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COMMENT

AUTOMOBILE CRASHWORTHINESS: *EVANS* TAKES A BACKSEAT

I. INTRODUCTION

It is a favorite practice of certain law school professors — especially those teaching first year students — to conclude a discussion of difficult cases or conflicting authority with the question: "Well, then, who's right?" Predictably, the student response is equivocating; thus, the professor will suggest: "Shall we take a vote?" In this way, the issues are resolved by a quantitative, rather than qualitative approach. While this quantitative approach is unsatisfactory to the student of law, it unfortunately often manifests itself in judicial opinions under the guise of the "weight of authority," thus enabling the judge to dispose handily of complex issues. This is not to suggest that the issues have been resolved.

The manner in which some courts have approached the issue of automobile crashworthiness, or the doctrine of the second accident, is illustrative. There has been substantial controversy for many years over the extent of a car manufacturer's duty to provide a "crashworthy" vehicle, one that does not unnecessarily injure its occupants when involved in a collision. In 1966, the Seventh Circuit decided *Evans v. General Motors Corporation*,[1] in which the court held that the manufacturer was under a duty to design a car reasonably fit for its intended uses, but that collisions were outside such uses.[2] In 1968, the Eighth Circuit decided *Larsen v. General Motors Corporation*,[3] in which the court held that the manufacturer, in designing its cars, had to take into consideration the environment of the car's use, which included collisions. Thus, the manufacturer might be liable for injuries caused by the car's design, even though the design did not cause the collision in the first instance, if an alternative, safer design was reasonable.[4]

Since *Larsen* was decided, courts have had to choose between *Evans* and *Larsen*[5] in situations where the plaintiff charged the manufacturer

1. 359 F.2d 822 (7th Cir.), *cert. denied*, 385 U.S. 836 (1966).

2. 359 F.2d at 825.

3. 391 F.2d 495 (8th Cir. 1968).

4. *Id.* at 502-03.

5. To illustrate the confusion generated by *Evans* and *Larsen*, in Bremier v. Volkswagen of America, Inc., 340 F. Supp. 949 (D.D.C. 1972), Judge Green concluded that Maryland would adopt the crashworthy rule set forth in Larsen v. General Motors Corp., 391 F.2d 495 (8th Cir. 1968). Notwithstanding this prediction, the Maryland Court of Special Appeals later expressly rejected *Larsen* in Frericks v.

with negligence, strict liability and breach of warranty regarding the car's design. This comment updates the controversy generated by these cases, both among the courts and the commentators; analyzes the manufacturer's liability under negligence, strict liability and warranty; and suggests inherent weaknesses in the *Evans* approach.

II. CRASHWORTHINESS: A PLAY IN THREE ACTS

The term "crashworthiness" refers to the ability of the vehicle to protect the passengers from exacerbated injuries following a collision. Crashworthiness has also been defined as "the protection that a passenger motor vehicle affords its passengers against personal injury or death as a result of a motor vehicle accident."[6] The focus is upon the events following the initial accident and includes both the collision of the passenger with the interior part of the vehicle (the second accident) and the structural integrity of the vehicle upon impact.[7] The driver-consumer-passenger's suit against the manufacturer is "not grounded upon the theory that a defect in the car caused the primary impact, but rather that the injuries sustained were exacerbated by a defect in design."[8] The following episodic illustrations present the crashworthiness issue.

Act I, the sale: Involved here are the manufacturer, the retailer-dealer, and the consumer who ordinarily possesses only limited knowledge of

General Motors Corp., 20 Md. App. 518, 317 A.2d 494 (1974), *vacated,* 274 Md. 288, 336 A.2d 118 (1975), and adopted the crashworthy doctrine set forth in Evans v. General Motors Corp., 359 F.2d 822 (7th Cir.), *cert. denied,* 385 U.S. 836 (1966), 20 Md. App. at 528, 317 A.2d at 499. However, 3 months after *Frericks* had been decided, the Maryland Court of Appeals rejected *Evans* in favor of *Larsen,* in Volkswagen of America, Inc. v. Young, 272 Md. 201, 214–15, 321 A.2d 737, 744 (1974). Although New York appeared to be firmly in the *Evans* camp, based on Campo v. Scofield, 301 N.Y. 468, 95 N.E.2d 802 (1950) (which was the basis of the *Evans* decision) and Edgar v. Nachman, 37 App. Div. 2d 86, 323 N.Y.S.2d 53, *motion for leave to appeal denied,* 29 N.Y.2d 483, 274 N.E.2d 312, 324 N.Y.S.2d 1029 (1971), the New York Court of Appeals rejected *Evans* and *Edgar* and embraced *Larsen* in Bolm v. Triumph Corp., 33 N.Y.2d 151, 305 N.E.2d 769, 350 N.Y.S.2d 644 (1973). In Rheingold, *What Are the Consumer's "Reasonable Expectations"?* 22 BUS. LAW. 589, 599 n.38 (1967) [hereinafter cited as Rheingold, *Expectations*], the author concluded that Dean Wade was in apparent agreement with the *Evans* rationale, whereas *Evans* was later rejected and *Larsen's* crashworthy doctrine embraced as "clearly correct" in Wade, *On the Nature of Strict Tort Liability for Products,* 44 MISS. L.J. 825, 848 (1973). The *Evans* and *Larsen* lines of authority are set forth in Annot., 42 A.L.R.3d 560 (1972).

6. The Motor Vehicle Information and Cost Savings Act, § 2 (14), 15 U.S.C. § 1901 (14) (Supp. III, 1973). *See also* the definitions collected in Dreisonstok v. Volkswagenwerk, A.G., 489 F.2d 1066, 1069 n.3 (4th Cir. 1974).

7. It may, however, be misleading to define crashworthiness in terms of the impact of the car's occupants with the interior of the vehicle (the "second accident") since not all design defects require a second collision to exacerbate injuries. Sklaw, *"Second Collision" Liability: The Need for Uniformity,* 4 SETON HALL L. REV. 499, 507 n.40 (1973). Indeed, in Turner v. General Motors Corp., 514 S.W.2d 497 (Tex. Civ. App. 1974), a Texas court recounted the parameters of "crashworthiness" set forth at a pretrial hearing: the structural integrity of the car's shell; the elimination of sharp or protruding objects in the interior; passenger restraint devices; and the elimination of fire following a crash. *Id.* at 499.

8. Sklaw, *supra* note 7, at 507.

automotive engineering. Consumer *A* decides upon a sports car — a Corvette; it is obvious to *A* that, notwithstanding other design features, the car will not afford him the same degree of protection he might have in, for example, a Cadillac. Consumer *B* decides upon a Volkswagen bus, which maximizes interior storage space by placement of the engine in the rear. It is apparent to *B* that passengers in the front seat are separated from external hazards by a windshield and metal panel fronted with a bumper and nothing more. Consumer *C* decides upon a hardtop passenger car, which is attractive because there is no center post between the windows, as in a sedan. Consumer *D* decides upon a car without a padded dashboard since a padded dashboard is optional and therefore more expensive. Consumer *E* selects a General Motors' car over that of another manufacturer; the General Motors car has an "X" frame, as opposed to a perimeter frame. *E* is not aware of the construction of the frame, but such knowledge would not cause *E* to consider alternative models. In each sale, the dealer does not delineate the relative hazards of each model in the event of head-on, rearend, broadside, or rollover collisions; nor does the manufacturer set forth any warnings concerning the car's performance upon such collisions at the time of purchase, and the consumers naturally do not contemplate the destruction of their new possessions.

Act II, the accident: Consumer *A,* the Corvette purchaser, is driving on the freeway when he is bumped from behind; the car explodes and *A* is severely burned. *B* loses control of his bus, which strikes a telephone pole head-on; *B* and a passenger in the front seat are severely injured. *C* is also involved in an accident, and his hardtop car overturns; the roof, lacking structural support, crushes *C*. *D*'s car is involved in an accident and the passengers are grievously injured when they strike the unpadded dashboard. *E*'s car is struck broadside; because of the "X" frame, there is no steel beam on the side to protect *E* from the other vehicle upon impact, and *E* is seriously injured.

Act III, the litigation: In each of these situations, the issue is whether the user-consumer-passenger has a cause of action against the manufacturer and retailer upon the grounds that the vehicle might have been better designed so as to minimize the injuries to the person following the initial impact. Consumer *A* contends that the sports car could have been designed so as not to explode when hit from the rear; *B,* that the bus should have had more frontal protection; *C,* that the roof of the car might have been strengthened to support the weight of the vehicle upon overturning; *D,* that a padded dashboard would have minimized his injuries; *E,* that a perimeter frame would have afforded him greater protection in the event of a broadside collision. Depending upon the wholly fortuitous circumstances of the jurisdiction in which suit is brought, *A, B, C, D,* and *E* may or may not have causes of action against the manufacturer. This fortuity is a function of the conflicting lines of authority generated by the *Evans* and *Larsen* decisions.

III. DEVELOPMENT OF AUTOMOBILE MANUFACTURERS LIABILITY

A. *Background*

Despite their contrary conclusions, both *Larsen* and *Evans* share a common ancestor in *MacPherson v. Buick Motor Co.*,[9] Judge Cardozo's landmark opinion defining the automobile manufacturer's liability for personal injuries sustained by the consumer when a vehicle is proven defective. In that case, although the car manufacturer had purchased wheels for its cars from a reputable wheel manufacturer, one of the wheels on plaintiff's car was defective. While plaintiff was driving, the wheel collapsed and plaintiff was injured. Had the car manufacturer inspected the wheels before assembly, the defect would have been discovered.[10] While the manufacturer insisted it had a duty of care only to the immediate purchaser (the dealer), Judge Cardozo ruled that the manufacturer's duty extended to the remote purchaser, notwithstanding the lack of privity, when the product would be dangerous if negligently made.[11] Dean Prosser has observed that the opinion's

> reasoning and its fundamental philosophy were clearly that the manufacturer, by placing the car upon the market, assumed a responsibility to the consumer resting not upon the contract but upon the relation arising from his purchase, together with the foreseeability of harm if proper care were not used.[12]

Indeed, it has been asserted that the significance of the *MacPherson* opinion lies in its "[focusing] attention upon the risk of harm and not upon the manner by which it is caused or the number of events intervening between the defendant's act and the catastrophe."[13]

While *MacPherson* was generally accepted when the plaintiff alleged injury arising out of an accident caused by a defect in the car's construction, the courts "long seemed reluctant to impose liability on the manufacturer" when the plaintiff alleged a defect in design as the cause of his injuries.[14] This reluctance to impose liability for faulty design appeared

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9. 217 N.Y. 382, 111 N.E. 1050 (1916).

10. *Id.* at 385, 111 N.E. at 1051.

11. *Id.* at 390, 111 N.E. at 1053.

12. W. PROSSER, THE HANDBOOK OF THE LAW OF TORTS § 96, at 643 (4th ed. 1971).

13. Seavey, *Mr. Justice Cardozo and the Law of Torts*, 52 HARV. L. REV. 372, 381 (1939). The implications of the *MacPherson* decision in the area of "crashworthiness" are discussed in Note, *Manufacturer's Liability for an "Uncrashworthy" Automobile*, 52 CORNELL L.Q. 444, 446–47 (1967).

14. Katz, *Liability of Automobile Manufacturers for Unsafe Design of Passenger Cars*, 69 HARV. L. REV. 863 (1956) (footnote omitted) [hereinafter cited as Katz, *Liability*]. *See* Amason v. Ford Motor Co., 80 F.2d 265 (5th Cir. 1935); Ford Motor Co. v. Wolber, 32 F.2d 18 (7th Cir.), *cert. denied*, 280 U.S. 565 (1929); Davlin v. Henry Ford & Son, Inc., 20 F.2d 317 (6th Cir. 1927); Reusch v. Ford Motor Co., 196 Wash. 213, 82 P.2d 556 (1938); Foster v. Ford Motor Co., 139 Wash. 341, 246 P. 945 (1926).

even when the plaintiff's theory of recovery was breach of warranty.[15] In an early case, one court facilely disposed of the plaintiff's allegation of negligent design of the brake system by remarking that such allegation only amounted to "a conclusion of the pleader that he knows more about the construction of an automobile than the manufacturer."[16] It has been suggested that the hesitance of courts to impose liability for design defects results from judicial distrust of a jury's competence to pass upon the adequacy of a manufacturer's design choice.[17]

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15. *See* Chanin v. Chevrolet Motor Co., 89 F.2d 889 (7th Cir. 1937); Murphy v. Plymouth Motor Corp., 3 Wash. 2d 180, 100 P.2d 30 (1940).

16. Dillingham v. Chevrolet Motor Co., 17 F. Supp. 615, 618 (W.D. Okla. 1936). In Blissenbach v. Yanko, 90 Ohio App. 557, 107 N.E.2d 409 (1951), plaintiff accidentally overturned a vaporizer and was scalded when hot water escaped from a loose-fitting top. In holding for the defendant, the court observed that the vaporizer was in the condition the manufacturer intended it to be, that the purchaser was aware of the product's features, and therefore the vaporizer was neither negligently made nor the proximate cause of the injuries. *Id.* at 562, 107 N.E.2d at 411. The thrust of cases such as *Dillingham* and *Blissenbach* seems to be that the manufacturer is in a better position to know about its product design than the layman; if the manufacturer decides to market the product according to a certain design, that design is not defective. Other courts, however, have not hesitated to hold a manufacturer liable for an unsafe product design which causes injury. *See* LaGorga v. Kroger Co., 275 F. Supp. 373 (W.D. Pa. 1967), *aff'd per curiam*, 407 F.2d 671 (3d Cir. 1969); Greenman v. Yuba Power Prods., Inc., 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1963); McCormick v. Hankscraft Co., 278 Minn. 322, 154 N.W.2d 488 (1967).

17. However, the assertion that juries are not appropriate arbiters of the design decisions made by engineering experts "defies traditional legal theory." Comment, *Automobile Design Liability:* Larsen v. General Motors *and its Aftermath*, 118 U. PA. L. REV. 299, 304 (1969); *see* Nader & Page, *Automobile Design and the Judicial Process*, 55 CALIF. L. REV. 645, 663 (1967), wherein the authors asserted that judges and juries routinely pass judgment upon the standard of care exercised by experts in making decisions in areas other than products design.

As to the factfinder's capacity to pass upon the reasonableness of a defendant's conduct with and without the assistance of expert testimony, *see* James & Sigerson, *Particularizing Standards of Conduct in Negligence Trials*, 5 VAND. L. REV. 697, 698–703 (1952).

Professor Henderson, on the other hand, has argued that, at least in the area of conscious design choices, *i.e.*, where the manufacturer, fully conscious of the risks, adopts the design because the supposed benefits of the design outweigh the risks, it is generally beyond a judge's and jury's capacity to pass upon the reasonableness of the choice, given the "polycentric" nature of the inquiry. Henderson, *Judicial Review of Manufacturers' Conscious Design Choices: The Limits of Adjudication*, 73 COLUM. L. REV. 1531, 1558 (1973). He was especially worried about "judicial coin-flipping" and "decision-by-whim" on the part of the jury. *Id.* at 1570.

Judicial reluctance to impose liability for design defects has also resulted from the belief that, "whereas defects in construction or assembly of a product arise from failure to follow established production procedures, defects in design evolve from creative error and are much more nebulous and difficult to prove." Note, *supra* note 13, at 447. Another writer has observed:

> The application of negligence principles to designs gave the courts pause. They seemed puzzled by the fact that something perfectly executed according to a defective design could be thought of as negligently made. They tended to defer to the expertise behind the technology in the case of design; they hesitated to intervene because of the vast number of items that at one fell swoop might be held negligently made should they impeach a particular design. And possibly they

More recently, however, courts have found automobile manufacturers liable in negligence for design defects that cause an accident and consequent injuries.[18] In *Carpini v. Pittsburgh & Weirton Bus Co.*,[19] for example, a petcock, used to drain the air chamber of a brake system, was located close to the ground on the underside of a bus. The bus crashed when its brakes failed, and the evidence suggested that the brakes failed because debris on the highway had broken the petcock.[20] The *Carpini* court permitted the jury to determine whether the design created an unreasonable risk, even though General Motors demonstrated that, despite the millions of miles vehicles of that sort had traveled on highways, no accident of the type involved in *Carpini* had previously been reported.[21] From cases such as *Carpini* and the *Restatement (Second) of Torts*, sections 395[22] and 398,[23] it is apparent that the manufacturer is under a duty to use reasonable care in the design of a vehicle. If the design creates an unreasonable risk of harm during its intended, normal or foreseeable use, the manufacturer is liable for the injuries proximately caused by the defective design. While this proposition suggests an uncomplicated formula for determining a manufacturer's liability for uncrashworthy cars, the extent of the manufacturer's duty, the intended use of the product, and the reasonableness of the risk created are the very issues which compose the *Evans-Larsen* controversy.

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were troubled by the retroactivity in waiting until the items were made before declaring there was a flaw in design.

Kalven, *Negligence on the Move*, 33 A.T.L.A.L.J. 1, 31 (1970). *See also* Noel, *Manufacturers' Negligence of Design or Directions for Use of a Product*, 71 YALE L.J. 816 (1962). For a discussion of the distinction between manufacturing defects and design defects, *see* 2 F. HARPER & F. JAMES, THE LAW OF TORTS § 28.11, at 1557 (1956); Henderson, *supra* at 1547. *See also* Holford, *The Limits of Strict Liability for Product Design and Manufacture*, 52 TEXAS L. REV. 81, 84 (1973).

18. *See* Blitzstein v. Ford Motor Co., 228 F.2d 738 (5th Cir. 1961); Carpini v. Pittsburgh & Weirton Bus Co., 216 F.2d 404 (3d Cir. 1954); Comstock v. General Motors Corp., 358 Mich. 163, 99 N.W.2d 627 (1959). *See also* Noel, *Recent Trends in Manufacturers' Negligence as to Design, Instructions or Warnings*, 19 SW. L.J. 43 (1965); Noel, *supra* note 17.

19. 216 F.2d 404 (3d Cir. 1954).

20. *Id.* at 406.

21. *Id.* at 407.

22. Section 395 provides:

A manufacturer who fails to exercise reasonable care in the manufacture of a chattel which, unless carefully made, he should recognize as involving an unreasonable risk of causing physical harm to those who use it for a purpose for which the manufacturer should expect it to be used and to those whom he should expect to be endangered by its probable use, is subject to liability for physical harm caused to them by its lawful use in a manner and for a purpose for which it is supplied.

RESTATEMENT (SECOND) OF TORTS § 395 (1965).

23. Section 398 provides:

A manufacturer of a chattel made under a plan or design which makes it dangerous for the uses for which it is manufactured is subject to liability to others whom he should expect to use the chattel or to be endangered by its probable use for physical harm caused by his failure to exercise reasonable care in the adoption of a safe plan or design.

Id. § 398.

B. *The Rule of* Evans

In *Evans v. General Motors Corp.*,[24] plaintiff, the personal representative of the decedent-consumer, alleged negligence, breach of implied warranty, and strict liability as the bases for recovery against the manufacturer.[25] The consumer was killed when his Chevrolet station wagon was struck broadside by another car. Since the car was designed with an "X" frame, rather than a perimeter frame used in some other models, the sides of the car provided less protection for its occupants in the event of a side-impact collision. Plaintiff contended that the omission of side frame rails created an unreasonable risk of harm to occupants in light of the foreseeability of side-impact collisions and that, since the condition of the vehicle was the proximate cause of the decedent's injuries, the manufacturer was liable in negligence for its design of the car.[26] Moreover, the plaintiff argued that the manufacturer was strictly liable since the product, not having side rails, was in a defective condition and was neither of merchantable quality, nor reasonably fit for its intended use as an automobile.[27] The federal district court dismissed the complaint, concluding that each count failed to state a claim upon which relief could be granted.[28] The Seventh Circuit affirmed[29] in an engagingly simple opinion. First, the court recognized that the central issue was the extent of the manufacturer's duty to users of its product, stating: first, the manufacturer had a duty to design an automobile reasonably fit for its intended use and free from hidden, dangerous defects;[30] second, the design of the car without side frame rails did not cause the collision; third, the manufacturer was not under a duty to make its automobile accident-proof or foolproof, "nor must he render the vehicle 'more' safe where the danger to be avoided is obvious to all"[31] and it was for the legislature to require manufacturers to construct automobiles in which it would be safe to collide;[32] fourth, cases such as *MacPherson* and *Carpini* were not applicable here because in those cases the defect, whether in construction or design, caused the

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24. 359 F.2d 822 (7th Cir.), *cert. denied*, 385 U.S. 836 (1966).
25. 359 F.2d at 823.
26. *Id.* at 824.
27. *Id.*
28. *Id.*
29. *Id.* at 825.
30. *Id.* at 824.
31. *Id., citing* Campo v. Scofield, 301 N.Y. 468, 95 N.E.2d 802 (1950). In *Campo*, plaintiff's hands were mangled in the revolving steel rollers of an onion-topping machine. Plaintiff argued that the defendant negligently designed the machine by failing to equip it with a safeguard or stopping device. *Id.* at 471, 95 N.E.2d at 803. The court rejected the plaintiff's claim because the dangerous condition of the machine without safeguards was patent; unless the danger was latent, plaintiff could not recover. *Id.* at 472, 95 N.E.2d at 804. If a duty to make safer, accident-proof or foolproof machines was to be imposed on the manufacturer, it was for the legislature to impose the duty. *Id.* at 475, 95 N.E.2d at 805. However, in *Evans*, it could not have been seriously argued that the dangers attending the "X" frame design were patent.
32. 359 F.2d at 824.

accident in the first instance;[33] and finally fifth, the intended purpose of an automobile did not include collisions even though collisions were foreseeable.[34] Thus, the court concluded that the manufacturer had satisfied its duty to make the product reasonably fit for its intended use.[35]

Evans elicited much scholarly criticism,[36] but was widely accepted by the judiciary. In *Shumard v. General Motors Corp.*,[37] for example, plaintiff's decedent was killed in a Corvair which exploded upon impact with another vehicle. The District Court for the Southern District of Ohio held that the manufacturer had no duty either to design fireproof cars or to prevent injury to occupants when such cars collide with other objects.[38] Observing that an automobile is not manufactured for the purpose of striking or being struck by other vehicles or objects, the court posited that "the duty of an automobile manufacturer does not include the duty to design and construct an automobile which will insure the occupants against injury no matter how it may be misused or bludgeoned by outside forces."[39]

In *Walton v. Chrysler Motor Corp.*,[40] the plaintiff's Valiant was struck from behind. Due to insufficient fastening with screws, the seat assembly collapsed upon impact; moreover, the seat assembly sustained more impact because the bumper was allegedly weak. Plaintiff argued that his serious injuries resulted from these unsafe design features.[41] However, the Supreme Court of Mississippi not only adopted the *Evans* line of cases as representing the weight of authority, but expanded the *Evans* rationale. The court stated that the automobile manufacturer was not liable for injuries exacerbated by the car's design, even if the court concluded that the design was "defective."[42] Unless the defective design *caused* the initial accident or emergency, the plaintiff had no cause of action.[43] Furthermore, the court ruled that, even under strict liability, it was not sufficient

33. *Id.* at 825.

34. *Id.*

35. *Id.* Judge Kiley wrote a forceful dissent. He reasoned that the manufacturer's duty extended to the environment of the product's use, and that accidents were foreseeable; hence a manufacturer had to exercise reasonable care to minimize collision-related injury. *Id.* at 827 (Kiley, J., dissenting).

36. *See* Kalven, *supra* note 17; Nader & Page, *supra* note 17; Noel, *Manufacturers' Liability for Negligence*, 33 TENN. L. REV. 444 (1966); Sklaw, *supra* note 7; Note, *Liability for Negligent Automobile Design*, 52 IOWA L. REV. 953 (1967); Comment, *Products Liability — Duty of Care in Automobile Design — Fitness For Collision*, 21 S. CAR. L. REV. 451 (1969); Comment, *supra* note 17; 35 A.T.L.A.L.J. 116 (1974); 80 HARV. L. REV. 688 (1967); 4 HOUSTON L. REV. 311 (1966); 42 NOTRE DAME LAW. 111 (1966); 1966 UTAH L. REV. 698; 24 VAND. L. REV. 862 (1971); Keeton, Book Review, 42 NOTRE DAME LAW. 594 (1967).

37. 270 F. Supp. 311 (S.D. Ohio 1967).

38. *Id.* at 312 (citations omitted).

39. *Id.* at 314.

40. 229 So. 2d 568 (Miss. 1969).

41. *Id.* at 570.

42. Recall that the *Evans* court concluded that although the automotive design was a cause of the exacerbated injuries to the plaintiff, it was nevertheless fit for its intended use, and thus not defective. 359 F.2d at 825. The *Walton* court concedes a defective design throughout the opinion. 229 So. 2d at 572–73.

43. 229 So. 2d at 572.

for the plaintiff to show a defect and injury since "there must be some duty owed to the plaintiff with regard to the defect, growing out of the intended normal use for which the product was manufactured."[44] Finally, the court voiced its concern about the ramifications of imposing the duty urged by the plaintiff:

> The adoption of the legal theory propounded by the plaintiff would require this Court to establish by judicial order a new duty not contemplated by common law and not sanctioned by case history. What standards of duty or reasonableness of design would we require, and how could the judiciary police the industry? These questions are unanswerable. The courts have no machinery to inspect and police industry so as to require compliance with detailed design of products.[45]

Similarly, the District Court for the Southern District of West Virginia was confronted with the crashworthy issue in *McClung v. Ford Motor Co.*[46] In that case, the plaintiff-driver alleged that his Mustang was defectively designed in that it was not equipped with shoulder harnesses, seatlocks, and a collapsible steering wheel and steering column, and that these defects exacerbated his injuries upon impact with another vehicle. In a brief opinion, the court determined that the weight of authority was contrary to the theory presented by the plaintiff.[47] Further, as was done in *Walton,* the court pointed to its incompetence to pass upon design standards, asserting that requirements for automobile design were a legislative function.[48]

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44. *Id.* at 573. *See* note 139 *infra.*

45. 229 So. 2d at 573. The following year in Ford Motor Co. v. Simpson, 233 So. 2d 797 (Miss. 1970), the Mississippi Supreme Court affirmed its adherence to the *Walton* standard, stating: "If every state decided what part of an automobile was negligently designed, the manufacturers might be required to have fifty different models of its cars — one for each state. This, of course, would be ridiculous." *Id.* at 799. Recently, the District Court for the Northern District of Mississippi, in a diversity action, was compelled to apply the *Walton-Simpson* rule. Williams v. Cessna Aircraft Corp., 376 F. Supp. 603 (N.D. Miss. 1974). In that case, plaintiff's decedent was killed in an airplane crash. The plaintiff alleged, *inter alia,* that when the aircraft crashed, the seat and restraining harness failed, thus contributing to decedent's death. *Id.* at 605. While noting that *Walton* and *Simpson* have been severely criticized, *see* Maraist & Barksdale, *Mississippi Products Liability — A Critical Analysis,* 43 MISS. L.J. 139, 180 n.200 (1972), and that a distinguished scholar has rejected the *Evans* rationale, *see* Wade, *supra* note 1, at 847–48, the court nevertheless had no choice but to apply existing Mississippi precedent. Thus, Cessna was entitled to partial judgment on the pleadings as to liability for the failure of the seat and harness. 376 F. Supp. at 606–08.

46. 333 F. Supp. 17 (S.D. W.Va. 1971), *aff'd,* 472 F.2d 240 (4th Cir.), *cert. denied,* 412 U.S. 940 (1973).

47. 333 F. Supp. at 20.

48. *Id.* However, the court did suggest in dicta that a manufacturer would be liable for a design which causes injuries, if the design were "at variance with, or contrary to, the accepted body of scientific knowledge possessed by the average mechanical or structural engineering personnel in the profession having to do with the manufacture of subject vehicle." *Id.* at 21. Given the variant design, if injury could reasonably be expected "in the course of normal and accepted use of the product so designed, *and in anticipation of the violence of collisions that can normally be*

The basis of the *Evans* line of cases, therefore, is a belief that the imposition of a duty on car manufacturers to design crashworthy vehicles is a legislative function and thus beyond a court's competence. Indeed, two critics of the crashworthy doctrine have concluded:

> It is evident, therefore, that the complex questions of injury-minimization in automobile accidents are properly a function of legislative and administrative action. The invitation to a jury to decide questions of design not involved in collision causation is an invitation to substitute for a balancing of the social and economic questions involved in such design not only the hindsight and inconsistency which would be present in a case by case approach but also sympathy and speculation.[49]

C. *The Rule of* Larsen

Conversely, in *Larsen v. General Motors Corp.*,[50] the Eighth Circuit did not hesitate to impose a duty upon the manufacturer to design automobiles which would be reasonably safe in the event of a collision. In *Larsen,* the plaintiff, while driving a Corvair, was involved in a head-on collision with another vehicle which thrust the steering mechanism of plaintiff's car rearward into the plaintiff's head, causing severe injuries.[51] Plaintiff argued that the manufacturer was negligent in its design of the steering assembly, in that the driver was exposed to an unreasonable risk of injury from the rearward displacement of the steering shaft upon a left-of-center, head-on collision.[52] The plaintiff also contended that the manufacturer had been negligent in failing to warn purchasers of the allegedly dangerous design, and that the manufacturer had breached implied and express warranties.[53] The federal district court rendered summary judgment in favor of the manufacturer,[54] but the Eighth Circuit reversed.[55] As in *Walton,* the court assumed the veracity of the plaintiff's allegation of a defective design because summary judgment had been granted for defendant.[56] As did the *Evans* court, the Eighth Circuit defined the issue in terms of the scope of the manufacturer's duty in the design of its automobiles, and reached the same conclusion as *Evans,* that the manufacturer's duty of design and construction extends to producing a product reasonably

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expected to occur at times," then the manufacturer would be liable. *Id.* (emphasis added). This dicta, insofar as it suggests that the manufacturer must anticipate collisions, is wholly at variance with the *Evans* rationale.

Cases which have adopted the *Evans* rationale are collected by jurisdiction in Frericks v. General Motors Corp., 20 Md. App. 518, 317 A.2d 494 (1974), *vacated,* 274 Md. 288, 336 A.2d 118 (1975).

49. Hoenig & Werber, *Automobile "Crashworthiness": an Untenable Doctrine,* 20 CLEV. ST. L. REV. 578, 594–95 (1971) (footnotes omitted). *See also* Henderson, *supra* note 18 (lengthy analysis of the limits of the adjudicatory process in design-defect cases); Holford, *supra* note 17, at 84–88 (concern over the complex economic ramifications of products design liability for the manufacturer).

50. 391 F.2d 495 (8th Cir. 1968).

51. *Id.* at 497.

52. *Id.*

53. *Id.*

54. 274 F. Supp. 461 (D. Minn. 1967).

55. 391 F.2d at 506.

56. *Id.* at 497. *See* note 139 *infra.*

fit for its intended use and free from hidden dangerous defects.[57] However, the *Larsen* court parted company with the *Evans* line of cases in its interpretation of the intended use of an automobile. The court reasoned that a car cannot be put to its intended use without the possibility of an accident.[58] Citing *Spruill v. Boyle-Midway, Inc.*,[59] the court said that the manufacturer had to anticipate the environment in which the product would be used. The court stated:

> While automobiles are not made for the purpose of colliding with each other, a frequent and inevitable contingency of normal automobile use will result in collisions and injury-producing impacts. . . . Where the injuries or enhanced injuries are due to the manufacturer's failure to use *reasonable care* to avoid subjecting the user of its products to an *unreasonable risk* of injury, general negligence principles should be applicable. The sole function of an automobile is not just to provide a means of transportation, it is to provide a means of *safe transportation* or as safe as is reasonably possible under the present state of the art.[60]

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57. 391 F.2d at 501. The court traced the manufacturer's liability for negligence in construction and design from MacPherson v. Buick Motor Co., 217 N.Y. 382, 111 N.E. 1050 (1916) (*see* text accompanying notes 9–13 *supra*), through Davlin v. Henry Ford & Son, Inc., 20 F.2d 317 (6th Cir. 1927) (while holding for the manufacturer, the court ruled that the manufacturer was under a duty to use reasonable care in employing designs, materials and assemblies which would fairly meet any emergency of use which is foreseeable), to Carpini v. Pittsburgh & Weirton Bus Co., 216 F.2d 404 (3d Cir. 1954) (*see* text accompanying notes 19–21 *supra*), and Ford Motor Co. v. Zahn, 265 F.2d 729 (8th Cir. 1959) (negligently constructed ashtray blinded a passenger thrown against it when the driver made an emergency stop). *Zahn* was a case involving a construction defect, as opposed to a design defect, but, unlike the construction defect in *MacPherson*, the defect in *Zahn* did not cause the initial emergency — the jolt — but *exacerbated* the plaintiff's injury upon impact with the dashboard area of the car. *Id.* at 730.

58. 391 F.2d at 501–02. Indeed, the court remarked:

> The manufacturer should not be heard to say that it does not intend its product to be involved in any accident when it can easily foresee and when it knows that the probability over the life of its product is high, that it will be involved in some type of injury-producing accident.

Id. at 502.

59. 308 F.2d 79 (4th Cir. 1962). In that case, plaintiff's child died as a result of swallowing furniture polish manufactured by the defendant. The defendant was found negligent in failing to warn adequately of the danger involved in ingesting the polish, notwithstanding defendant's contention that the intended use of the product did not include consumption, and that it did not have to anticipate consumption and warn of the danger. *Id.* at 83.

The *Spruill* court said:

> "Intended use" is but a convenient adaptation of the basic test of "reasonable foreseeability" framed to more specifically fit the factual situations out of which arise questions of a manufacturer's liability for negligence. . . . Normally a seller or manufacturer is entitled to anticipate that the product he deals in will be used only for the purposes for which it is manufactured and sold; thus he is expected to reasonably foresee only injuries arising in the course of such use.
>
> However, he must also be expected to anticipate the environment which is normal for the use of his product and where, as here, the environment is the home, he must anticipate the reasonably foreseeable risks of the use of his product in such environment . . . . and . . . warn [the consumer] of them . . . .

Id. at 83–84.

60. 391 F.2d at 502 (footnotes omitted) (emphasis added).

The court did not place the manufacturer in the position of an insurer, but held only that the manufacturer had a duty of reasonable care consonant with the state of the art to minimize the effect of accidents; that is, the manufacturer was liable only for unreasonable risks of foreseeable injury, created by its design, which would arise in the event of a collision.[61] Further, the manufacturer was liable not for the entire damages, but only for that portion attributable to the defective design.[62]

Additionally, because the plaintiff had stated a cause of action for negligent design, he also had a cause of action for the manufacturer's failure to warn the consumer that the design of the vehicle was defective. The court found, however, that when the danger was obvious and known to the user, no warning was necessary, and no liability attached for injury occurring from the "reasonable hazards" related to the use of the product;[63] but where the dangerous condition was latent, nondisclosure subjected the manufacturer and supplier to liability for creating an unreasonable risk.[64]

The court found it unnecessary to discuss possible liability for breach of implied warranty or strict liability for defective design[65] and rejected the manufacturer's contention that any duty regarding safety in design should be imposed by the legislature or regulatory agency,[66] as envisioned in the National Traffic and Motor Vehicle Safety Act.[67] The *Larsen* court read the Act as supplemental to the common law of negligence and product liability.[68]

Unlike *Evans, Larsen* elicited much scholarly praise, but, initially, little judicial acceptance.[69] In *Mickle v. Blackmon,*[70] the plaintiff was thrown

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61. *Id.* at 502–03. The court continued:

> The duty of reasonable care in design should be viewed in light of the risk. While all risks cannot be eliminated nor can a crash-proof vehicle be designed under the present state of the art, there are many common-sense factors in design, which are or should be well known to the manufacturer that will minimize or lessen the injurious effects of a collision. The standard of reasonable care is applied in many other negligence situations and should be applied here.

Id. at 503.

62. *Id.*

63. *Id.* at 505.

64. *Id.*

65. *Id.* at 506.

66. *Id.*

67. 15 U.S.C. § 1381 *et seq.* (1970). The Act authorizes the Secretary of Transportation, through the National Highway Traffic Safety Administration, to promulgate safety standards; however, compliance with these standards will not immunize the manufacturer from potential common law liability. *Id.* § 1397(c). *See* notes 173–74 *infra.*

68. 391 F.2d at 506.

69. *See, e.g.,* Kalven, *supra* note 17; Sklaw, *supra* note 7; Note, Badorek v. General Motors Corporation: *Strict Liability for Enhanced Injuries Caused by Unreasonable Defective Design,* 16 S. DAK. L. REV. 504 (1971); Comment, *supra* note 17; Comment, *Auto Design: Manufacturer's Duty to Reasonably Protect Occupants Against the Effects of Collisions,* 1969 U. ILL. L.F. 396 (1969); Comment, *The Liability of an Automobile Manufacturer for Failure to Design a Crashworthy Vehicle,* 10 WILLIAMETTE L.J. 38 (1973). *See also* 35 A.T.L.A.L.J. 116 (1974); 24 VAND. L. REV. 862 (1971).

70. 252 S.C. 202, 166 S.E.2d 173 (1969).

against the gearshift lever of the car in which she was a passenger, when the automobile was involved in a collision. The impact of the plaintiff shattered the protective knob affixed to the end of the gearshift lever, and consequently, she was impaled on the lever and permanently paralyzed.[71] The knob had shattered because exposure to sunlight over the years had caused the deterioration of the material of which the knob was composed. Had the material been colored black by the addition of carbon, the knob would not have deteriorated.[72] The Supreme Court of South Carolina adopted the rationale of *Larsen*:

> [A]n automobile manufacturer knows with certainty that many users of his product will be involved in collisions, and that the incidence and extent of injury to them will frequently be determined by the placement, design and construction of such interior components as shifts, levers, knobs, handles and others. By ordinary negligence standards, a known risk of harm raises a duty of commensurate care. We perceive no reason in logic or law why an automobile manufacturer should be exempt from this duty.[73]

The court, quoting *Spruill*[74] as to the intended use of a product, concluded that implicit in the jury verdict for the plaintiff was a finding that the gearshift lever was not adequately guarded and therefore presented an unreasonable risk of injury.[75]

In *Dyson v. General Motors Corp.*,[76] plaintiff was a passenger in a Buick two-door hardtop which overturned. The roof collapsed on the occupants because it was not strong enough to support the weight of the overturned car.[77] Plaintiff charged negligence in design and manufacture, breach of express and implied warranties of fitness, strict liability, and conscious or negligent misrepresentation.[78] The United States District Court for the Eastern District of Pennsylvania, applying Pennsylvania law, quickly disposed of plaintiff's warranty and misrepresentation arguments[79] and treated the negligence and strict liability arguments together. After recounting the *Evans* and *Larsen* positions, the court observed that Pennsylvania had adopted the rule of sections 395 and 398 of the *Restatement (Second) of Torts*,[80] as well as the rule of *Palsgraf v. Long Island Railway Co.*[81] "that the scope of the duty is coterminus with the foreseeability of risk."[82] Moreover, the court discerned in recent Pennsylvania cases "a continuing trend toward the broadening of the scope of the duty

71. *Id.* at 217, 166 S.E.2d at 178.
72. *Id.* at 235, 166 S.E.2d at 188.
73. *Id.* at 230, 166 S.E.2d at 185.
74. *See* note 59 *supra.*
75. 252 S.C. at 236, 166 S.E.2d at 188.
76. 298 F. Supp. 1064 (E.D. Pa. 1969).
77. *Id.* at 1065.
78. *Id.* at 1066.
79. *Id.* at 1066–67.
80. *See* notes 22 & 23 *supra.*
81. 248 N.Y. 339, 162 N.E. 99 (1928).
82. 298 F. Supp. at 1069.

of care,"[83] and a liberal construction of the principles of strict liability set forth in section 402A of the *Restatement*.[84] Consequently, Judge Fullam, reasoning that a Pennsylvania court would adopt *Larsen*, stated the "correct rule" to be that: 1) either car accidents are a readily foreseeable misuse of the product,[85] or 2) car accidents are incidental to the normal and intended use of motor vehicles.[86] Thus, passengers must be provided a "reasonably safe container" in which to ride and the roof, as part of that container, "should provide more than merely protection against rain."[87] However, in determining whether the design was defective, that is, created unreasonable risks or was unreasonably dangerous, the court appeared to defer to industry custom as the standard against which to measure the manufacturer's duty and breach.[88]

More recently, New York adopted *Larsen* in *Bolm v. Triumph Corp.*,[89] although not without qualification. In *Bolm*, plaintiff was riding a motorcycle when it collided with an automobile. A metal luggage rack was positioned on top of the motorcycle's gas tank, immediately in front of the saddle; when plaintiff was propelled forward by the impact, he was torn by the rack and sustained pelvic and genital injuries resulting in sterility.[90] Plaintiff contended that the motorcycle manufacturer was liable

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83. *Id.* at 1070. For example, in Doyle v. South Pittsburgh Water Co., 414 Pa. 199, 199 A.2d 875 (1964), the Pennsylvania Supreme Court held that a private citizen whose building was destroyed by fire could bring suit against the water company which was allegedly negligent in maintaining the water works, resulting in insufficient water pressure to extinguish the blaze. Judge (later Justice) Cardozo had earlier reached a contrary result. H.R. Moch Co., Inc. v. Rensselaer Water Co., 247 N.Y. 160, 159 N.E. 896 (1928).

84. 298 F. Supp. at 1070. Section 402A provides:

> (1) One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if
>
> (a) the seller is engaged in the business of selling such a product, and
>
> (b) it is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.
>
> (2) The rule stated in Subsection (1) applies although
>
> (a) the seller has exercised all possible care in the preparation and sale of his product, and
>
> (b) the user or consumer has not bought the product from or entered into any contractual relation with the seller.

RESTATEMENT (SECOND) OF TORTS § 402A (1965).

85. 298 F. Supp. at 1073. For examples of foreseeable misuse, *see* Spruill v. Boyle-Midway, Inc., 308 F.2d 79 (4th Cir. 1962); Ritter v. Narragansett Elec. Co., 109 R.I. 176, 283 A.2d 255 (1971).

86. 298 F. Supp. at 1073.

87. *Id.*

88. *Id.* at 1073–74. The court concluded that:

> in the present case, the manufacturer was not necessarily under an obligation to provide a hardtop model which would be as resistant to roll-over damage as a four-door sedan; but the defendant was required, in my view, to provide a hardtop automobile which was a reasonably safe version of such model, and which was not substantially less safe than other hardtop models.

Id. (citations omitted).

89. 33 N.Y.2d 151, 305 N.E.2d 769, 350 N.Y.S.2d 644 (1973).

90. *Id.* at 154, 305 N.E.2d at 770, 350 N.Y.S.2d at 646.

in negligence for the design of the motorcycle which enhanced his injuries, strict liability for a defective product, and breach of warranty.[91] The New York Court of Appeals affirmed the appellate division's denial of the manufacturer's motion for summary judgment.[92] The *Bolm* court's opting for the *Larsen* analysis was surprising, since the New York Court of Appeals had earlier taken the position in *Campo v. Scofield*[93] that a manufacturer is under no duty to make his product accident-proof or foolproof, or to provide safeguards against the product's obvious hazards. In fact, *Campo* had been cited by *Evans* and its progeny as authority for the proposition that a manufacturer is under no duty to produce a crashworthy vehicle. Nevertheless, the *Bolm* court did not deem *Campo* dispositive of the case in favor of the manufacturer.[94]

Indeed, the court of appeals considered *Evans* properly refuted by *Larsen, Dyson,* and other decisions. The court stated that the manufacturer was liable for injuries which were exacerbated by a defective design when the manufacturer could have reasonably foreseen that the design feature would cause injury upon impact, and when the design defect was latent.[95]

Larsen, as refined in *Bolm,* was embraced by the Maryland Court of Appeals in *Volkswagen of America, Inc. v. Young,*[96] in which the auto of the plaintiff's decedent was struck from behind by another vehicle. Plaintiff alleged that the decedent's injuries were caused by the design of the seat assembly and the passenger compartment structures, surfaces, and protrusions.[97] The court concluded that an automobile manufacturer is liable in negligence "for a defect in design which the manufacturer could

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91. *Id.*

92. *Id.* at 160, 305 N.E.2d at 774, 350 N.Y.S.2d at 651. The Appellate Division opinion is reported at 41 App. Div. 2d 54, 341 N.Y.S.2d 846 (1973).

93. 301 N.Y. 468, 95 N.E.2d 802 (1950).

94. 33 N.Y.2d at 156, 305 N.E.2d at 772, 350 N.Y.S.2d at 648. Although the *Bolm* court did not deem *Campo* to be inconsistent with the *Larsen* rationale, a lower New York court, in Edgar v. Nachman, 37 App. Div. 2d 86, 323 N.Y.S.2d 53, *motion for leave to appeal denied,* 29 N.Y.2d 483, 274 N.E.2d 312, 324 N.Y.S.2d 1029 (1971), had, on the basis of *Campo* and its application in the *Evans* line of cases, denied relief to a plaintiff who had alleged the defective design of a gas cap on a Volkswagen. When the Volkswagen was involved in a collision, the cap flew off, the gas ignited, and the occupant was fatally burned. The *Edgar* court concluded that a design defect which had not caused the accident but merely had aggravated or enhanced the injuries was not actionable. 37 App. Div. 2d at 88, 323 N.Y.S.2d at 55. However, the court of appeals overruled this analysis, stating:

> In citing *Campo* for such a broad proposition, the *Edgar* court necessarily rested on one of two alternative rationales: either it considered the danger of all "second collision" injuries to be patent or obvious, no matter what the cause; or it considered the very involvement in a collision to be outside the "intended use" of the vehicle so that the injuries resulting therefrom — "second collision" injuries — are not due to a breach of duty. While the latter alternative finds some support in other jurisdictions, we find neither rationale tenable.

33 N.Y.2d at 157, 305 N.E.2d at 772, 350 N.Y.S.2d at 649 (citations omitted).

95. *Id.* Thus, even after *Bolm,* the latent-patent danger rule of *Campo* retains vitality. *See* text accompanying notes 158–60 *infra.*

96. 272 Md. 201, 321 A.2d 737 (1974).

97. *Id.* at 204, 321 A.2d at 739.

have reasonably foreseen would cause or enhance injuries on impact, *which is not patent or obvious to the user,* and which in fact leads to or enhances the injuries in an automobile collision."[98] The court was especially careful to outline the following factors relevant to a finding of "reasonable" care in design to avoid "unreasonable" risks: the likelihood of harm and the possible gravity of harm balanced against the burden of precautions necessary to avoid the harm;[99] the style and type of vehicle; its particular purpose and price; and finally, the nature of the accident.[100] Thus, the Maryland court concluded that, in order to impose liability, the design must be unreasonable in light of all relevant considerations and the danger inherent in the design must be latent.[101]

In *Turcotte v. Ford Motor Co.*,[102] a strict liability action,[103] the First Circuit concluded that Rhode Island, the forum state, would adopt *Larsen.*[104] Plaintiff's son had been killed when the Maverick in which he was a passenger was struck from behind and exploded.[105] Rejecting *Evans,* the First Circuit stated:

> A literal *Evans*-type interpretation of "intended use" fails to recognize that the phrase was first employed in early products-liability cases such as *Greenman* [*Greenman v. Yuba Power Prods., Inc.,* 59 Cal. 2d 57, 64, 377 P.2d 897, 901, 27 Cal. Rptr. 697, 701 (1963)] merely to illustrate the broader central doctrine of foreseeability. *The phrase was not meant to preclude manufacturer responsibility for the probable ancillary consequences of normal use.*[106]

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98. *Id.* at 216, 321 A.2d at 745 (emphasis added).

99. *Id.* at 219, 321 A.2d at 746. This is essentially the negligence formula propounded by Judge Learned Hand in United States v. Carroll Towing Co., 159 F.2d 169 (2d Cir. 1947) and Conway v. O'Brien, 111 F.2d 611 (2d Cir. 1940), *rev'd on other grounds,* 312 U.S. 492 (1941).

100. 272 Md. at 219, 321 A.2d at 746. For another case adopting *Larsen* in which the reasonableness of the particular design was determined in light of many factors, *see* Dreisonstok v. Volkswagenwerk, A.G., 489 F.2d 1066 (4th Cir. 1974).

101. 272 Md. at 219, 321 A.2d at 747, *citing* 391 F.2d at 505. However, the discussion in *Larsen* on latent design defect related to the manufacturer's liability for negligent failure to warn of a dangerous condition, which cause of action was *in addition to* the maufacturer's liability for negligent design of the vehicle. 391 F.2d at 505.

102. 494 F.2d 173 (1st Cir. 1974).

103. *See* note 84 *supra.*

104. 494 F.2d at 181. The First Circuit was applying Rhode Island law. Although the Supreme Court of Rhode Island had not expressly adopted the reasoning of *Larsen,* the First Circuit based its conclusion on that state supreme court's expansive construction of the "intended use" concept in Ritter v. Naragansett Elec. Co., 109 R.I. 176, 283 A.2d 255 (1971). 494 F.2d at 180–81. In *Ritter,* a four-year-old child was standing on an open oven door to see into a pot on the top of the range, when the range fell over upon her and her sister. 109 R.I. at 179, 283 A.2d at 257. The *Ritter* court concluded that a jury could find that the manufacturer knew, that as a consequence of the range's design, the danger in the use of the oven door as a shelf was foreseeable; hence, the manufacturer had been negligent in not warning of the consequences of such use of the oven door. *Id.* at 185, 283 A.2d at 260.

105. 494 F.2d at 176.

106. *Id.* at 181 (citations omitted) (emphasis added).

However, in adopting *Larsen,* the court appeared to confuse the defense of assumption of risk, the latent-patent defect rule of *Campo, Bolm,* and *Young,* and the requirement of proximate causation when it concluded that, "where a design defect is apparent or made known to the automobile purchaser, an action alleging such defect as the cause of injury cannot lie."[107]

In *Perez v. Ford Motor Co.,*[108] plaintiff's truck was struck from behind; the cab disengaged from the frame, steering control was lost, and serious injury resulted.[109] The Fifth Circuit, applying Louisiana law, ignored both the policy arguments in the *Evans* line of cases and the extensive analysis of the scope of the manufacturer's duty in the *Larsen* line of cases. Rather, in its discussion of the strict liability requirement of an unreasonably dangerous defect, the court focused on the "normal use" of a product.[110] As long as the vehicle was being normally used on the highway at the time of the accident, the "normal use" requirement found in Louisiana products liability jurisprudence was met, notwithstanding the accident.[111] The accident was neither an unintended use of the vehicle nor foreseeable misuse of the product as discussed in *Evans* and *Dyson,* but an interruption of normal use. "The fact that it was involved in an accident . . . does not legally preclude a claim predicated on defects in design or manufacture."[112] Whether the design was unreasonably dangerous under the circumstances of the accident was for the trier of fact to determine.[113]

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107. *Id.* at 183, *citing* Burkhard v. Short, 28 Ohio App. 2d 141, 148, 275 N.E.2d 632, 636–37 (1971). In *Burkhard,* the court held that an unpadded dashboard was not an unreasonably dangerous defect within the meaning of section 402A of the *Restatement. Id.* at 147–48, 275 N.E.2d at 637. The result in *Burkhard* was not based upon assumption of risk, although it can be reasoned that a person *must* have been aware of the fact of the unpadded dashboard, and hence have assumed the risks inherent in it. Assumption of risk is an affirmative defense which must be pleaded and proved by the defendant, whereas the latency of the allegedly dangerous condition of the product must be alleged — or at least proved — by the plaintiff, in those jurisdictions requiring that the defect or dangerous condition be latent. *E.g.,* Campo v. Scofield, 301 N.Y. 468, 95 N.E.2d 802 (1950); *see* note 31 *supra* and text accompanying notes 157–60 *infra. See also* Keeton, *Product Liability and the Automobile,* 9 FORUM 1, 11 (1973). On the other hand, the plaintiff's voluntary assumption of the risk of the patent danger, or his negligence in not becoming aware of the patent condition, might be deemed the "proximate cause" of the injury, rather than the defect itself. *See generally* W. PROSSER, *supra* note 12, §§ 41–45, at 236–90; Noel, *Defective Products: Abnormal Use, Contributory Negligence, and Assumption of Risk,* 25 VAND. L. REV. 93 (1972). The *Turcotte* court was apparently talking about voluntary assumption of known risks by the purchaser, which would not dispose of the manufacturer's liability for injuries to other users. 494 F.2d at 183 & n.13.

108. 497 F.2d 82 (5th Cir. 1974).

109. *Id.* at 84.

110. *Id.* at 85.

111. *Id.* at 87.

112. *Id.*

113. *Id.* The court concluded:

> We are not saying that an automobile manufacturer has a duty to produce a vehicle which provides absolute safety for passengers under any and all

Most recently, *Larsen* has been adopted by Texas in *Turner v. General Motors Corp.*,[114] a strict liability action in which the plaintiff charged defective design of the roof of his Chevrolet. In an accident, the plaintiff's car overturned, collapsing the roof on the plaintiff. Consequently, the plaintiff's hands and legs were paralzyed.[115] The *Turner* court noted that the "environment" definition of intended use announced in *Spruill*[116] had recently been approved by the Texas Supreme Court.[117] Thus, since *Larsen* was based on *Spruill,* the court found the *Larsen* reasoning compelling.[118] Additionally, the *Turner* court acknowledged that the reasonableness of the design depended on many factors.[119] Moreover, the court effectively disposed of the manufacturer's contention that automobile design standards are a legislative function, beyond a judge and jury's competence.[120] Finally, the court reached the defendant's ultimate contention that its roof design was comparable to that of all mass-produced vehicles in the United States and therefore could not be "unreasonably" dangerous as a matter of law.[121] Although there was a suggestion in *Dyson* that the manufacturer satisfied his duty of reasonable design if the vehicle were not substantially less safe than other hardtop models,[122] the *Turner* court noted that the entire industry might be indicted for defective

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conditions. We are saying that plaintiff Perez should have the opportunity to present his evidence to a jury to prove that his Ford pickup truck was unreasonably dangerous when involved in a rear-end collision at a thirty miles an hour speed differential. No reasonable person would expect a truck to sustain such an accident without the slightest dent or injury to its passengers. But the question is whether what happened in the collision should have happened. We believe that reasonable men could differ as to whether or not the design, manufacture, or construction of the Perez truck was unreasonably dangerous under these circumstances.

Id. The *Perez* approach is not ingenius, but merely an affirmation, from a slightly different vantage point, of the principles underlying *Larsen.*

114. 514 S.W.2d 497 (Tex. Civ. App. 1974). The opinion is especially significant because previously it had been assumed by the federal district court in Willis v. Chrysler Corp., 264 F. Supp. 1010, 1011 (S.D. Tex. 1967), that *Evans* was the law of Texas.

115. 514 S.W.2d at 499.

116. *See* note 59 *supra.*

117. Otis Elevator Co. v. Wood, 436 S.W.2d 324 (Tex. 1968).

118. 514 S.W.2d at 504.

119. *Id. See* text accompanying notes 99–101 *supra.*

120. *Id.* at 506. The court stated that:

we are not aware that the argument of the necessity of federal regulation has been made in regard to design defects which cause accidents, and we cannot see any reason why design defects which cause injuries are any more in need of federal control. The danger that juries will arrive at conflicting conclusions is a hazard every manufacturer who distributes nationally runs. The complex, technical questions facing juries, aided by expert testimony, cannot be more difficult than the questions in such fields as medical malpractice.

Id.

121. *Id.*

122. 298 F. Supp. at 1073–74. *See* text accompanying note 88 *supra.*

design of automobile roofs.[123] Clearly, *Turner* represents the most aggressive application of the *Larsen* rationale thus reported.[124]

Thus, the *Larsen* line of cases proceeds from an expanded notion of a product's intended use and the manufacturer's duty of reasonable care in the design of his product given the environment of its use. In those cases, it is evident that the courts consider themselves proper forums, supplemental to legislative bodies, in which to impose liability for injury-causing designs.[125]

IV. THEORIES OF AUTOMOBILE MANUFACTURER LIABILITY: NEGLIGENCE, STRICT LIABILITY, WARRANTY

But what is the nature of this liability? The principle theories of recovery are negligence, strict liability, and breach of warranty. The manufacturer's negligence can be threefold: negligent design, *i.e.*, the design creates unreasonable risks of injury to users in its normal or intended use; negligence in failing to adequately inspect and test the car to discover and eliminate dangerous design features; and negligent failure to warn of the design hazards. Strict liability is based on either the rule of section 402A of the *Restatement*,[126] the design presents a defective condition unreasonably dangerous to the user or consumer, or on the rule of *Greenman v. Yuba Power Products, Inc.*,[127] the design is defective and renders the product unsafe for its intended use.[128] The warranty theory is generally framed in terms of breach of express warranty or implied warranty of merchantability.[129] The question becomes, of course, whether it matters

123. 514 S.W.2d at 506–07. The court stated that "the expert's condemnation of the industry for its failure to install roll bars constitutes a sufficient showing that the custom itself was unreasonably dangerous." *Id.* at 507. *See generally* James & Sigerson, *supra* note 17, at 709; Morris, *Custom and Negligence*, 42 COLUM. L. REV. 1147 (1942). The *Turner* court's approach recalls Mr. Justice Holmes' famous words: "What usually is done may be evidence of what ought to be done, but what ought to be done is fixed by a standard of reasonable prudence, whether it is usually complied with or not." Texas & Pac. Ry. v. Behymer, 189 U.S. 468, 470 (1903). *See also* The T.J. Hooper, 60 F.2d 737, 740 (2d Cir. 1932) (a "whole calling" may be negligent in having unduly lagged in the adoption of new, available devices).

124. Other decisions embracing *Larsen* include Passwaters v. General Motors Corp., 454 F.2d 1270 (8th Cir. 1972); Grundmanis v. British Motors Corp., 308 F. Supp. 303 (E.D. Wis. 1970); Cronin v. J.B.E. Olson Corp., 8 Cal. 3d 121, 501 P.2d 1153, 104 Cal. Rptr. 433 (1972); Badorek v. General Motors Corp., 11 Cal. App. 3d 902, 90 Cal. Rptr. 305 (1970); Friend v. General Motors Corp., 118 Ga. App. 763, 165 S.E.2d 734, *cert. dismissed*, 225 Ga. 290, 167 S.E.2d 926 (1969); Engberg v. Ford Motor Co., 205 N.W.2d 104 (S.D. 1973).

125. *See* text accompanying notes 170–74 *infra*.

126. For text of this section, *see* note 84 *supra*.

127. 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1963).

128. *Id.* at 64, 377 P.2d at 901, 27 Cal. Rptr. at 701. For a comparison of the *Greenman* and *Restatement* approaches to strict liability, *see* Clary v. Fifth Ave. Chrysler Center, Inc., 454 P.2d 244, 247 (Alaska 1969); Cronin v. J.B.E. Olson Corp., 8 Cal. 3d 121, 131–34, 501 P.2d 1153, 1162–63, 104 Cal. Rptr. 433, 440–42 (1972).

129. In this regard, section 2–313 of the Uniform Commercial Code provides:

> Express Warranties by Affirmation, Promise, Description, Sample—
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> (1) Express warranties by the seller are created as follows:
>
> (a) Any affirmation of fact or promise made by the seller to the buyer which relates to the goods and becomes part of the basis of the

that the plaintiff proceeds on a negligence, strict liability, or warranty theory. It is submitted that, with the possible exception of a warranty action, the theory of the action does not affect the plaintiff's burden of proof, the manufacturer's defenses, or the outcome of the action.

The warranty theory is the least satisfactory approach in automobile design cases, and the majority of the cases in both the *Evans* and *Larsen* lines either do not reach the warranty issue[130] or summarily dispose of it.[131] A warranty action is unsatisfactory for a plaintiff for a variety of reasons: 1) the manufacturer never expressly warrants his automobile to be reasonably safe in a collision;[132] 2) any implied warranties of either mer-

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bargain creates an express warranty that the goods shall conform to the affirmation or promise.

(b) Any description of the goods which is made part of the basis of the bargain creates an express warranty that the goods shall conform to the description.

(c) Any sample or model which is made part of the basis of the bargain creates an express warranty that the whole of the goods shall conform to the sample or model.

(2) It is not necessary to the creation of an express warranty that the seller use formal words such as "warrant" or "guarantee" or that he have a specific intention to make a warranty, but an affirmation merely of the value of the goods or a statement purporting to be merely the seller's opinion or commendation of the goods does not create a warranty.

UNIFORM COMMERCIAL CODE § 2–313.

Section 2–314 provides:

Implied Warranty: Merchantability; Usage of Trade:

(1) Unless excluded or modified (Section 2–316), a warranty that the goods shall be merchantable is implied in a contract for their sale if the seller is a merchant with respect to goods of that kind. . . .

(2) Goods to be merchantable must be at least as such as:

(a) pass without objection in the trade under the contract description; and

(b) in the case of fungible goods, are of fair average quality within the description; and

(c) are fit for the ordinary purposes for which such goods are used; and

(d) run, within the variations permitted by the agreement, of even kind, quality and quantity within each unit and among all units involved; and

(e) are adequately contained, packaged, and labeled as the agreement may require; and

(f) conform to the promises or affirmations of fact made on the container or label if any.

(3) Unless excluded or modified (Section 2–316) other implied warranties may arise from course of dealing or usage of trade.

Id. § 2–314.

130. *See, e.g.*, Larsen v. General Motors Corp., 391 F.2d 495, 506 (8th Cir. 1968); Bolm v. Triumph Corp., 33 N.Y.2d 151, 305 N.E.2d 769, 350 N.Y.S.2d 644 (1973).

131. *E.g.*, Evans v. General Motors Corp., 359 F.2d 822, 825 (7th Cir. 1966); McClung v. Ford Motor Co., 333 F. Supp. 17, 20 (S.D. W.Va. 1971); Dyson v. General Motors Corp., 298 F. Supp. 1064, 1066 (E.D. Pa. 1969); Shumard v. General Motors Corp., 270 F. Supp. 311, 314 (S.D. Ohio 1967).

132. For an analysis of the scope and effectiveness of new car warranties, *see* R. SPEIDEL, R. SUMMERS & J. WHITE, COMMERCIAL AND CONSUMER LAW 1168–77 (2d ed. 1974); Whitford, *Law and the Consumer Transaction: A Case Study of the Automobile Warranty*, 1968 WISC. L. REV. 1006.

chantability or fitness for a particular purpose are generally excluded or modified;[133] 3) the existence of privity requirements[134] and notice re-

133. Section 2-316 of the Uniform Commercial Code specifically allows such exclusions:

> Exclusion or Modification of Warranties—
> (1) Words or conduct relevant to the creation of an express warranty and words or conduct tending to negate or limit warranty shall be construed wherever reasonable as consistent with each other; but subject to the provisions of this Article on parol or extrinsic evidence (Section 2-202) negation or limitation is inoperative to the extent that such construction is unreasonable.
> (2) Subject to subsection (3), to exclude or modify the implied warranty of merchantability or any part of it the language must mention merchantability and in case of a writing must be conspicuous, and to exclude or modify any implied warranty of fitness the exclusion must be by a writing and conspicuous. Language to exclude all implied warranties of fitness is sufficient if it states, for example, that "There are no warranties which extend beyond the description on the face hereof."
> (3) Notwithstanding subsection (2)
> (a) unless the circumstances indicate otherwise, all implied warranties are excluded by expressions like "as is," "with all faults" or other language which in common understanding calls the buyer's attention to the exclusion of warranties and makes plain that there is no implied warranty; and
> (b) when the buyer before entering into the contract has examined the goods or the sample or model as fully as he desired or has refused to examine the goods there is no implied warranty with regard to defects which an examination ought in the circumstances have revealed to him; and
> (c) an implied warranty can also be excluded or modified by course of dealing or course of performance or usage of trade.
> (4) Remedies for breach of warranty can be limited in accordance with the provisions of this Article on liquidation or limitation of damages and on contractual modification of remedy (Sections 2-718 and 2-719).

UNIFORM COMMERCIAL CODE § 2-316.

Of course, under section 2-302 and cases such as Henningsen v. Bloomfield Motors, Inc., 32 N.J. 358, 161 A.2d 69 (1960), disclaimers may be void as against public policy. *See* Ellinghaus, *In Defense of Unconscionability*, 78 YALE L.J. 757 (1969); Leff, *Unconscionability and the Code: The Emperor's New Clause*, 115 U. PA. L. REV. 485 (1967); Murray, *Unconscionability: Unconscionability*, 31 U. PITT. L. REV. 1 (1969).

134. Consider, for example, the difficulties encountered by the plaintiff in maintaining a warranty action in Dyson v. General Motors Corp., 298 F. Supp. 1064, 1066 (E.D. Pa. 1969), and in LaGorga v. Kroger Co., 275 F. Supp. 373, 376 (W.D. Pa. 1967), due to a lack of *horizontal* privity. In the leading early case of Baxter v. Ford Motor Corp., 168 Wash. 456, 12 P.2d 409 (1932), the court eliminated the requirement of *vertical* privity in an action for breach of express warranty. The court reasoned:

> It would be unjust to recognize a rule that would permit manufacturers of goods to create a demand for their products by representing that they possess qualities which they, in fact, do not possess, and then, because there is no privity of contract existing between the consumer and the manufacturer, deny the consumer the right to recover if damages result from the absence of those qualities, when such absence is not readily noticeable.

Id. at 462-63, 12 P.2d at 412.

Under the Uniform Commercial Code, third party beneficiaries of express and implied warranties are dealt with in three alternative sections. UNIFORM COMMERCIAL CODE § 2-318 (1972). *See generally* Weaver, *Allocation of Risks in Products Liability Cases: The Need for a Revised Third Party Beneficiary Theory in UCC Warranty Actions*, 52 VA. L. REV. 1028 (1966); Note, *supra* note 13, at 456-57.

quirements;[135] and 4) the difficulty in convincing a court that an uncrashworthy car is in fact unmerchantable.[136]

Conversely, negligence and strict liability are equally satisfactory theories of liability, but are essentially indistinguishable when applied to the crashworthy issue. If the plaintiff proceeds on a negligent design theory, he must establish that the manufacturer owed a duty of care in design so that the vehicle was reasonably safe for intended use, given the broader notion of intended use developed in the *Larsen* line of cases; that the manufacturer breached that duty because the design in fact was not reasonably safe; that plaintiff was injured; and the injury was proximately caused by the manufacturer's breach of duty.[137] Under strict liability, the plaintiff must establish a defective design which was unreasonably dangerous,[138] and was responsible for plaintiff's injuries. When the plaintiff establishes an unreasonably dangerous design and injury, he establishes at the same time strict liability and, for purposes of negligence, a breach of duty. The identity of these theories is recognized by commentators and courts alike,[139] although one commentator has argued in favor of the strict liability theory because decisions based on strict liability

> represent an attempt to shed the encrusted history of the law of negligence by invoking a separate vocabulary which is more specifically

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135. Section 2-607 of the Uniform Commercial Code (UCC) provides in part: "Where a tender has been accepted (a) the buyer must within a reasonable time after he discovers or should have discovered any breach notify the seller of breach or be barred from any remedy . . . ." UNIFORM COMMERCIAL CODE § 2-607(3)(a). In *Greenman,* Justice Traynor focused on the requirement of notice for breach of warranty under the Uniform Sales Act which was essentially the same as section 2-607(3) of the UCC and rejected the requirement where the plaintiff suing for breach of warranty was not in privity with the remote seller. 59 Cal. 2d at 61–62, 377 P.2d at 899–901, 27 Cal. Rptr. at 699–701. It has been observed recently that a court may be less inclined in a consumer-personal injury case to rigorously apply the Code's warranty and notice provisions. R. SPEIDEL, R. SUMMERS & J. WHITE, *supra* note 132, at 1150.

136. Note, *supra* note 13, at 457.

137. W. PROSSER, *supra* note 12, § 30, at 143. *See also* Rheingold, *Proof of Defect in Product Liability Cases,* 38 TENN. L. REV. 325, 325–27 (1971) [hereinafter cited as Rheingold, *Proof*].

138. However, a recent California case dispenses with the requirement of "unreasonable danger," instead focusing only upon the defect and injury. Cronin v. J.B.E. Olson Corp., 8 Cal. 3d 121, 501 P.2d 1153, 104 Cal.. Rptr. 433 (1972). While this approach may be satisfactory in cases of manufacturing defects, the case in *Cronin,* when the issue involves a design defect, "defect" can only be measured in terms of "unreasonableness" of the danger created by the design. *See* Keeton, *Product Liability and the Meaning of Defect,* 5 ST. MARY'S L.J. 30 (1973).

139. *See, e.g.,* Rheingold, *Proof, supra* note 137, at 325–26, in which the author asserted that a defect for strict liability purposes is a defect for negligence and warranty purposes, and that there is little practical difference in the legal bases for recovery — at least as far as the trier of fact is concerned. Professor Sklaw has explained that proof of negligence is built into proof of the defect for strict liability purposes. Stated differently, the finding of a defect is dependent upon a showing of a deviation from required due care, *i.e.,* negligence. Thus, as proof of negligence rests on a showing of failure of the manufacturer to act reasonably, proof of strict liability in second collisions actually carries the same requirement as to the defect. Sklaw, *supra* note 7, at 522–23. Dean Wade has remarked that the proof necessary

pointed and thus, hopefully, more effective in dealing with a still evolving legal situation. Further, even if the ultimate meaning of this new set of words is the same as the old, their effect is not. The distinction already noted between the effect of an instruction phrased in the language of warranty and that of strict liability in tort is equally applicable when comparing strict liability with negligence. In either case, strict liability language is plaintiff-oriented.[140]

V. "DESIGN DEFECT"

A. *Meaning and Existence*

While the various theories upon which the plaintiff's action proceeds are easily conceptualized, the idea of the "design defect" is not so easily grasped. In many of the opinions, a defect is assumed for purposes of the opinion, so that there is no attempt to define the term.[141] While it is not difficult to conceive of a manufacturing defect, as in *MacPherson,* where one wheel was substandard compared to all other wheels produced by the same manufacturer, the notion of the design defect at first appears to be a contradiction in terms since the product strictly conforms to the model design. Therefore, the defect, under any theory of liability, inheres in the design's injury-producing capacity.

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to establish strict liability will certainly be sufficient to establish negligence liability as well. "There are thus inmate similarities between the actions in negligence and in strict liability, and changing the terminology does not alter this." Wade, *supra* note 5, at 837. *See also* 24 VAND. L. REV. 862, 866 n.37 (1971). Dean Prosser has noted, however, that "[s]ince proper design is a matter of reasonable fitness, the strict liability adds little or nothing to negligence on the part of the manufacturer; but it becomes more important in the case of a dealer who does not design the product." W. PROSSER, *supra* note 12, § 99, at 659 n.72.

Likewise, the *Dyson* court reasoned:

> In determining the possible liability of the defendant under general negligence principles, and under the strict-liability concepts of section 402A of the Restatement of Torts, 2d, the accurate formulation of the issues may differ, but the essence of the issues is identical. In the exercise of due care (or, to avoid creating an "unreasonably dangerous" product) should the defendant have designed the roof of its 1965 Buick Electra hardtop so that it would support the weight of an automobile, when, after a 180° roll-over, the vehicle came to rest on its roof?

298 F. Supp. at 1067.

The *Walton* court also presented a case in which the strict liability and negligence principles blend. In that case, the court proceeded under section 402A strict liability, assumed a defect and injury, but did not impose liability because there was no *duty* owed by the manufacturer with regard to the defect; hence the defect was not actionable. 229 So. 2d at 573. While the opinion demonstrated the identity of negligence and strict liability in cases of design defects, the problem with the court's reasoning is that, if the manufacturer owed no duty to make the car "crashworthy," then there was no "defect" in design upon which the plaintiff could proceed under strict liability. Yet the court illogically conceded the existence of a defect! *See id.* at 570.

140. Sklaw, *supra* note 7, at 523–24 (footnotes omitted).

141. *See, e.g.,* Larsen v. General Motors Corp., 391 F.2d 495 (8th Cir. 1968); Badorek v. General Motors Corp., 11 Cal. App. 3d 908, 90 Cal. Rptr. 305 (1970); Walton v. Chrysler Motor Corp., 229 So. 2d 568 (Miss. 1969).

Under a traditional negligence analysis, whether the design is defective depends first upon the existence of an apparent risk — a recognizable danger.[142] The *Evans* and *Larsen* lines of cases both acknowledge that automobile collisions are foreseeable — indeed inevitable. It takes little imagination to conceive the consequences to the occupants of a vehicle upon impact: their bodies strike the interior, while the car itself explodes, breaks apart, or collapses upon the occupants. Because the collision and resulting injuries are recognizable and foreseeable, a design is defective if the injury-producing feature presents a foreseeable, appreciable risk which could have been averted by a different design without substantially affecting the utility, price, and attractiveness of the product. In the *Evans* case, for example, the perimeter frame would have afforded the occupant of the car greater protection in the event of a broadside collision, a recognizable danger. The manufacturer could have guarded against that risk by use of the perimeter frame, rather than the "X" frame, apparently at an insubstantial extra cost.[143] The design would be found defective if the factfinder determined that the manufacturer's choice of "X" frame, in the face of the recognizable, appreciable risk of broadside collisions, was unreasonable. This analysis is essentially identical to that employed by Judge Learned Hand in a negligence case to ascertain whether the defendant's conduct was reasonable: namely, was the burden on the defendant to take adequate precautions in the face of the recognized danger less than the probability that the injury-producing event would occur, multiplied by the gravity of the injury which would result if the event occurred.[144] This balancing formula also applies in a strict liability analysis of defect. Indeed, one writer has asserted that the manufacturer, in deciding upon a design, should employ an economic analysis parallel to the factfinder's balancing analysis described by Learned Hand, so that, "under strict liability the manufacturer must attempt to quantify and balance those factors that Judge Hand thought best left to a jury"[145] in a negligence action.

Section 402A of the *Restatement* and cases decided under warranty and strict liability theories suggest two additional approaches which may be utilized to ascertain whether the design is in fact defective. In the first approach, the inquiry focuses on whether the safeness of the product conforms to the reasonable expectations of the ordinary consumer.[146] A comment to section 402A of the *Restatement* states that liability attaches only when the product is in a condition not contemplated by the ultimate

142. W. PROSSER, *supra* note 12, § 31, at 145–46.

143. 359 F.2d at 824. The plaintiff in *Evans* was prepared to prove at trial that, since 1961, the defendant had improved the design of many of its models, by making them with side rails, to give the added protection inherent in perimeter frame vehicles. *Id.*

144. United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947).

145. Holford, *supra* note 17, at 87 n.21 (citations omitted).

146. For an excellent case defining "defect" in terms of consumer expectations, *see* Dunham v. Vaughan & Bushnell Mfg. Co., 42 Ill. 2d 339, 247 N.E.2d 401 (1969).

consumer, and which will be unreasonably dangerous to him.[147] This approach suggests that, even if the design might be defective under a balancing test because the risk might reasonably have been obviated, the design is not defective if the consumer contemplated or expected the condition. However, while defining a defect in terms of the consumer's expectations would seem appropriate in a contract action, it makes little sense in a tort action. As Dean Wade has insisted:

> In the absence of authorities on strict liability, early commentators resorted to cases based on warranty liability — whether expressed or implied. They thus used contract language. How good did the product have to be? What were the expectations of the parties? Are these actual expectations or reasonable ones? What might the manufacturer expect the consumer to expect? This is all warranty language. It essentially is a contract approach. It sounds as if the action is based on the ground that the buyer did not receive what he contracted for, so that he is entitled either to return it and get his money back or to keep it and sue for the difference between the value in its actual condition and the value it would have had if it had complied with his reasonable expectations. True, if the product caused injury, recovery might be had to compensate for it. But these are consequential damages, coming almost as an afterthought. Their availability may depend on the rules of *Hadley v. Baxendale,* rather than those of proximate cause in tort. Under the warranty approach, there is no available basis for liability other than that for purchasers who might have had "expectations" from the manufacturer or supplier.[148]

The second, rather satisfactory approach to ascertaining the meaning and existence of a design defect under a strict liability theory was set forth by a federal district court in *LaGorga v. Kroger Co.,*[149] where the plaintiff-child was critically burned when the jacket he was wearing was exposed to an open fire and exploded into flames. In analyzing the facts, the court reasoned that the jacket had been defective if the intended design

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147. RESTATEMENT (SECOND) OF TORTS § 402A, Comment *g* (1965).

148. Wade, *supra* note 5, at 833–34 (footnotes omitted). Dean Wade further argued that a major difficulty in defining a defect in terms of consumer expectations is that

> it is likely to limit the requirement of safety to what is customary within the trade, on the basis that this is what the customer has come to expect. But the law should be that what is normally done by manufacturers, and therefore expected, while it may be adequate, is still not the standard. The "state of the art" is not controlling.

Id. at 834 n.30 (citations omitted). Dean Keeton is also critical of defining "defect" in terms of consumer expectations. Keeton, *supra* note 107, at 8.

However, one author has contended that "defect" under strict liability is best defined in terms of the consumer's expectations. He reasoned that since it is the consumer's action, and since it is he or she who is being protected by the law, the consumer's reasonable expectatons should determine the standard to which the supplier is obligated to conform. Rheingold, *Expectations, supra* note 5, at 592–93. Yet even this author, at one point, appears to have subscribed to a negligence-type balancing test in order to ascertain "unreasonable dangerousness" or "defect." *Id.* at 595.

149. 275 F. Supp. 373 (W.D. Pa. 1967), *aff'd per curiam,* 407 F.2d 671 (3d Cir. 1969).

had made the product unreasonably dangerous or not reasonably safe; thus, an unreasonably dangerous product became synonymous with a defective condition.[150] The design had to be safe for ordinary foreseeable circumstances, which in this case was open fires.[151] But it should be noted that the unreasonable danger or defective condition was determined by application of the balancing analysis employed in negligence law: the issues were whether the jacket could have been made safe for wear by fireproofing and whether an alternate design was feasible, practical, inexpensive and effective.[152] Therefore, as a practical matter, this approach to strict liability differs little from that under a traditional negligence theory.[153]

Perhaps liability should not be based upon the concept of "defective design" but rather upon whether the product is safe in light of a number of factors.[154] If the product is deemed unsafe, knowledge of this dangerous condition is imputed to the manufacturer as a matter of law. The inquiry thus becomes whether, given this notice, the manufacturer was negligent in selling the product; *i.e.*, whether the magnitude of the risk created by

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150. *Id.* at 380.

151. *Id.* at 379.

152. *Id.* at 380–81. Indeed, the court remarked: "If the manufacturer could provide a safeguard which would make the jacket substantially safer for children to wear without prohibitive cost, marketing the product without such safeguard would seem unjustified." *Id.* at 381 n.17, *citing* Wade, *Strict Tort Liability of Manufacturers,* 19 Sw. L.J. 5, 17–18 & n.4 (1965).

153. Moreover, the *LaGorga* court rejected the argument that the product could not be defective if generic with other jackets of the same composition and design. 275 F. Supp. at 379. It has been suggested by some that a product cannot be defective under any theory of liability if the product matches the average quality of similar products, that is, is designed as is customary in the trade. *See* Dyson v. General Motors Corp., 298 F. Supp. 1064, 1073–74 (E.D. Pa. 1969); Traynor, *The Ways and Meanings of Defective Products and Strict Liability,* 32 TENN. L. REV. 363, 367 (1965). However, this mode of analysis is untenable and has been rejected by courts in negligence actions (*see* note 123 *supra*), strict liability actions, as in *LaGorga* and Turner v. General Motors Corp., 514 S.W.2d 497 (Tex. Civ. App. 1974), and by the commentators, *e.g.*, W. PROSSER, *supra* note 12, § 33, at 166–67; Morris, *supra* note 123; Nader & Page, *supra* note 17, at 650.

154. Dean Wade has suggested seven factors which might be relevant in ascertaining whether the product is duly safe:

> (1) The usefulness and desirability of the product — its utility to the user and to the public as a whole.
> (2) The safety aspects of the product — the likelihood that it will cause injury, and the probable seriousness of the injury.
> (3) The availability of a substitute product which would meet the same need and not be as unsafe.
> (4) The manufacturer's ability to eliminate the unsafe character of the product without impairing its usefulness or making it too expensive to maintain its utility.
> (5) The user's ability to avoid danger by the exercise of care in the use of the product.
> (6) The user's anticipated awareness of the dangers inherent in the product and their avoidability, because of general public knowledge of the obvious condition of the product, or of the existence of suitable warnings or instructions.
> (7) The feasibility, on the part of the manufacturer, of spreading the loss by setting the price of the product or carrying liability insurance.

Wade, *supra* note 5, at 837–38 (footnotes omitted).

the dangerous condition of the product was outweighed by the social utility attained by marketing the product in this condition.[155] Dean Wade insisted that this approach is not an abandonment of the strict liability concept.[156] Other commentators would limit the application of the term "defect" to miscarriages in the manufacturing process and replace the term "design defect" with "design deficiency," "design hazard", or "unsafe design."[157] These alternatives constitute improvements over the negligence and strict liability analyses of design defect crudely developed in the *Evans* and *Larsen* lines of cases. Ultimately however, any concept of design defect resolves itself into the facially simple inquiry of whether the design was reasonable under the circumstances of its use.

B. *The Patent-Latent Defect Rule: The* Campo *Syndrome*

A discussion of the meaning of defect in automobile design cases cannot be concluded without mention of the patent-latent defect or patent-latent danger rule[158] developed in *Campo v. Scofield*[159] and adopted in a "sub-line" of cases following *Larsen*.[160] The rule of *Campo* is that the

155. *Id.* at 834–35. Professor Keeton also proposed a risk-benefit analysis in passing upon designs:

> A product is defective if it is unreasonably dangerous as marketed. It is unreasonably dangerous if a reasonable person would conclude that the magnitude of the scientifically perceivable danger *as it proved to be at the time of trial* outweighed the benefits of the way the product was so designed and marketed.

Keeton, *Product Liability and the Meaning of Defect*, 5 ST. MARY'S L.J. 30, 37–38 (1973) (footnotes omitted) (emphasis in original). *Compare* Calabresi & Hirschoff, *Toward a Test For Strict Liability in Torts*, 81 YALE L.J. 1055 (1972), where the authors suggested an alternative test for liability that does not require the court to employ a cost-benefit analysis; rather, the court decides, as between the parties to the accident, which one is in the best position to make the cost-benefit analysis between accident costs and accident avoidance costs and to act on that decision once it is made.

156. Wade, *supra* note 5, at 135.

157. Nader & Page, *supra* note 17, at 650 & n.38, where the authors remarked that the normal definition of "defect" must be strained to include mistakes on the drawing board.

158. One writer distinguished between patent-latent defect and patent-latent danger, suggesting that, in design cases, the latter terminology was more appropriate. Note, *supra* note 13, at 447 n.24. However, the terms are often used interchangeably by the courts. *See, e.g.*, Luque v. McLean, 8 Cal. 3d 136, 144, 501 P.2d 1163, 1169, 104 Cal. Rptr. 443, 448–49 (1972).

159. 301 N.Y. 468, 95 N.E.2d 802 (1950).

160. Volkswagen of America, Inc. v. Young, 272 Md. 201, 321 A.2d 737 (1974); Bolm v. Triumph Corp., 33 N.Y.2d 151, 305 N.E.2d 769, 350 N.Y.S.2d 644 (1973); *see* text accompanying note 107 *supra* (the position of Turcotte v. Ford Motor Co., 494 F.2d 173 (1st Cir. 1974) in this "sub-line"). Moreover, while Burkhard v. Short, 28 Ohio App. 2d 141, 275 N.E.2d 632 (1971) is frequently cited as a decision adopting *Evans*, or a case of assumption of risk, it in fact is neither, but actually belongs to the *Bolm-Young* sub-line. The *Burkhard* court said that "[u]nder some conceivable circumstances a manufacturer could be held liable for injury suffered by a passenger as a result of defective design, even though the defective design was not the proximate cause of, or related to, the cause of the collision." *Id.* at 148, 275 N.E.2d at 637. But the allegedly unsafe design feature (unpadded dashboard) was plainly visible, entirely obvious, and together with the fact that the unpadded dashboard was a typical feature on all automobiles, the design could not be considered unreasonably dangerous within the terms of section 402A of the *Restatement*.

manufacturer is not liable for injury caused by a dangerous condition of the product if that condition is obvious to the user.[161] The rationale appears to be that such patently dangerous conditions either do not present unreasonable risks to the user, so that the manufacturer did not breach his duty of care, or that the user, aware of the patent danger, must have assumed the attendant risks, or that a patently dangerous condition cannot be unreasonably dangerous and defective within strict liability. While the *Campo* rule retains vitality in a number of jurisdictions,[162] it is unacceptable because "its use diverts attention from the fundamental question of tort law; the reasonableness of the risk of harm to which the manufacturer subjects those who use his product."[163] Furthermore, the rule is unsatisfactory because it "emphasizes the actions of the consumer, rather than the negligence of the manufacturer. It is, after all, the manufacturer, not the consumer, who is held to a standard of expertise. It seems reasonable for a consumer to depend upon the adequacy of the design of the product he is using."[164] The fact that a dangerous design is apparent should not give the courts pause in ascertaining whether there is an actionable design defect. Rather, it should be left to the manufacturer to demonstrate as an affirmative defense that the plaintiff voluntarily assumed the risks of harm apparent in the design,[165] or, where contributory negligence is alleged, that the plaintiff was negligent in failing to discover or foresee the danger.[166] Thus, to the extent that *Bolm* and *Young* graft the *Campo* rule upon *Larsen*,[167] these cases represent a retreat from the consumer-oriented principles of the *Larsen* opinion.

VI. *Evans* AND ITS PROGENY: JUDICIAL NONSENSE

Having recounted the various theories of manufacturer liability, and the difficulties involved in giving content to the term "design defect" in

161. 301 N.Y. at 471–73, 95 N.E.2d at 803–04.

162. *See* cases cited in W. PROSSER, *supra* note 12, § 96, at 649.

163. Katz, *Negligence in Design: A Current Look*, 1965 INS. L.J. 5, 8 [hereinafter cited as Katz, *Negligence*]. *See* Goldsmith v. Martin Marietta Corp., 211 F. Supp. 91, 97–98 (D. Md. 1962) (even obvious dangers that are fully appreciated may be unreasonable); Luque v. McLean, 8 Cal. 3d 136, 501 P.2d 1163, 104 Cal. Rptr. 443 (1972); Pike v. Frank G. Hough Co., 2 Cal. 3d 465, 467 P.2d 229, 85 Cal. Rptr. 629 (1970); Wright v. Massey-Harris, Inc., 68 Ill. App. 2d 70, 215 N.E.2d 465 (1966). *See also* Nader & Page, *supra* note 17, at 656 ("The controlling issue in these cases should be whether or not the risk was unreasonable, not whether it was latent or patent").

164. Katz, *Negligence, supra* note 163, at 9.

165. However, as to the consumer's assumption of the risks involved in a car's design, one commentator has written:

> While there is unquestionably some element of risk involved in any form of automobile transportation, it does not follow that the consumer has assumed the risk of those dangers which are not inherent in the situation, but which are the direct result of faulty design on the part of the manufacturer. *The consumer has never appreciated the relationship between car design and injury potential,* and cannot be taken to assume any risk of conditions of which he is ignorant.

Katz, *Liability, supra* note 14, at 872 (footnotes omitted) (emphasis added).

166. *See generally* Noel, *supra* note 107.

167. *See* note 160 *supra.*

terms of negligence and strict liability, it remains to expose the weaknesses of the *Evans* line of cases. These opinions almost uniformly proceed by overstating the plaintiff's case in order to refute it. In fact, the injured consumers in these cases were not asserting that the manufacturer was an insurer, or that the manufacturer had a duty to produce a crashproof, accident-proof, foolproof or fireproof car. Rather, the plaintiffs simply urged that they had sustained unnecessary injuries due to the manufacturer's failure to eliminate unreasonable risks of harm to the car's occupants upon collision, a recognizable, appreciable and foreseeable risk. Thus, the unreasonable risks inherent in the product's design made the product unreasonably dangerous and therefore defective.

When one recognizes the calculated overstatement of the plaintiff's case in the *Evans* decisions, it is not difficult to recognize another flaw in these opinions — namely, the simplistic reasoning that the manufacturer's duty of safe design does not extend to the collision situation since the product's intended use does not include accidents. Both the *Larsen* cases and many of the commentators reject this narrow concept of intended use and properly require manufacturers to anticipate the environment of the product's use and the foreseeable uses, and indeed, misuses, of the product.

Some of the *Evans* decisions[168] bemoan the fact that a court could not oversee the automobile industry; they complain that to grant the plaintiff relief would result in a different set of design standards for each of the fifty states. However, the plaintiffs did not request the court to grant injunctive relief or to impose a judicially formulated set of designs on the manufacturer but only sought legal damages. To find the manufacturer liable for a product design which caused injury is not to impose a judicially created set of safety standards on the automobile industry. It has been observed that in traditional negligence actions it is for the factfinder to determine whether the defendant acted reasonably; a finding of negligence

> implies that there was some concrete thing that he could have done or omitted to do, and that such act or such omitted precaution was reasonable and feasible and would have been effective to prevent injury under the circumstances. . . . In this sense the jury need not fix or agree upon a standard of conduct of precautions to be taken, but need only find that the conduct of the party falls short of *any* standard which they would agree upon as reasonable. The jury's finding of negligence is thus always that the actor *should not* have acted as he did; this implies that he *should have acted otherwise, but not necessarily in any specific manner.*[169]

168. *See, e.g.*, Walton v. Chrysler Motor Corp., 229 So. 2d 568, 573 (Miss. 1969).

169. James & Sigerson, *supra* note 17, at 698–99 (footnotes omitted) (emphasis in original). The authors, however, went on to say that

> [i]t is true that plaintiff does not have the burden of showing what specific omitted precautions would have been reasonable and would have averted harm, and that neither court nor jury need necessarily fix upon any such precaution before a defendant may be held negligent. Yet if upon the whole case the court cannot see the possibility of *any* feasible and effective precaution which the actor

Conversely, it has been argued that the setting of specific standards is implicit in a court's attempt to apply general reasonableness standards in cases involving allegedly defective products, for when the standards have not been previously established by legislation, the courts must formulate their own standards, and such is not a proper judicial function when the manufacturer's conscious design choice is at issue.[170] Although this restrictive view of the judiciary lies at the heart of the *Evans* line of cases, it is not convincing. While Congress has facilitated the judicial process by imposing minimum uniform standards of design upon the automobile industry[171] so that manufacturer noncompliance is a statutory violation and may be negligence per se,[172] it also has recognized that the courts must supplement legislation and administrative regulations which do not adequately protect the public.[173] The continued importance of the courts in the area of automobile design has also been emphasized by the commentators.[174]

VII. CONCLUSION

Thus, it would seem that the benefits to be derived from judicial activity in the area of automobile design outweigh any difficulties inherent in such adjudication. Furthermore, the publicity generated by automobile

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> omitted . . . it will direct a verdict for the defendant. For that reason it is often advisable for plaintiffs to prove or to suggest in argument to the court one or more such precautions where there is danger that they will not be obvious.

Id. at 703 (footnotes omitted).

170. Henderson, *supra* note 17, at 1533–34; *see* note 17 *supra*.

171. *See* National Traffic and Motor Vehicle Safety Act, 15 U.S.C. § 1381 *et seq.* (1970).

172. *See* Morris, *The Role of Administrative Safety Measures in Negligence Actions*, 28 TEXAS L. REV. 143 (1949); Comment, *Products Liability Based Upon the Violation of Statutory Standards*, 64 MICH. L. REV. 1388 (1966).

173. *See* 15 U.S.C. § 1397(c) (1970). For further evidence of the obvious legislative intent that the courts continue to play an active role in automobile design suits, *see* H.R. REP. No. 1776, 89th Cong., 2d Sess. 24 (1966); S. REP. No. 1301, 89th Cong., 2d Sess. 12 (1966).

174. In insisting that a court is as well-equipped as an administrative agency to weigh competing interests in ascertaining manufacturers' liability for product designs, some commentators have contended:

> While there is much to be said for consistency and uniformity, achieving these ends by making the agency [the National Highway Traffic Safety Administration, which administers the National Traffic and Motor Vehicle Safety Act, 15 U.S.C. § 1381 *et seq.* (1970)] the sole and ultimate arbiter of design standards ignores the political aspect of design decisions. When the standard-setting function is centralized exclusively in a single agency, that agency becomes the sole target for outside pressures. There is only one battle to be won. The considerable power of the automobile industry, brought to bear on the agency, will inevitably affect the standard-setting process. Therefore, a decentralization of the decision-making function allows the creation of contervailing [sic] pressures which can support or prod the agency. This is perhaps what Congress intended to be the thrust of section 108(c) [15 U.S.C. § 1397(c)].

Nader & Page, *supra* note 17, at 676. Indeed, it has been suggested outright that the Department of Transportation is the captive of the automobile industry. Comment, *supra* note 17, at 305–06. Moreover, because any standards promulgated by the agency are not retroactively applied, the courts continue to play a vital role in the area of automobile design liability. *Id.*

design suits stimulates public awareness.[175] Finally, because the damage suit is, historically, the great persuader of the socially irresponsible,[176] it may be the most effective method of insuring that automobile manufacturers respond to the public need for safer automobiles.

Larsen and the cases which adopt its reasoning have been criticized by courts and commentators who interpret the cases as defining the manufacturer's duty only in terms of foreseeability of injury.[177] However, the rule of *Larsen* "is not grounded upon foreseeability, but upon the *unreasonable* risk of injury in the event of a collision."[178] If Professor Seavey is correct in his view of the importance of *MacPherson* in focusing attention upon the risk of harm and not upon the way in which the harm occurred or the number of acts intervening between the defendant's conduct and the harmful event,[179] then the *Larsen* cases are not, in the final analysis, such a remarkable development in the law spanning the half-century from *MacPherson* to the present.

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175. Nader & Page, *supra* note 17, at 673.

176. Katz, *Negligence, supra* note 163, at 12.

177. *See, e.g.,* Frericks v. General Motors Corp., 20 Md. App. 518, 530, 317 A.2d 494, 501 (1974), *vacated,* 274 Md. 288, 336 A.2d 118 (1975); Hoenig & Werber, *supra* note 49, at 588.

178. Turner v. General Motors Corp., 514 S.W.2d 497, 503 (Tex. Civ. App. 1974). One writer observed that, while *Larsen's* reasoning has been criticized by Hoenig & Werber, among others, nevertheless, "foreseeability of risk has long been recognized as a basic test for defining the scope of duty in negligence law." 49 TUL. L. REV. 250, 253 n.17 (1974) (citations omitted); *Cf.* Green, *Foreseeability in Negligence Law,* 6 COLUM. L. REV. 1401, 1417–19 (1961).

179. *See* note 13 *supra.*