifying majority rule that allows state-of-the-art evidence in strict liability case but distinguishing state of the art from trade custom). *But see* Beshada v. Johns-Manville Prod. Corp., 90 N.J. 191, 204, 447 A.2d 539, 546 (1982) (excluding state of the art and reasoning that state of the art is negligence defense); *cf.* O'Brien v. Muskin Corp., 94 N.J. 169, 198, 463 A.2d 298, 313 (1983) (Schreiber, J., concurring and dissenting) (by excluding evidence of feasibility of alternative designs, *Beshada* court sanctioned absolute liability).

85. *See supra* note 47 (explanation of distinction between reasonableness of conduct in negligence actions and reasonableness of danger in strict liability actions).

86. *See* Erie R.R. v. Tompkins, 304 U.S. 64, 78 (1928) (substantive law of forum state controls in federal diversity cases); *see also Unmasking Design Defect, supra* note 11, at 647-48 (risk-utility analysis and consumer expectations tests implicate negligence concepts). Professor Birnbaum has argued that courts should adopt a negligence standard for use in design defect cases. *Id.* at 649. One of the original justifications for the theory of strict liability was to relieve a plaintiff of the necessity of proving specific acts of negligence. *Id.* at 647. In manufacturing defect cases, determining what went wrong during the manufacturing process often is difficult to prove. *Id.* Manufacturing defects are unavoidable in light of mass production. *Id.* In design defect cases, however, society's real concern is that manufacturers select the safest designs possible within the limits of technological and economic feasibility. *Id.* at 748. If a manufacturer employs an unsafe design, a plaintiff must present evidence to show that a reasonably prudent manufacturer would not have used that design. *See* RESTATEMENT (SECOND) OF TORTS § 398 (1965) (manufacturer liable for negligence for failure to exercise reasonable care in selection of design); *see also* Welch v. Outboard Marine Corp., 481 F.2d 252, 254 (5th Cir. 1973) (design of product

Nevertheless, the trial judge's instruction in *Tiffin* permitted the jury to find for the defendant manufacturer if the jury determined that the manufacturer followed industry standards with respect to the design of the product.[87] *Tiffin*, therefore, cast doubt on whether strict liability theory will ever become divorced entirely from negligence in products liability actions.[88]

ROBERT W. RAY

B. *Automobile Manufacturers' Liability Under North Carolina Law for Failure to Produce a Crashworthy Vehicle*

Automobile manufacturers traditionally have had a duty to exercise reasonable care in the design and construction of vehicles.[1] An automobile manufacturer's liability for failure to use reasonable care extends to defects

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is defective and unreasonably dangerous when reasonable manufacturer would not sell product). *See generally* Wade, *On Product Design Defects and Their Actionability*, 33 VAND. L. REV. 551 (1980) (jury is better able to apply traditional negligence standards than confusing concept of reasonableness of design).

87. *See* 697 F.2d at 1198. In *Tiffin*, the Fourth Circuit sought to avoid the Pennsylvania rule which establishes that a manufacturer is an absolute insurer of a product's safety. *Id.* at 1197. The *Tiffin* court, however, in its eagerness to avoid the "frontier" of absolute liability, permitted introduction of trade custom regarding the design of the motor home. *Id.* at 1198. The *Tiffin* court appears to have missed the essential question of whether trade custom is admissible at all in a strict liability design defect action. *See* Reply Brief for Appellant at 12, Reed v. Tiffin Motor Homes, Inc., 697 F.2d 1192 (4th Cir. 1982); *see also* notes 39-41 & 50 and accompanying text (discussion of admissibility of state-of-the-art evidence and trade custom in *Tiffin*).

88. *See* 697 F.2d at 1198 n.8 (state-of-the-art evidence admissible notwithstanding risk that due care will enter strict liability action). The Fourth Circuit's decision in *Tiffin* would seem to be consistent with the "Product Liability Act" (Act) which is presently before the Congress. *See* S. 44, 98th Cong., 1st Sess. § 5(b), 129 CONG. REC. 90 (1983) (pre-empting state law with "reasonably prudent manufacturer" test for use in design defect cases). The proposed Products Liability Act retains the theory of strict liability in manufacturing defect cases but abrogates the theory of design defect cases in favor of a negligence standard. *See id.* § 5(a)-(b). Thus in a design defect case under the proposed Act, a product is defective in design if a "reasonably prudent manufacturer" would not have used the design that the defendant manufacturer used. *Id.* § 5(b). *See generally Meaning of Defect, supra* note 32 (unreasonably dangerous requirement is responsible for vast amount of unnecessary litigation).

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1. *See* Mac Pherson v. Buick Motor Co., 217 N.Y. 382, ____, 111 N.E. 1050, 1053 (1916) (automobile manufacturers are liable for defects in vehicles that create foreseeable risks of harm). Justice Cardozo's opinion in *Mac Pherson* provided the groundwork for modern products liability law. Cardozo stated that manufacturers have a common-law duty to exercise reasonable care in the construction of automobiles if negligence would endanger life and limb. *See* 111 N.E. at 1053. Since a defectively produced automobile creates a foreseeable risk of harm to individuals

in design or construction that cause or contribute to an accident.[2] Recently, courts have expanded an automobile manufacturer's duty of care to include a duty to eliminate unreasonable risks that might enhance injuries received in a collision.[3] According to the new doctrine of automobile crashworthiness, a manufacturer may be liable for defects in a vehicle's design or construction

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using the vehicle, the *Mac Pherson* court held that automobile manufacturers have a duty to use reasonable care in the construction of their products. *Id.*

While courts have charged automobile manufacturers with a duty to use reasonable care in the construction of vehicles since *Mac Pherson*, courts generally have been more reluctant to charge manufacturers with a duty to exercise reasonable care in the design of automobiles. *See generally* Katz, *Liability of Automobile Manufacturers for Unsafe Design of Passenger Cars*, 69 HARV. L. REV. 863 (1956) (noting slow development of automobile products liability for defective design). Every jurisdiction, however, now recognizes that automobile manufacturers have a common-law duty to both design and construct vehicles free from unreasonable risks of harm. *See* Wade, *On Product "Design Defects" and Their Actionability*, 33 VAND. L. REV. 551, 551 (1980).

2. *See, e.g.*, Ford Motor Co. v. Mathis, 322 F.2d 267, 276 (5th Cir. 1963) (applying Texas law) (automobile manufacturer held liable for injuries incurred in accident caused by failure of headlights); Goullon v. Ford Motor Co., 44 F.2d 310, 311 (6th Cir. 1930) (applying Kentucky law) (liability imposed on manufacturer for defects in steering assembly that caused crash); Mac Pherson v. Buick Motor Co., 217 N.Y. 382, ___, 111 N.E. 1050, 1051 (1916) (manufacturer held liable for negligence when defectively built wheel collapsed causing accident); *see also* Hoenig, *Resolution of "Crashworthiness" Design Claims*, 55 ST. JOHN'S L. REV. 633, 635 (1981) (traditional automobile products liability law focused on defects in vehicles that caused accidents).

Until recently, courts refused to hold an automobile manufacturer liable for defects in design or construction that did not precipitate the collision. *See, e.g.*, Evans v. General Motors Corp., 359 F.2d 822, 825 (7th Cir.) (automobile manufacturer not liable for allegedly defective frame design that did not cause or contribute to accident), *cert. denied*, 385 U.S. 836 (1966), *rev'd*, Huff v. White Motor Corp., 565 F.2d 104 (7th Cir. 1977); Willis v. Chrysler Corp., 264 F. Supp. 1010, 1012 (S.D. Tex. 1967) (manufacturer not liable for defective construction of vehicle's cab that split in two during collision since defect did not cause crash). In the *Evans* case, the plaintiff claimed that the manufacturer's negligent design of the automobile's frame caused her husband's fatal injuries. *See* 359 F.2d at 824. The district court dismissed the complaint for failure to state a claim on which relief could be granted. *Id.* The Seventh Circuit affirmed the dismissal, holding that an automobile manufacturer does not have a duty to construct or design a crash-proof vehicle. *Id.* The *Evans* court reasoned that an automobile manufacturer only had to ensure that the vehicle was reasonably fit for its intended purpose, which did not include collisions. *Id.* at 825; *see* RESTATEMENT (SECOND) OF TORTS § 395 (1965) (manufacturer is liable only when consumer used product in foreseeable manner). Since an automobile's intended purpose does not include its involvement in collisions, the *Evans* court concluded that automobile manufacturers did not have a duty to design or build a vehicle that minimized accident-related injuries. *See* 359 F.2d at 825. The Seventh Circuit also stated that the imposition of a duty to design a crash-proof vehicle was primarily a legislative function, and not a proper subject for the judiciary. *Id.* at 824.

3. *See, e.g.*, Carazzo v. Volkswagenwerk, A.G., 647 F.2d 241, 250-51 (2d Cir. 1981) (applying New York law) (automobile manufacturer has duty to design and construct vehicles free from unreasonable risks of harm that could increase injuries received in collisions); Smith v. Fiat-Roosevelt Motors, Inc., 556 F.2d 728, 731 (5th Cir. 1977) (applying Florida law) (automobile manufacturer has duty to eliminate defects that may cause unreasonable risks of foreseeable injury); Huddel v. Levin, 537 F.2d 726, 735 (3d Cir. 1976) (applying New Jersey law) (automobile manufacture must take reasonable steps to design and produce vehicle that will minimize foreseeable risks of injury); Nanda v. Ford Motor Company, 509 F.2d 213, 217-18 (7th Cir. 1974) (applying Illinois law) (manufacturer has duty to construct and design vehicles that do not subject users to unreasonable risks of injury during collisions).

that allegedly aggravated the plaintiff's accident-related injuries.[4] Although the majority of jurisdictions that have examined the crashworthiness doctrine have incorporated the doctrine into the state's product liability law, several states have not yet addressed the issue of automobile crashworthiness.[5] Since North Carolina courts have never examined the issue of crashworthiness liability, federal diversity courts applying North Carolina law have had to predict[6]

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4. *See* Larsen v. General Motors Corp., 391 F.2d 495, 502 (8th Cir. 1968) (automobile manufacture is liable for defects in vehicle's design or construction that create unreasonable risks of injury). *Larsen* is the leading case on the doctrine of automobile crashworthiness. In *Larsen*, the Eighth Circuit explicitly rejected the "intended purpose" rationale used by the Seventh Circuit in *Evans* to limit an automobile manufacturer's duty of care. *Id.* at 502; *see supra* note 2 (discussion of *Evans*). The *Larsen* court determined that the scope of a manufacturer's duty of reasonable care depends on the foreseeability of injury. *See* 391 F.2d at 502-03. Since injury-producing collisions are a foreseeable use of an automobile, the Eighth Circuit reasoned that the manufacturer's duty of care should include the elimination of unreasonable risks that might enhance injuries during a collision. *Id.* The *Larsen* court therefore found no rational basis for distinguishing between defects that cause an accident and defects that aggravate injuries received in an accident. *Id.* at 502. *See generally* Comment, *Products Liability - Automobile Manufacturers Must Design and Build a Crashworthy Automobile*, 5 FLA. ST. U. L. REV. 219, 223-25 (1977) (discussing Eighth Circuit's holding in *Larsen*).

Under the crashworthiness doctrine, a court focuses on the vehicle's performance in minimizing the plaintiff's accident-related injuries. *See* Hoenig, *supra* note 2, at 636. The inquiry in crashworthiness cases therefore focuses on the extent to which a vehicle's alleged defects in design or construction unreasonably aggravated the plaintiff's injuries. *Id.; see, e.g.*, Seese v. Volkswagenwerk, A.G., 648 F.2d 833, 834 (3d Cir. 1981) (plaintiff alleged that manufacturer negligently constructed van windows that popped out during collision causing enhanced injury); Feitzer v. Ford Motor Co., 590 F.2d 215, 216 (7th Cir. 1978) (per curiam) (plaintiff claimed that defect in design of fuel system caused increased injuries when car exploded during collision); Perez v. Ford Motor Company, 497 F.2d 82, 84 (5th Cir. 1974) (complaint alleged that negligent construction of truck caused cab to separate from chassis during collision resulting in aggravated injuries); Marshall v. Ford Motor Company, 446 F.2d 712, 713 (10th Cir. 1971) (plaintiff claimed that manufacturer's failure to equip folding bucket seat of vehicle with locking devices caused enhanced injuries during crash); *see also* Foland, *Enhanced Injury: Problems of Proof in "Second Collision" and "Crashworthiness" Cases*, 16 WASHBURN L.J. 600, 607 (crashworthiness case involves allegation that defect made vehicle unsafe to occupy during collision and aggravated passenger's injuries).

5. *See* Huff v. White Motor Corp., 565 F.2d 104, 110-11 (7th Cir. 1977) (listing jurisdictions that have adopted crashworthiness doctrine). In overruling *Evans v. General Motors Corp.*, the *Huff* court noted that the overwhelming majority of courts have adopted the crashworthiness doctrine since the Seventh Circuit's decision in *Evans*. *Id.* at 107. The *Huff* court observed that thirty jurisdictions have adopted the crashworthiness doctrine while only three jurisdictions have rejected the doctrine. *Id.* Thus, seventeen jurisdictions have not yet addressed the issue of crashworthiness liability.

6. *See* Erie R.R. v. Tompkins, 304 U.S. 64 (1938). According to the *Erie* doctrine, federal courts deciding diversity cases cannot refer to any fictional body of "federal common law", but must apply state law as pronounced by the forum's highest court. *Id.* at 78. When the law of the forum state is unclear, the federal diversity court must predict how the forum state's courts would decide the contested issues. *Id.* A federal court, however, is not permitted to predict state law according to individual preferences. *See* McClung v. Ford Motor Co., 472 F.2d 240, 240 (4th Cir.), *cert. denied*, 412 U.S. 940 (1973). Federal diversity courts instead must predict state law based on factors indicative of how the forum's highest court would resolve the legal issue. *See* McKenna v. Ortho Pharmaceutical Corp., 622 F.2d 657, 663 (3d Cir.) (federal diversity court predicting state law must consider all evidence tending to show how state's highest court would

whether the state courts would allow recovery on a crashworthiness claim.[7]

The Federal courts that have construed North Carolina law have not agreed on whether North Carolina would adopt the crashworthiness doctrine.[8] Federal courts predicting that North Carolina would reject the doctrine reason that North Carolina courts would refuse to hold an automobile manufacturer liable unless the manufacturer's negligence caused or contributed to the accident.[9] Conversely, courts holding that North Carolina would adopt the crashworthiness doctrine reason that the state courts would find no rational basis for distinguishing between defects that cause an accident and defects that cause enhanced injuries.[10] In a diversity case involving North Carolina law, the Fourth Circuit in *Wilson v. Ford Motor Company*[11] predicted that the North Carolina courts would reject the crashworthiness doctrine.[12] The *Wilson* court reasoned that since current North Carolina tort law identifies the initial automobile collision as the sole proximate cause of all accident-related injuries, North Carolina courts would not accept the crashworthiness theory of liability.[13] In *Martin*

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decide issue), *cert. denied*, 449 U.S. 976 (1980). *See generally* 1A J. MOORE, W. TAGGERT & J. WICKES, MOORE'S FEDERAL PRACTICE ¶ 309 pp. 3117-29 (2d ed. 1981) (discussing how federal diversity courts ascertain state law) [hereinafter cited as MOORE'S FEDERAL PRACTICE]. Federal courts must predict state law by referring to recent state court pronouncements on analogous issues, dicta from relevant state court opinions, and other evidence of how the forum's courts view a particular issue. *See* MOORE'S FEDERAL PRACTICE *supra* at 3117-29.

7. *See infra* notes 8-13 and accompanying text (discussing different federal court predictions regarding whether North Carolina would adopt the crashworthiness doctrine). Of the thirty-three cases cited in *Huff* that dealt with the crashworthiness issue, fourteen involved a federal diversity court's application of state law. *See* 565 F.2d at 110-11; *e.g.*, Driesonstok v. Volkswagenwerk, 489 F.2d 1066, 1070 (4th Cir. 1974) (predicting Virginia state courts would adopt crashworthiness doctrine); McClung v. Ford Motor Co., 333 F. Supp. 17, 20-1 (S.D.W.Va. 1971) (holding that plaintiff's allegations that vehicles negligent design enhanced injuries did not state claim under West Virginia law), *aff'd*, 472 F.2d 240 (4th Cir.), *cert. denied*, 412 U.S. 940 (1973).

8. *See infra* notes 9-13 and accompanying text (discussing conflicting federal court predictions of North Carolina law).

9. *See, e.g.*, Simpson v. Hurst Performance, Inc., 437 F. Supp. 445, 447 (M.D.N.C. 1977) (predicting North Carolina courts would not impose liability for allegedly dangerous condition in passenger compartment); Alexander v. Seaboard Air Line R.R., 346 F. Supp. 320, 323 (W.D. N.C. 1971) (predicting North Carolina courts would not hold automobile manufacturer liable for allegedly defective gas tank design). The district court in *Alexander* predicted that North Carolina courts would reject the crashworthiness doctrine in a case in which the automobile's gas tank exploded with the vehicle collided with a train. *See* 346 F.2d at 321-27. The *Alexander* court held that under North Carolina law an automobile manufacturer is not liable for negligence that does not cause or contribute to the accident. *Id.* at 323. *See also* Bulliner v. General Motors Corporation, 54 F.R.D. 479, 482 (E.D.N.C. 1971) (North Carolina law requires plaintiff to establish causal connection between alleged negligence of manufacturer and accident).

10. *See, e.g.*, Seese v. Volkswagenwerk, A.G., 648 F.2d 833, 840-41 (3d Cir. 1981) (predicting North Carolina courts would adopt crashworthiness doctrine); Seeley v. Ford Motor Co., 499 F. Supp. 475, 479 (E.D.N.C. 1980) (same); Isaacson v. Toyota Motor Sales, 438 F. Supp. 1, 7 (E.D.N.C. 1976) (same). In *Isaacson*, the district court stressed that North Carolina courts would hold that an automobile manufacturer's duty to design and construct a reasonably safe vehicle extends to eliminating unreasonable risks of harm during a collision. *See* 438 F. Supp. at 8.

11. 656 F.2d 960 (4th Cir. 1981) (per curiam).

12. *Id.*

13. *Id.* The *Wilson* court noted that the Third Circuit in *Seese* predicted that North Carolina

v. Volkswagen of America, Inc.,[14] the Fourth Circuit recently readdressed the issue of whether North Carolina courts would allow recovery on a crashworthiness claim.[15] In a per curiam opinion, the Fourth Circuit reaffirmed the *Wilson* court's prediction that North Carolina would not adopt the crashworthiness doctrine and extend liability to automobile manufacturers for failure to produce a crashworthy vehicle.[16]

In *Martin*, the plaintiffs' decedents were killed when their 1964 Volkswagen sedan burst into flames after being struck head-on by another automobile.[17] The plaintiffs filed a diversity action in the Western District of North Carolina based on North Carolina's wrongful death statute.[18] The plaintiffs did not allege that the defendant's negligence caused or contributed to the fatal crash.[19] Instead, the plaintiffs claimed that the defendant had negligently designed and manufactured the decedent's automobile.[20] The plaintiffs contended that the defendant's negligent design and construction of the automobile's fuel system caused the fire that led to the fatalities.[21] At trial, the defendant moved for dismissal and summary judgment for failure to state a claim upon which relief can be granted.[22] The defendant urged that according to *Wilson*, North Carolina law does not allow recovery under a crashworthiness theory, and therefore the plaintiff's complaint should be dismissed.[23] The district court, however, concluded that *Wilson* was not controlling on the crashworthiness issue, and denied the defendant's motions.[24] The district court reasoned that the *Wilson*

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would adopt the crashworthiness doctrine. *See id.* at 960 n.1; *infra* notes 63-65 and accompanying text (discussing *Seese* court's prediction). The Fourth Circuit, however, pointed out that the North Carolina Supreme Court's recent rejection of strict liability supported the conclusion that the state courts also would reject the crashworthiness doctrine. *See* 656 F.2d at 960-61 n.1; Smith v. Fiber Control Corporation, 300 N.C. 669, 678, 268 S.E.2d 504, 510 (1980) (doctrine of strict liability not applicable in product liability cases in North Carolina).

14. 707 F.2d 823 (4th Cir. 1983) (per curiam).

15. *Id.* at 824.

16. *Id.*

17. *Id.*

18. *See id.*; N.C. GEN. STAT. § 28A.18-2 (1982) (personal representation may sue on behalf of decedent if death caused by wrongful act of another party).

19. *See* 707 F.2d at 824.

20. *Id.*

21. *See* Brief for Appellee at 3, Martin v. Volkswagen of America, Inc., 707 F.2d 823 (4th Cir. 1983).

22. *See* 707 F.2d at 824.

23. *See id.* In *Wilson*, the Fourth Circuit upheld the district court's dismissal of the plaintiff's claim that defects in the construction of his van aggravated the injuries he received in the collision. *See* Wilson v. Ford Motor Company, 656 F.2d 960, 960 (4th Cir. 1981) (per curiam). The defendant in *Martin* relied on the *Wilson* court's holding that under North Carolina law a plaintiff does not state a valid claim unless the plaintiff alleges a causal connection between the defendant's negligence and the collision. *See* Brief for Appellant at 5-6, Martin v. Volkswagen of America, Inc., 707 F.2d 823 (4th Cir. 1983); *see* Bulliner v. General Motors Corporation, 54 F.R.D. 479, 482 (E.D. N.C. 1971) (under North Carolina law plaintiff must allege causal connection between negligence of automobile manufacturer and accident).

24. *See* Martin v. Smith, 534 F. Supp. 804, 808 (W.D.N.C. 1982) (*Wilson* does not control on issue of whether North Carolina would adopt crashworthiness doctrine).

holding was not controlling because it was inconsistent with accepted principles of North Carolina tort law.[25] The district court therefore refused to apply *Wilson* as binding precedent in *Martin*.[26] On appeal to the Fourth Circuit, the defendant claimed that the district court had erroneously interpreted both *Wilson* and North Carolina law in denying the motions for dismissal and summary judgment.[27]

The Fourth Circuit agreed with the defendant, and reversed the judgment of the district court.[28] In a per curiam opinion, the *Martin* court held that the *Wilson* prediction that North Carolina would reject the crashworthiness doctrine was valid and therefore controlling.[29] Since *Martin* and *Wilson* were factually indistinguishable, the Fourth Circuit reasoned that the district court should have granted the defendant's motions on the authority of *Wilson*.[30] A special concurrence in *Martin* responded to a dissent[31] from the Fourth Circuit's denial of a rehearing *en banc* on the crashworthiness issue.[32] By disposing of the appeal on procedural grounds, the *Martin* court never reached the substantive merits of the plaintiff's crashworthiness claim.[33]

While the per curiam opinion in *Martin* never addressed the substantive basis for a crashworthiness cause of action, the concurrence did examine the principles underlying the crashworthiness doctrine.[34] The concurrence noted that the pivotal issue for courts deciding whether to adopt the crashworthiness doctrine is the identification of the proximate cause of the claimant's injuries.[35] The concurrence explained that courts accepting the crashworthiness doctrine hold a manufacturer liable for defects in the automobile that did not proximately cause the collision, but did cause increased injuries during the crash.[36]

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25. *Id.* at 806. The district court in *Martin* specifically rejected the *Wilson* court's determination that the North Carolina courts would not accept the causation analysis used in crashworthiness cases. *Id.* at 806-07; *see supra* notes 3-4 and accompanying text (discussing theory of recovery under crashworthiness doctrine).

26. *See* 534 F. Supp. at 808.

27. *See* 707 F.2d at 824; Appellant's Brief at 6-9, Martin v. Volkswagen of America, Inc., 707 F.2d 823 (4th Cir. 1983).

28. *See* 707 F.2d at 824.

29. *Id.*

30. *Id.* The district judge found the complaint in *Martin* distinguishable from the pleadings in *Wilson*. *See* 534 F. Supp. at 806. The district judge noted that the claimant in Wilson alleged that the defects in the automobile had aggravated the injuries he received in the collision. *Id.* Conversely, in *Martin* the plaintiffs alleged that the design defects proximately caused the decedent's deaths. *Id.* Since the plaintiffs in *Martin* pleaded a different cause of action than the plaintiff in *Wilson*, the district judge refused to dismiss the complaint in *Martin* solely on the basis of the dismissal of the crashworthiness claim in *Wilson*. *Id.*

31. *See* 707 F.2d at 827-28 (Murnaghan, J., dissenting); *infra* notes 58-73 and accompanying text (discussing dissenting opinion in *Martin*).

32. *See* 707 F.2d at 825-27 (Phillips, J., concurring specially); *infra* notes 34-44 and accompanying text (discussing concurring opinion in *Martin).*

33. *See* 707 F.2d at 824.

34. *See infra* notes 35-44 and accompanying text (discussing *Martin's* special concurrence's analysis of crashworthiness doctrine).

35. *See* 707 F.2d at 826 (Phillips, J., concurring specially).

36. *Id.* at 826-27 (Phillips, J., concurring specially). The concurrence in *Martin* noted that

The *Martin* concurrence stated that courts rejecting the crashworthiness doctrine refuse to hold an automobile manufacturer liable for defects that have no causal connection to the initial collision.[37] According to the concurrence, courts rejecting the crashworthiness doctrine consider the initial collision to be the sole proximate cause of all ensuing injuries, and therefore impose liability only on the actor whose negligence caused or contributed to the accident.[38]

Since the analysis of the causation issue is the salient question in crashworthiness cases, the concurrence in *Martin* sought to ascertain how North Carolina courts define proximate cause.[39] The concurrence focused on the North Carolina Supreme Court decision in *Miller v. Miller*,[40] a case that examined the issue of proximate causation in the context of automobile accidents.[41] The concurring opinion noted that the *Miller* court had identified the initial collision as the sole proximate cause of resulting injuries.[42] Although the concurrence acknowledged that *Miller* did not involve a crashworthiness claim, the concurrence reasoned that North Carolina courts would reject the crashworthiness doctrine because the *Miller* court refused to impose liability on an actor whose negligence did not cause the accident.[43] The *Martin* concurrence therefore concluded that North Carolina case law supported the *Wilson* prediction that North Carolina courts would reject the crashworthiness doctrine.[44]

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courts that impose liability for uncrashworthy automobiles do not consider the initial collision to be the sole proximate cause of all accident-related injuries. *Id.* at 827. Rather, the concurrence stated that courts accepting the crashworthiness doctrine distinguish injuries attributable to the force of the collision from injuries arguably traceable to defects in the vehicle's design or construction. *Id.*

37. *See* 707 F.2d at 827 (Phillips, J., concurring specially); *e.g.*, McClung v. Ford Motor Company, 472 F.2d 240, 240 (4th Cir. 1973) (predicting that West Virginia courts would not allow recovery in crashworthiness cases if alleged defect in automobile did not cause or contribute to collision); Walton v. Chrysler Motor Corp., 229 So. 2d 568, 570 (Miss. 1970) (automobile manufacturer not liable if defect in vehicle did not cause accident).

38. *See* 707 F.2d at 827.

39. *Id; see infra* notes 40-43 and accompanying text (discussing concurrence's analysis in *Martin* of North Carolina Supreme Court decision regarding proximate causation).

40. 273 N.C. 228, 160 S.E.2d 65 (1968).

41. *See* 707 F.2d at 827. In *Miller*, the plaintiff received severe injuries during a collision with the defendant's automobile. *See* 160 S.E.2d at 67. The defendant urged that the plaintiff's failure to wear a seat belt constituted contributory negligence, barring recovery for injuries received in the collision. *Id.* The North Carolina Supreme Court, however, refused to hold the plaintiff contributorily negligent. *Id.* The *Miller* court reasoned that although the plaintiff may have been negligent in failing to wear a seat belt, the alleged negligence did not contribute to the occurrence of the accident. *Id.* at 68.

42. *See* 707 F.2d at 827; *supra* note 41 (*Miller* court refused to hold that plaintiff's failure to wear seat belt was a proximate cause of injury).

43. *See* 707 F.2d at 827. While the *Martin* concurrence conceded that *Miller* was not a crashworthiness case, the concurrence emphasized that *Miller* involved the closely related question of whether a negligent act that did not contribute to the accident is a proximate cause of injuries received in the collision. *Id.* at 826. Since North Carolina's highest court in *Miller* identified the initial collision as the sole proximate cause of all accident-related injuries, the *Martin* concurrence reasoned that North Carolina courts would not hold an automobile manufacturer liable for defects that had no causal role in the collision. *See id.* at 827.

44. *See id.* at 827.

In further support of the *Wilson* decision, the concurring opinion noted several aspects of the North Carolina courts that indicate a conservative attitude towards expansive tort doctrines like crashworthiness.[45] The *Martin* concurrence first pointed out that North Carolina courts have never addressed the crashworthiness doctrine, even though the state courts could have examined the doctrine in cases that raised analogous legal issues.[46] The concurrence further noted that North Carolina courts have refrained from liberalizing tort recovery through such doctrines as strict liability and comparative fault.[47] The *Martin* concurrence explained that the hesitancy of the North Carolina courts in substantially altering common-law tort rules reflects an attitude of judicial restraint and deference to the legislature as the proper forum for implementing such changes.[48] The concurrence concluded that the *Wilson* court had properly considered North Carolina's reluctance in following other trends in tort law when predicting that the state courts would not adopt the crashworthiness doctrine.[49]

Additionally, the concurrence in *Martin* urged that the *Wilson* holding was correct because the prediction was based on relevant indicators of North Carolina state law.[50] The concurrence explained that when the courts of the forum state are silent on a particular issue, federal diversity courts applying state law must predict how the courts of that state would decide the issue.[51] The concurring opinion emphasized that federal courts should base their predictions of state law primarily on pertinent legal principles reflected in state court decisions.[52] The concurrence reasoned that state court holdings on analogous or related legal questions are indicative of how the state courts would resolve

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45. *See id.* at 826-27; *infra* notes 46-48 and accompanying text (discussing other evidence indicating that North Carolina courts would not adopt crashworthiness doctrine).

46. *See* 707 F.2d at 826. The *Martin* concurrence noted that the North Carolina Supreme Court could have addressed the crashworthiness doctrine in *Miller* when the Court examined the issue of whether the plaintiff's failure to wear a safety belt was a proximate cause of injury. *Id.; supra* notes 41-43 and accompanying text (discussion of *Miller*). The concurrence in *Martin* suggested that the *Miller* court's failure to address the crashworthiness issues implied that the North Carolina Supreme Court did not recognize the validity of the crashworthiness doctrine. *See* 707 F.2d at 826.

47. *See* 707 F.2d at 826. North Carolina is one of the few jurisdictions that does not allow recovery for personal injury under a theory of strict liability. *See* Seese v. Volkswagenwerk, A.G., 648 F.2d 833, 838 (3d Cir. 1981) (district court applying North Carolina law erred in permitting crashworthiness case to proceed on theory of strict liability); Smith v. Fiber Control Corporation, 300 N.C. 669, 678, 268 S.E.2d 504, 510 (1980) (strict liability doctrine is not applicable in products liability cases).

48. *See* 707 F.2d at 826.

49. *Id.*

50. *See* 707 F.2d at 825.

51. *Id.; see supra* note 6 (discussing federal diversity court prediction of state law).

52. *See* 707 F.2d at 825; Jones of Laughlin Steel Corp. v. Johns-Manville Sales Corp., 626 F.2d 280, 285 (3d Cir. 1980) (to accurately predict state law, federal diversity court should examine all relevant sources of pertinent state law including related decisions of forum's state courts). *See generally* MOORE'S FEDERAL PRACTICE, *supra* note 6, at 3120-3129 (noting that federal diversity courts predicting state law should consider all relevant evidence regarding how forum state's courts view a particular issue).

the contested issue.[53] The concurrence in *Martin* stressed that federal diversity courts should look foremost to relevant state court decisions when predicting state law, and must avoid predicting state law solely on the basis of contemporary legal trends.[54] The concurrence explained that a federal diversity court ignores the forum's legitimate reasons for refusing to adopt a new legal doctrine by merely assuming that the state courts necessarily would follow the trend.[55] The *Martin* concurrence stated that the Fourth Circuit's prediction in *Wilson* was properly based on an accurate appraisal of current principles of North Carolina law.[56] The concurrence therefore concluded that the *Wilson* holding should control in *Martin*.[57]

Although the majority in *Martin* found that *Wilson* was controlling on the issue of whether North Carolina would adopt the crashworthiness doctrine, the dissent in *Martin* maintained that the *Wilson* prediction should not control because the *Wilson* court's assessment of North Carolina law was erroneous.[58] The *Martin* dissent argued that North Carolina courts would not, as *Wilson* predicted, hold as a matter of law that a plaintiff could never recover on a crashworthiness claim.[59] The dissent pointed out that according to North Carolina law, the critical issue of causation usually presents a question of fact for jury resolution.[60] The dissent in *Martin* therefore reasoned that North Carolina courts would not relieve a negligent automobile manufacturer from liability by deciding as a matter of law that the manufacturer's wrongful act was not the proximate cause of the plaintiff's injuries.[61]

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53. *See* 707 F.2d at 826. The *Martin* concurrence emphasized that a state court's analysis of related issues reflects the underlying legal principles of the forum state. *Id.* at 827. The concurrence urged that any valid prediction of state law must involve the ascertainment and application of the forum state's prevalent legal principles. *Id.*

54. *Id.* at 825.

55. *Id.*

56. *Id.* at 826-27. The concurrence in *Martin* urged that because the *Wilson* court based its prediction on relevant indicators of North Carolina law, the decision was subject to criticism only if those indicators proved to be irrational. *Id.* at 825. The concurrence determined that the *Wilson* prediction was accurate because the indicators imply that North Carolina courts would not hold an automobile manufacturer liable for defects that did not cause the accident. *Id.* at 827; *see supra* notes 42-49 and accompanying text (discussing factors noted by *Martin* concurrence that support *Wilson* court's prediction that North Carolina would reject crashworthiness doctrine).

57. *See* 707 F.2d at 827 (Phillips, J., concurring specially).

58. *See id.* at 827-28 (Murnaghan, J., dissenting).

59. *See Id.* The dissent in *Martin* noted that according to the *Wilson* court's holding, a negligent automobile manufacturer will not be liable if a third party's negligence causes the accident, regardless of whether the risk of enhanced injury is reasonably foreseeable to the manufacturer. *Id.* at 827.

60. *Id.* at 827-28. The dissenting opinion in *Martin* pointed out that North Carolina courts generally do not decide the issue of causation as a matter of law unless reasonable minds could not differ as to the foreseeability of injury. *Id.* at 827; Williams v. Carolina Power & Light Co., 296 N.C. 400, 403, 250 S.E.2d 255, 258 (1979).

61. *See* 707 F.2d at 827-28 (Murnaghan, J., dissenting). The *Martin* dissent urged that North Carolina courts have shown a willingness to impose liability on a negligent party when the court cannot decide the question of causation as a matter of law. *Id.* The dissent explained that North Carolina courts refuse to grant a summary judgment in favor of a negligent defendant when

Additionally, the dissent noted that in *Seese v. Volkswagenwerk, A.G.*,[62] the Third Circuit predicted that North Carolina courts would allow an actionable tort based on automobile crashworthiness.[63] The *Seese* court held that North Carolina courts would impose a duty on automobile manufacturers to design and produce a reasonably crashworthy vehicle.[64] The Third Circuit determined that North Carolina courts would find no legitimate reason for limiting an automobile manufacturer's duty of care to eliminating only those defects that might cause or contribute to a collision.[65] The *Martin* dissent deemed significant the fact that the entire panel of the Third Circuit in *Seese* agreed that North Carolina courts would permit recovery on a crashworthiness claim.[66] Since the Third Circuit had reached an opposite conclusion from the *Wilson* court on whether North Carolina would adopt the crashworthiness doctrine, the dissent urged that the Fourth Circuit should reevaluate *en banc* the *Wilson* panel's prediction of North Carolina law.[67]

The dissent finally argued that the Fourth Circuit in *Martin* had disregarded its obligation to accurately predict and apply state law by failing to reconsider the *Wilson* decision *en banc*.[68] The dissent stated that North Carolina courts probably will not have the opportunity to examine the crashworthiness doctrine in the near future.[69] The dissent explained that the absence of a major automobile producer in North Carolina meant that diversity of parties, and thus federal jurisdiction,[70] would exist in most crashworthiness cases brought in North Carolina.[71] Because there is little chance that a North Carolina court will consider the crashworthiness issue, the dissent urged that the Fourth Circuit had a greater duty to correctly ascertain whether North Carolina would

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a genuine issue of fact exists regarding the foreseeability of injury. *Id.* at 828; *see* Williams v. Carolina Power & Light Co., 296 N.C. 400, 403, 250 S.E.2d 255, 258 (1979).

62. 648 F.2d 833 (3d Cir.), *cert. denied*, 454 U.S. 867 (1981).

63. *See* 648 F.2d at 841.

64. *Id.* In holding that North Carolina would adopt the crashworthiness doctrine, the Third Circuit in *Seese* noted the absence of any expression by the North Carolina courts on the crashworthiness issue, as well as the conflicting federal court predictions regarding whether North Carolina would adopt the crashworthiness doctrine. *Id.; supra* notes 8-13 and accompanying text (discussing differing federal court predictions of North Carolina law). The *Seese* court determined that North Carolina courts would find the rationale underlying the imposition of crashworthiness liability persuasive and therefore would adopt the doctrine. *See* 648 F.2d at 841; *supra* note 4 (discussing rationale underlying crashworthiness doctrine). The Third Circuit also reasoned that North Carolina courts would choose to follow the "enlightened" weight of authority and adopt the crashworthiness doctrine. *See* 658 F.2d at 841.

65. *See* 648 F.2d at 840.

66. *See* 707 F.2d at 828 (Murnaghan, J., dissenting). The dissent in *Martin* noted that the sole dissenter in *Seese* did not contend that North Carolina courts would reject the crashworthiness doctrine, but merely disagreed with the manner in which the majority computed damages. *Id.; see* 648 F.2d at 856 (Adams, J., dissenting) (case should be remanded for reassessment of damages).

67. *See* 707 F.2d at 828 (Murnaghan, J., dissenting).

68. *See infra* notes 69-73 and accompanying text (discussion of dissent's contention in *Martin* that Fourth Circuit had special duty not to perpetuate erroneous precedent of *Wilson*).

69. *See* 707 F.2d at 828 (Murnaghan, J., dissenting).

70. *See* 28 U.S.C. § 1332 (1948) (federal district courts have jurisdiction over disputes between citizens or corporations of different states when matter in controversy exceeds $10,000).

71. *See* 707 F.2d at 828 (Murnaghan, J., dissenting).

adopt the doctrine.[72] The dissent in *Martin* concluded that the Fourth Circuit erred in refusing to reconsider the *Wilson* holding *en banc* and thus perpetuating the *Wilson* court's inaccurate prediction of North Carolina law.[73]

The *Martin* concurrence's statement that the *Wilson* prediction is not subject to criticism[74] is correct to the extent that the *Wilson* prediction properly was based on factors indicating how North Carolina courts would resolve the crashworthiness issue.[75] To accurately predict state law, a federal diversity court must ascertain and apply the forum's current policies and legal principles.[76] In predicting state law, the federal court also must utilize the same analytical rules that the forum's highest court would apply to decide the contested issue.[77] Moreover, federal judges in diversity cases must refrain from interjecting their personal views on the merits when predicting what rule the forum state courts would adopt.[78] The Fourth Circuit's prediction of North Carolina law in *Wilson* properly comported with these guidelines.[79]

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72. *Id.*

73. *Id.* The *Martin* dissent pointed out that the Fourth Circuit considers a panel decision like *Wilson* binding precedent until the case is overruled following a rehearing *en banc*. *Id.* The dissent therefore observed that the Fourth Circuit's denial of a rehearing *en banc* in *Martin* compelled the *per curiam* affirmance of the *Wilson* holding. *See id.* The *Martin* dissent also noted that North Carolina lacks a referral statute, which would permit the Fourth Circuit to certify the crashworthiness issue to the North Carolina Supreme Court for resolution. *See id.* at n.1.

74. *See* 707 F.2d at 825 (Phillips, J., concurring specially).

75. *See infra* notes 79-86 and accompanying text (discussion of factors Fourth Circuit relied on to predict North Carolina law in *Martin* and *Wilson*).

76. *See* Becker v. Interstate Properties, 569 F.2d 1203, 1206 (3d Cir. 1977), *cert. denied*, 436 U.S. 906 (1977) (federal diversity court predicting state law must consider legal principles and policies that would control state court adjudication of issue); *supra* note 6 (discussing Federal diversity court prediction of state law).

77. *See* First National Life Ins. Co. v. Fidelity & Deposit Co. of Maryland, 525 F.2d 966, 968 (5th Cir. 1976) (federal diversity court must use same methods that forum's courts would use to decide question of law). In predicting state law, a federal diversity court must decide an issue as if sitting as the highest court of the forum state. *See* Angel v. Bullington, 330 U.S. 183, 187 (1947). The federal court therefore must examine all relevant information and evidence that the highest state court would consider in deciding a question of law. *See* West v. American Telegraph & Telephone Co., 311 U.S. 223, 237 (1940). The purpose of requiring a federal court to predict state law using the same analysis that the forum's highest court would employ in resolving the issue is to ensure that the prediction accurately reflects the rule the forum's state courts would decide. *See* Tucker v. Paxson Machine Co., 645 F.2d 620, 624 (8th Cir. 1981) (in absence of controlling state decision federal diversity court must apply rule highest state court would follow).

78. *See, e.g.*, McClung v. Ford Motor Co., 472 F.2d 240, 240 (4th Cir.) (federal diversity court must refrain from fashioning state law according to personal choice), *cert. denied*, 412 U.S. 940 (1973); Isaacson v. Toyota Motor Sales, 438 F. Supp. 1, 6 (E.D.N.C. 1976) (role of federal court is to predict decision of forum state's highest court rather than interject own opinion on issue); Dyson v. General Motors Corporation, 298 F. Supp. 1064, 1069 (E.D. Pa. 1969) (federal diversity court must ascertain rule that state would follow rather than choose rule court itself would adopt).

79. *See infra* notes 81-87 and accompanying text (Fourth Circuit predictions in *Martin* and *Wilson* properly premised on factors indicative of how North Carolina courts would decide crashworthiness issue). *But see infra* notes 91-113 and accompanying text (Fourth Circuit reached erroneous conclusion on whether North Carolina would adopt crashworthiness doctrine because court misinterpreted North Carolina law).

As the concurrence in *Martin* pointed out, the *Wilson* court correctly identified the question of proximate cause as the critical issue underlying the crashworthiness doctrine.[80] Judicial acceptance of the crashworthiness doctrine usually depends on whether the court considers the initial collision to be the sole proximate cause of all accident-related injuries.[81] Any valid prediction regarding whether North Carolina would adopt the crashworthiness doctrine therefore must take into account how North Carolina courts view the causation issue.[82] The Fourth Circuit in *Wilson* thus properly focused on how North Carolina courts analyze proximate causation in the context of automobile collisions.[83]

Furthermore, the Fourth Circuit's prediction in *Wilson* correctly was based on relevant indicators of North Carolina law, rather than on an assumption that the North Carolina courts would follow the weight of authority on the crashworthiness issue.[84] As the concurrence in *Martin* emphasized, reliance on contemporary trends in the law as a basis for predicting state law disregards the legitimate reasons a state might have for not adopting the majority rule.[85] The *Martin* concurrence therefore properly examined North Carolina case law[86] as well as prevalent state policies in the area of tort liability to support the validity of the *Wilson* prediction.[87] The Fourth Circuit also was correct in not relying on the Third Circuit's prediction in *Seese* that North Carolina would adopt the crashworthiness doctrine.[88] The decision in *Seese* is subject to criticism because the *Seese* court based its prediction on the persuasiveness of the doctrine instead of a critical analysis of North Carolina law.[89] Conversely, the Fourth Circuit in *Martin* and *Wilson* properly based its predictions on an examination of relevant indicators of North Carolina law.[90]

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80. *See* 707 F.2d at 826 (Phillips, J., concurring specially); *infra* notes 81-83 and accompanying text (proximate causation is critical issue in crashworthiness doctrine).

81. *Compare* Williams v. Cessna Aircraft Corporation, 376 F. Supp. 603, 607 (N.D. Miss. 1974) (court rejected plaintiff's claim that defective seat harness caused enhanced injuries in plane crash in part because alleged defect did not cause or contribute to accident) *with* Isaacson v. Toyota Motor Sales, 438 F. Supp. 1, 8 (E.D.N.C. 1976) (court found no rational basis for allowing recovery only when negligent defects caused collision). *See also* Foland, *supra* note 4, at 612 (noting that causation issue frequently is subject of litigation in crashworthiness cases).

82. *See* 707 F.2d at 827 (Phillips, J., concurring specially).

83. *See* 707 F.2d at 826-27 (Phillips, J., concurring specially); *supra* notes 39-43 and accompanying text (concurrence's discussion of proximate causation issue).

84. *See infra* notes 85-87 and accompanying text (*Wilson* prediction properly was based on evaluation of North Carolina state law).

85. *See* 707 F.2d at 825 (Phillips, J., concurring specially).

86. *Id.* at 826-27; *see supra* notes 40-44 and accompanying text (*Martin* concurrence's discussion of North Carolina Supreme Court decision in *Miller*).

87. *See* 707 F.2d at 826 (Phillips, J., concurring specially); *supra* notes 45-49 and accompanying text (*Martin* concurrence's discussion of North Carolina's policy towards expansive tort doctrines).

88. *See infra* note 89 and accompanying text (Third Circuit in *Seese* improperly predicted North Carolina law on crashworthiness based on personal preference for doctrine).

89. *See* 648 F.2d at 841; *supra* notes 62-65 and accompanying text (discussion of Third Circuit's prediction of North Carolina law in *Seese*).

90. *See supra* notes 84-89 and accompanying text (Fourth Circuit in *Martin* and *Wilson*

Although the methods used by the Fourth Circuit to predict North Carolina law in *Wilson* and *Martin* were sound, the prediction itself is inaccurate because the Fourth Circuit misinterpreted North Carolina law.[91] An examination of current principles of North Carolina tort law indicates that the state courts probably would allow recovery on a crashworthiness claim.[92] North Carolina law recognizes that more than one proximate cause of an injury may exist.[93] Additionally, under North Carolina law, an actor's negligence may be the proximate cause of injury even though the wrongful act did not immediately proceed the injury.[94] North Carolina courts therefore would not, as the *Martin* concurrence maintained, necessarily focus on the initial collision as the single proximate cause of all accident-related injuries.[95] Moreover, North Carolina courts have held that the intervening act of a third person will not relieve a negligent party from liability if the intervening act was reasonably foreseeable.[96] In crashworthiness cases, the automobile collision is the intervening act between the original negligence of the manufacturer and the plaintiff's injuries.[97] Since automobile collisions are reasonably foreseeable to a manufac-

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used proper methods to predict North Carolina law on crashworthiness issue); notes 76-78 and accompanying text (federal court must predict state law by ascertaining and applying forum's legal principles).

91. *See infra* notes 92-104 and accompanying text (North Carolina courts probably would adopt crashworthiness doctrine because doctrine is consistent with North Carolina law).

92. *See infra* notes 93-112 and accompanying text (crashworthiness liability is consistent with North Carolina law).

93. *See, e.g.*, Batts v. Faggert, 260 N.C. 641, 644, 133 S.E.2d 504, 506 (1963) (two distinct proximate causes may combine to produce injury); Salter v. Lovick, 257 N.C. 619, 624, 127 S.E.2d 273, 276 (1962) (North Carolina law permits plaintiff to maintain negligence action against two parties if both parties proximately caused injury); *see also* 9 STRONG'S NORTH CAROLINA DIGEST, NEGLIGENCE § 10 at 366-67 (3d ed. 1977) (North Carolina law recognizes that more than one proximate cause of injury may exist).

94. *See* Hester v. Miller, 41 N.C. App. 509, 512, 255 S.E.2d 318, 320 (1979) (proximate cause of injury need not be last act of negligence); *see also* 9 STRONG'S NORTH CAROLINA DIGEST, NEGLIGENCE § 10 at 266 (3d ed. 1977) (North Carolina law does not require that defendant's negligent act be last in time to be proximate cause of injury).

95. *See supra* notes 93-94 and accompanying text (under North Carolina law initial collision would not necessarily be sole proximate cause of injuries).

96. *See, e.g.*, McNair v. Boyette, 15 N.C. App. 69, 72, 189 S.E.2d 590, 593 (negligent party is not insulated from liability unless intervening act was unforeseeable), *aff'd*, 282 N.C. 230, 192 S.E.2d 457 (1972); Brown v. Atlantic Coast Line Railroad Co., 276 N.C. 398, 404, 172 S.E.2d 502, 506 (1970) (foreseeable intervening events will not relieve negligent defendant from responsibility for injury); Rodgers v. Carter, 266 N.C. 564, 571, 146 S.E.2d 806, 812 (1966) (intervening act does not break causal connection between defendant's negligence and plaintiff's injury if act was reasonably foreseeable to defendant); Nance v. Parks, 266 N.C. 206, 211, 146 S.E.2d 24, 29 (1966) (intervening act does not insulate defendant from liability if act was reasonably foreseeable). Under North Carolina law, the issue of whether the intervening act of a third party was foreseeable is a jury question. *See* Bryant v. Woodlief, 252 N.C. 488, 491-92, 114 S.E.2d 241, 244 (1960). Moreover, when evidence exists indicating that the negligence of more than one party may have proximately caused the plaintiff's injuries, a judge must instruct the jury that a finding that one party was negligent does not necessarily exclude others from liability. *See* Warren v. Parks, 31 N.C. App. 609, 615, 230 S.E.2d 684, 688 (1976).

97. *See* Comment, *The Crashworthy Vehicle: Heading For A Collision In The North Carolina Courts*, 18 WAKE FOREST L. REV. 711, 725 n.121 (1982) (automobile collision is intervening act

turer, North Carolina courts probably would hold that an intervening collision does not insulate the manufacturer from liability for defects that cause enhanced injuries, and thus would adopt the crashworthiness doctrine.[98]

Furthermore, North Carolina courts would adopt the crashworthiness doctrine because the doctrine comports with the emphasis in North Carolina law on foreseeability as the basis for imposing liability on a negligent party.[99] Because automobile collisions are reasonably foreseeable as incident to a vehicle's expected use, the crashworthiness doctrine imposes liability for defects that create unreasonable risks of increased injury during a collision.[100] The rationale behind holding an automobile manufacturer liable for defects that do not cause accidents but merely cause enhanced injuries is that the manufacturer should not escape liability if his negligence creates foreseeable risks of harm.[101] North Carolina law similarly stresses foreseeability as the standard for holding an actor liable for negligence.[102] North Carolina courts hold that an actor's negligence was the proximate cause of the plaintiff's injuries if the risk of injury was reasonably foreseeable to the negligent party.[103] Since the crashworthiness theory of liability is consistent with prevailing principles of North Carolina tort law, North Carolina courts probably would not, as the Fourth Circuit predicted in *Martin* and *Wilson*, deny recovery on a crashworthiness claim.[104]

The Fourth Circuit also erroneously held that North Carolina would reject the crashworthiness doctrine because the state had refused to adopt other

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because accident occurs after vehicle has been negligently designed or constructed).

98. *See* Isaacson v. Toyota Motor Sales, 438 F. Supp. 1, 7 (E.D.N.C. 1976) (North Carolina courts would not limit recovery for negligent design or construction of vehicles to situations in which defect caused initial collision).

99. *See infra* notes 100-104 and accompanying text (North Carolina law and crashworthiness doctrine both stress foreseeability of injury as justification for imposing liability on negligent party).

100. *See* Larsen v. General Motors Corporation, 391 F.2d 495, 502 (8th Cir. 1968) (injurious consequences of defects in vehicle's design or construction are reasonably foreseeable to automobile manufacturers).

101. *See, e.g.*, Fox v. Ford Motor Co., 575 F.2d 774, 781 (10th Cir. 1978) (fact that collision precipitated injury to plaintiff should not release negligent automobile manufacturer from liability since collisions are reasonably foreseeable); Isaacson v. Toyota Motor Sales, 438 F. Supp. 1, 8 (E.D.N.C. 1976) (fact that defect in automobile's design or construction did not cause accident should not exempt manufacturer from liability if manufacturer's negligence created foreseeable risks of harm); *see also supra* note 4 (discussion of rationale underlying imposition of crashworthiness liability).

102. *See* Nance v. Parks, 266 N.C. 206, 211, 146 S.E.2d 24, 27 (1966) (foreseeability of injury is required for actionable negligence). *See generally* 9 STRONG'S NORTH CAROLINA DIGEST, NEGLIGENCE §§ 8-10.3, at 326-37 (3d ed. 1977) (noting that foreseeability of injury is basis for determining liability for negligence under North Carolina law).

103. *See, e.g.*, Kanoy v. Hinshaw, 273 N.C. 418, 426, 160 S.E.2d 296, 302 (1968) (test for proximate cause is whether negligent party could have reasonably foreseen that injury was probable under existing facts and circumstances); Williams v. Boulerice, 268 N.C. 62, 68, 149 S.E.2d 590, 594 (1966) (same); Davis v. Jessup, 257 N.C. 215, 220, 125 S.E.2d 440, 443 (1962) (same).

104. *See supra* notes 93-103 and accompanying text (North Carolina courts would not reject crashworthiness doctrine since basis for imposition of crashworthiness liability is consistent with North Carolina tort law).

doctrines that liberalize tort recovery.[105] As the *Martin* concurrence correctly noted, North Carolina courts have shown deference to the state legislature in making substantial changes in common-law tort doctrine.[106] The concurrence pointed out that North Carolina courts do not permit recovery on such expansive tort theories as strict liability and comparative negligence.[107] The concurrence, however, failed to recognize that North Carolina has refused to adopt the doctrines of strict liability and comparative fault primarily to preserve the defense of contributory negligence as an absolute bar to recovery.[108] Since crashworthiness liability would have no effect on an automobile manufacturer's ability to raise the defense of contributory negligence, North Carolina's reason for rejecting strict liability and comparative negligence does not apply to the crashworthiness doctrine. Additionally, the crashworthiness doctrine would not significantly alter an automobile manufacturer's duty of care as presently defined by North Carolina law.[109] The doctrine merely requires an automobile manufacturer to exercise reasonable care in the design and construction of vehicles.[110] Present North Carolina law already charges automobile manufacturers with a duty to use reasonable care in the design and production of vehicles.[111] Thus, because adopting the crashworthiness doctrine would not result in a significant expansion of an automobile manufacturer's common-law duty of care, North Carolina courts probably would adopt the crash-

105. *See* 707 F.2d at 826; Wilson v. Ford Motor Co., 656 F.2d 960, 960 n.1 (4th Cir. 1981) (noting that North Carolina's rejection of strict liability in recent state Supreme Court case implied that North Carolina courts also would reject crashworthiness doctrine); *supra* notes 45-49 and accompanying text (*Martin* concurrence's discussion of North Carolina strict liability and comparative negligence policies).

106. *See* 707 F.2d at 826 (Phillips, J., concurring specially).

107. *Id.*

108. *See* Seese v. Volkswagenwerk, A.G., 648 F.2d 833, 837-38 (3d Cir. 1981) (North Carolina Supreme Court has refused to adopt strict liability to preserve availability of contributory negligence defense); Smith v. Fiber Control Corp., 300 N.C. 669, 678, 268 S.E.2d 504, 509-10 (1980) (recent North Carolina legislation specifically reaffirms applicability of contributory negligence defense by refusing to recognize strict liability); *see also* N.C. GEN. STAT. § 99B-4(3) (1982) (manufacturer not liable if plaintiff failed to exercise reasonable care under circumstances and such failure was proximate cause of injury).

109. *See infra* notes 110-111 and accompanying text (crashworthiness doctrine would not change automobile manufacturer's duty of care under North Carolina law); *see also* Comment, *The Crashworthy Vehicle: Heading For A Collision In The North Carolina Courts*, 18 WAKE FOREST L. REV. 711, 724-28 (1982) (adoption of crashworthiness doctrine in North Carolina would not change manufacturer's duty of care under existing North Carolina law governing defective design and construction of automobiles).

110. Knippen v. Ford Motor Co., 546 F.2d 993, 1000 (D.C. Cir. 1976); *see also* Isaacson v. Toyota Motor Sales, 438 F. Supp. 1, 6 (E.D.N.C. 1976) (manufacturer's duty under crashworthiness doctrine is to avoid subjecting persons to unreasonable risks of foreseeable injury).

111. *See, e.g.*, Cassels v. Ford Motor Co., 10 N.C. App. 51, 55, 178 S.E.2d 12, 15 (1970) (manufacturer must use reasonable care in construction of vehicle); Dupree v. Batts, 276 N.C. 68, 74, 170 S.E.2d 918, 922 (1969) (automobile manufacturer must use reasonable care in selection of materials for product design); Gwynn v. Lucky City Motors, Inc., 252 N.C. 123, 126, 113 S.E.2d 302, 305 (1960) (manufacturer has duty to exercise reasonable care in inspection of vehicle).

worthiness doctrine.[112] Therefore, the Fourth Circuit's predictions in *Martin* and *Wilson* that North Carolina would reject the doctrine are incorrect interpretations of North Carolina law.[113]

Unfortunately, however, jurisdictional barriers may prevent the North Carolina state courts from correcting the Fourth Circuit's erroneous appraisal of North Carolina law in the near future.[114] As pointed out in the *Martin* dissent, the lack of a major automobile producer in North Carolina indicates that federal diversity jurisdiction will exist in most crashworthiness cases brought in North Carolina.[115] Furthermore, an automobile manufacturer sued on a crashworthiness claim in a North Carolina state court is likely to remove the case to a federal forum as long as the Fourth Circuit's favorable decisions in *Martin* and *Wilson* remain dispositive.[116] Consequently, North Carolina courts probably will not have an opportunity to rectify the Fourth Circuit's inaccurate assessment of the state law in the near future.[117] Thus, the *Martin* dissent was correct in arguing that the Fourth Circuit's failure to reconsider the *Wilson* decision *en banc* will perpetuate a misinterpretation of North Carolina law.[118]

In *Martin v. Volkswagen of America, Inc.*, the Fourth Circuit predicted that North Carolina courts would not extend liability to automobile manufacturers for defects in a vehicle's design or construction that enhance accident-related injuries.[119] Although the *Martin* court properly based its prediction on relevant indicators of North Carolina law,[120] the Fourth Circuit erroneous-

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112. *See supra* notes 109-111 and accompanying text (North Carolina courts would not consider crashworthiness doctrine an unreasonable expansion of automobile manufacturer's duty of care as defined by North Carolina law).

113. *See supra* notes 92-112 and accompanying text (North Carolina courts would not reject crashworthiness doctrine because doctrine is consistent with state law).

114. *See infra* notes 115-117 and accompanying text (jurisdictional barriers may prevent North Carolina courts from addressing crashworthiness doctrine in near future).

115. *See* 707 F.2d at 828 n.1 (Murnaghan, J., dissenting); *supra* notes 69-71 and accompanying text (discussion in *Martin* dissent concerning barriers to North Carolina state court jurisdiction over crashworthiness cases).

116. *See* 707 F.2d at 828 n.1 (Murnaghan, J., dissenting); 28 U.S.C. § 1141(a)-(b) (1976) (defendant may remove case to any federal district court having jurisdiction over action).

117. *See supra* notes 114-116 and accompanying text (jurisdictional barriers may prohibit North Carolina courts from examining crashworthiness issue in near future). The fact that North Carolina has not enacted a referral statute may serve to perpetuate the Fourth Circuit's inaccurate decision in *Wilson*. *See* 707 F.2d at 828 n.1 (Murnaghan, J., dissenting); *see, e.g.*, FLA. STAT. ANN. § 25.031 (1974) (state supreme court authorized to receive and answer certified question of state law from federal appellate courts); ME. REV. STAT. ANN. tit. 4, § 57 (1964) (same). A referral statute would allow the Fourth Circuit to certify the unsettled crashworthiness question to the North Carolina Supreme Court for resolution. *See* 707 F.2d at 828. The lack of a referral statute means that federal courts must continue to predict North Carolina law concerning the crashworthiness doctrine.

118. *See* 707 F.2d at 828 (Murnaghan, J., dissenting).

119. *See id.* at 824 (per curiam); *supra* text accompanying notes 28-30 (stating per curiam opinion in *Martin*).

120. *See supra* notes 75-90 and accompanying text (Fourth Circuit in *Martin* used proper methods to predict North Carolina law).

ly concluded that North Carolina would reject the crashworthiness doctrine.[121] Prevailing principles of North Carolina law indicate that North Carolina courts would not excuse an automobile manufacturer from liability when the manufacturer's negligence created unreasonable risks of foreseeable harm.[122] Given the continuing inconsistency of federal court interpretations of North Carolina law regarding the crashworthiness doctrine,[123] the Fourth Circuit in *Martin* should have reconsidered *en banc* the validity of the *Wilson* prediction.

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121. *See supra* notes 91-113 and accompanying text (Fourth Circuit's assessment of North Carolina law in *Martin* is incorrect).

122. *See supra* notes 93-112 and accompanying text (crashworthiness doctrine does not conflict with North Carolina causation principles or significantly expand manufacturer's duty of care as defined by North Carolina law).

123. *See supra* notes 8-13 and accompanying text (conflict exists among federal courts predicting whether North Carolina would adopt crashworthiness doctrine).