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SELLER'S LIABILITY FOR DEFECTIVE DESIGN—THE MEASURE OF RESPONSIBILITY

Courts have recognized the individual's right to be free of injuries caused by defective products[1] and have developed the doctrine of strict products liability to hold the product seller to a higher degree of liability than he faced under negligence theory.[2] Liability in negligence for product-caused injuries is based on breach of the duty of a reasonable, prudent seller to exercise due care on behalf of a person to whom the duty is owed.[3] In strict products liability, the plaintiff need not prove negligent conduct amounting to a breach of due care by the seller, but need only prove that the product was defective.[4] Yet courts stop short of imposing unlimited liability upon the product seller.[5] The seller's liability and the

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[1] *See* 1 R. HURSH & H. BAILEY, AMERICAN LAW OF PRODUCTS LIABILITY (SECOND) § 1:5 (2d ed. 1971) [hereinafter cited as HURSH & BAILEY]; Wade, *A Conspectus of Manufacturers' Liability for Products*, 10 IND. L. REV. 755, 756-58 (1977) [hereinafter cited as Wade, *Conspectus*]. The term "products liability" describes the liability incurred after injuries caused by defective products. Injuries and losses caused by a condition on the premises, or by the rendering of a service are not proper subjects for a products liability claim. W. KIMBLE & R. LESHER, PRODUCTS LIABILITY § 1 (1979) [hereinafter cited as KIMBLE & LESHER].

[2] Strict products liability has eliminated the requirement of proof of negligence in order to effectuate a social policy of consumer protection. *See* KIMBLE & LESHER, *supra* note 1, § 2; note 6 *infra*.

[3] HURSH & BAILEY, *supra* note 1, § 2:2. In negligence the manufacturer's duty of due care extends to the design, manufacture, construction, and packaging of the product, as well as to the preparation of adequate instructions. KIMBLE & LESHER, *supra* note 1, § 12. The manufacturer's duty also extends to the inspection and testing of the product. *Id.; see generally* Abell, *The Manufacturer's Duty to Test And Inspect*, in PRODUCT LIABILITY: LAW, PRACTICE, SCIENCE 247 (P. Rheingold & S. Birnbaum eds. 1975). A nonmanufacturing seller such as a retailer or wholesaler is not liable in negligence for the manufacturer's breaches of duty, but he may be liable for a breach of his own duty where he has one. HURSH & BAILEY, *supra* note 1, §§ 2:10 & 2:11.

[4] Greenman v. Yuba Power Prods., Inc., 59 Cal. 2d 57, __, 377 P.2d 897, 900, 27 Cal. Rptr. 697, 700 (1963); RESTATEMENT, (SECOND) OF TORTS § 402A, Comment g (1965) [hereinafter cited as RESTATEMENT 402A]; Wade, *On the Nature of Strict Tort Liability for Products*, 44 MISS. L.J. 825, 825, 829 (1972) [hereinafter cited as Wade, *Nature*]. One commentator has advocated that strict products liability should not be based on defectiveness, but upon causation. He asserts that if a product is a substantial cause of an injury, courts should impose liability on the seller of the product. Comment, *A California Perspective on Strict Products Liability*, 9 PAC. L.J. 775, 793, 797 (1978). Courts, however, have disagreed. *See* note 5 *infra*.

[5] Unlimited liability, often termed absolute liability, subjects the seller to liability any time one of his products is involved in an accident. For example, Ford Motor Company would be liable for every accident in which a Ford was involved. Wade, *Conspectus, supra* note 1, at 768; Wade, *Nature, supra* note 4, at 828. Strict liability for products is not unlimited liability. *E.g.*, Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 879 (Alas. 1979); Center Chem. Co. v. Parzini, 234 Ga. 868, 869, 218 S.E.2d 580, 582 (1975); Hunt v. Blasius, 74 Ill. 2d 203, __, 384 N.E.2d 368, 372 (1978); Jones v. Hutchinson Mfg., Inc., 502 S.W.2d 66, 70 (Ky. 1973); Azzarello v. Black Bros., 480 Pa. 547, __, 391 A.2d 1020, 1024 (1978);

plaintiff's right to compensation are contingent upon the existence of a defect in the product.[6] The extent of the seller's liability and the plaintiff's right to compensation depend upon the definition of defect utilized in a particular jurisdiction.[7]

The existence of a manufacturing defect usually is obvious and poses few analytical difficulties for the courts,[8] because manufacturing defects result from physical flaws in the product and generally become apparent upon comparison with unflawed units of the same manufacture.[9] No such objective standard of comparison exists for design defects, however, because they do not result from faulty construction, but can only be ascribed to the designer's faulty judgment.[10] To determine if a product is

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Morningstar v. Black & Decker Mfg. Co., 253 S.E.2d 666, 680 (W. Va. 1979); Dippel v. Sciano, 37 Wis. 2d 443, ___, 155 N.W.2d 55, 63 (1967). Courts have also held that negligence and breach of warranty do not subject the product seller to unlimited liability. *E.g.*, Garst v. General Motors Corp., 207 Kan. 2, ___, 484 P.2d 47, 61 (1971); Jones v. Hutchinson Mfg., Inc., 502 S.W.2d 66, 70 (Ky. 1973); Fisher v. Johnson Milk Co., 383 Mich. 158, 160, 174 N.W.2d 752, 754 (1970); Stevens v. Durbin-Durco, Inc., 377 S.W.2d 343, 346-47 (Mo. 1964); Turner v. Manning, Maxwell & Moore, Inc., 216 Va. 245, 251, 217 S.W.2d 863, 868 (1975).

[6] RESTATEMENT 402A, *supra* note 4; HURSH & BAILEY, *supra* note 1, § 4:11 at nn. 45 & 46. Section 402A reads as follows:

> (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
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> (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
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> (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.

[7] *See* Traynor, *The Ways And Meanings of Defective Products and Strict Liability*, 32 TENN. L. REV. 363, 366 (1965) [hereinafter cited as Traynor]. Courts have utilized a number of tests to determine defectiveness, including deviation from the norm, unfitness for intended purpose, the test of RESTATEMENT 402A, *supra* note 4, and tests based on the balancing of the risks of a product against its utility. *See* Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 880-83 (Alas. 1979). *See also* text accompanying notes 19-33 *infra*.

[8] *See* Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 880 (Alas. 1979); Henderson, *Judicial Review of Manufacturer's Conscious Design Choices: The Limits of Adjudication*, 73 COLUM. L. REV. 1531, 1542-44 (1973) [hereinafter cited as Henderson]; Hoenig, *Products Designs and Strict Tort Liability: Is There a Better Approach?*, 8 SW. U.L. REV. 108, 118 (1976) [hereinafter cited as Hoenig]. An example of a manufacturing defect is where an aluminum hasp securing bread trays in a delivery truck snaps because the metal is too porous. Cronin v. J.B.E. Olson Corp., 8 Cal. 3d 121, 501 P.2d 1153, 104 Cal. Rptr. 433 (1972). The natural application of the term "defect" is to a situation where a mistake has occurred in the process of manufacture, so that the product is not as intended by the manufacturer. Wade, *Nature*, *supra* note 4, at 831-32.

[9] Henderson, *supra* note 8, at 1543. The relative ease with which courts are able to identify manufacturing defects is due to the fact that the manufacturer's intended design provides a "ready-made standard" with which to compare the allegedly defective product. *Id.* at 1544.

[10] Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 880 (Alas. 1979); Cronin v. J.B.E. Olson Corp., 8 Cal. 3d 121, 134, 501 P.2d 1153, 1162, 104 Cal. Rptr. 433, 442 (1972); Barker v.

defectively designed, a court must substitute its own judgment for that of the designer by establishing standards against which the design can be evaluated.[11]

The most significant policy guiding the formulation of standards for product design is the policy of risk-spreading.[12] According to risk-spreading theory, the seller is better able to bear the economic costs of the harm caused by his products than the injured consumer or user, because the seller can spread the cost of the harm by including it in the price of his products, or by purchasing liability insurance.[13] Risk-spreading provides

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Lull Eng'r Co., 20 Cal. 3d 413, 417-18, 573 P.2d 443, 446, 143 Cal. Rptr. 225, 228 (1978); Hoenig, *supra* note 8, at 121. An example of defective product design is an earth-moving machine with a blind spot caused by a large engine box, and no rear view mirror to enable the operator to avoid persons standing in the blind spot. Pike v. Frank G. Hough Co., 2 Cal. 3d 465, 467 P.2d 229, 85 Cal. Rptr. 629 (1970); *see also* West v. Caterpillar Tractor Co., 336 So. 2d 80 (Fla. 1976). The lack of a safety device, such as a rear view mirror, is discussed in Black, *Optional Safety Devices: How Strict The Liability?*, 8 N.M.L. REV. 191 (1979). Black's basic conclusion is that multipurpose machinery is not defective simply because the different safety devices necessary for each use of the machine are offered as options. *Id.* at 209. Therefore, only those safety devices common to all or most of the machine's uses must be included as standard features. *Id.* at 194; *see also* Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 891-92 (1978). Design defects are not limited to a lack of safety devices, but may include any feature of the product that can cause injury, such as a starting lever placed in a location where it may be brushed against inadvertantly, Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150, 406 A.2d 140 (1979), or a gearshift knob manufactured from a type of plastic that cracks upon exposure to sunlight. Mickle v. Blackmon, 252 S.C. 202, 166 S.E.2d 173 (1969).

[11] Henderson, *supra* note 8, at 1533; Hoenig, *supra* note 8, at 121. Henderson subdivides design defects into two categories: inadvertant design errors and conscious design choices. Inadvertant design errors resemble manufacturing defects, because they are unintended and usually cause the product to fail. Conscious design choices are intended, normally do not interfere with the product's function, and are usually obvious to the user. Henderson, *supra* note 8, at 1547-50. Henderson asserts that inadvertant design errors and manufacturing defects are appropriate subjects for judicial evaluation because the manufacturer's intended design operates as a readily available objective standard. He argues that conscious design choices cannot be evaluated by objective standards, but present 'polycentric' issues that courts as institutions are ill-equipped to handle. *Id.* at 1550-53.

[12] *See* Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 877 (Alas. 1979); West v. Caterpillar Tractor Co., 336 So. 2d 80, 92 (Fla. 1976); Keeton, *Product Liability and the Meaning of Defect*, 5 ST. MARY'S L.J. 30, 35 (1973) [hereinafter cited as Keeton]. The policies and considerations that have influenced the development of strict liability for products have included allocation of the cost of injuries to suppliers of products, consumer protection, and providing incentives to manufacturers to produce safer products. *See generally* Caterpillar Tractor Co. v. Beck, 593 P.2d at 877; Azzarello v. Black Bros., 480 Pa. 547, ___, 391 A.2d 1020, 1023-24 (1978); Smith v. Smith, ___ S.D. ___, ___, 278 N.W.2d 155, 160 (1979); Keeton, *supra*, at 34-35.

[13] *See* note 12 *supra*. The assumption that the manufacturer is able to include the costs of product liability awards in his product pricing has been criticized. *E.g.*, Plant, *Strict Liability of Manufacturers for Injuries Caused By Defects in Products—An Opposing View*, 24 TENN. L. REV. 938, 945-48 (1957); Hoenig, *supra* note 8, at 129-31. *But see* Escola v. Coca-Cola Bottling Co., 24 Cal. 2d 453, 462, 150 P.2d 436, 440-41 (1944) (Traynor, J., concurring); O'Connell, *Elective No-Fault Protection For Product and Other Accidents*, The Society of Chartered Property & Casualty Underwriters, Products Liability Monograph at 19 (April 1976) [hereinafter cited as O'Connell] (quoting statistics showing products liability compen-

consumer protection both by compensating the injured and by giving economic incentive to manufacturers to develop safer products.[14] Taken to its logical extreme, risk-spreading would impose liability on the seller for all injuries caused by his products without regard to defectiveness or reasonable care in manufacturing the products.[15] Courts have rejected such unlimited liability,[16] but because courts must substitute their own judgment for that of the designer, they have found it difficult to avoid analyzing defective designs in negligence terms[17] which focus on the manufacturer's conduct of the design process.[18] The courts have concluded that a definition of defective design appropriate to strict products liability should be based on the policy of risk-spreading, should impose a higher degree of liability than negligence, but should not impose unlimited liability.

One definition of defective design is based on a consumer expectation test.[19] If the product fails to perform as the reasonable consumer would expect, the product is defective.[20] A product will not satisfy the consumer's reasonable expectations if it creates a danger that it is meant to prevent or remedy,[21] or if it fails to perform its intended function.[22] A

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sation of only a few percent of actual medical costs).

Hoenig emphasizes that insurance coverage for claims based on design defects is either too expensive or unavailable for most manufacturers to carry. Hoenig, *supra* note 8, at 130. Products liability insurance is discussed generally in Henderson, *Insurance Protection for Products Liability and Completed Operations—What Every Lawyer Should Know,* 50 NEB. L. REV. 415 (1971).

[14] *See* note 12 *supra.* Enterprise liability is a concept closely related to risk-spreading and is predicated upon the judgment that the going business concern should bear the full costs of its activities, including the costs of product-caused harm. Enterprise liability has provided the basis for holding successor corporations responsible for the defective products of a predecessor corporation. *E.g.,* Turner v. Bituminous Cas. Co., 397 Mich. 406, 244 N.W.2d 873 (1976). *See generally* Comment, *Extension of Strict Tort Liability to Successor Corporations,* 61 MARQ. L. REV. 595 (1978).

[15] Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 889 (Alas. 1979); Henderson, *supra* note 8, at 1554; Hoenig, *supra* note 8, at 129-30.

[16] *See* note 5 *supra.*

[17] *See* W. PROSSER, HANDBOOK OF THE LAW OF TORTS § 99 at 659 n.72 (4th ed. 1971) [hereinafter cited as PROSSER]; Hoenig, *supra* note 8, at 121. When faced with the difficulty of distinguishing strict products liability from negligence liability for defective designs, some courts have held that all defective designs are to be determined by use of a negligence test. *E.g.,* Brady v. Melody Homes Mfr., 121 Ariz. 253, ___, 589 P.2d 896, 902 (Ariz. App. 1978).

[18] *See* text accompanying note 3 *supra.*

[19] *E.g.,* RESTATEMENT 402A, *supra* note 4, Comment i. Section 402A defines a defective product as one in a "defective condition unreasonably dangerous." *See* note 4 *supra.* Comment i gives content to this definition by formulating a test based upon the extent of danger that would be contemplated by the ordinary consumer "with the ordinary knowledge common to the community." The definition of § 402A has been criticized as creating two separate requirements; that the product be unreasonably dangerous and that it be defective. Cronin v. J.B.E. Olson Corp., 8 Cal. 3d 121, 133, 501 P.2d 1153, 1161-62, 104 Cal. Rptr. 433, 442 (1972). *But see* Wade, *Nature, supra* note 4, at 830-31 ('defective condition' and 'unreasonably dangerous' almost synonymous and meant to explain each other).

[20] Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150, 170-71, 406 A.2d 140, 150 (1979).

[21] An example of a situation where a product causes a harm that it was designed to

product also fails to meet the consumer's reasonable expectations if it has unanticipated, adverse side effects,[23] or if it does not minimize injuries that would ordinarily occur in accidents involving the product.[24]

The consumer expectation test has been criticized because it does not provide adequate guidance to the trier of fact when the product is so complex that an ordinary consumer would not know what to expect[25] and because the manufacturer may not be held liable for an injury he could easily prevent, simply because the danger is obvious to the consumer.[26] Because of these criticisms of the consumer expectation test, some courts adopt a risk-utility test which balances the risks posed by the product design against the benefits or utility of the design.[27] The considerations involved in balancing risks against utility[28] include the usefulness of and

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prevent occurs when administration of a polio vaccine causes polio. Gottsdanker v. Cutler Laboratories, 182 Cal. App. 2d 602, 6 Cal. Rptr. 320 (Dist. Ct. App. 1960); Dickerson, *The ABC's of Products Liability—With a Close Look at Section 402A and the Code,* 36 TENN. L. REV. 439, 454 (1969) [hereinafter cited as Dickerson].

[22] Brakes that fail are an example of a product that fails to perform its intended function. Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150, 171, 406 A.2d 140, 150 (1979); Dickerson, *supra* note 21, at 454.

[23] An example of an unanticipated side effect is when emphysema is caused by cigarette smoking, Dickerson, *supra* note 21, at 454, or when a drug designed for treatment of arteriosclerosis causes cataracts. Toole v. Richardson-Merrell, Inc., 251 Cal. App. 2d 689, 60 Cal. Rptr. 398 (1967).

[24] Cases where injuries are not caused by the defect, but where the product could have minimized those injuries, are called 'enhanced injury' or 'second collision' cases. The typical enhanced injury case involves an automobile accident in which the injuries were exacerbated by some feature of the car, such as an unpadded dashboard. *See generally* Note, *Products Liability—The "Enhanced Injury Case" Revisited,* 8 FORUM 643 (1973).

[25] Keeton, *supra* note 12, at 37; Wade, *Nature, supra* note 4, at 833-34.

[26] Where an above-ground swimming pool is designed without a gate that would prevent children from entering it, the pool may meet ordinary consumer expectations, both because the danger is obvious and because children are not ordinary consumers. The pool manufacturer would thus escape liability, even though a gate would be a simple, inexpensive, and effective method to prevent children from drowning. *See* Vincer v. Esther Williams All-Aluminum Swimming Pool Co., 69 Wis. 2d 326, 230 N.W.2d 794 (1975); A. WEINSTEIN, A. TWERSKI, H. PIEHLER & W. DONAHER, PRODUCTS LIABILITY AND THE REASONABLY SAFE PRODUCT § 4.3 (1978) [hereinafter cited as TWERSKI].

[27] *E.g.,* Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 886 (Alas. 1979); Barker v. Lull Eng'r Co., 20 Cal. 3d 413, 435, 573 P.2d 443, 457-58, 143 Cal. Rptr. 225, 239-40 (1978); Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150, 170, 406 A.2d 140, 150 (1979). Risk-utility balancing has been applied in areas other than the products liability field. For example, an Oregon court formulated a test based on gravity of harm weighed against utility to determine whether the noise from a nearby airport amounts to such a nuisance as to constitute a taking of the plaintiff's land for which he must be compensated. Thornburg v. Port of Portland, 233 Ore. 178, __, 376 P.2d 100, 107 (1962).

[28] *See generally* Barker v. Lull Eng'r Co., 20 Cal. 3d 413, 431, 573 P.2d 443, 455, 143 Cal. Rptr. 225, 237 (1978); Morningstar v. Black & Decker Mfg. Co., 253 S.E.2d 666, 681 n.20 (W. Va. 1978); Wade, *Nature, supra* note 4, at 837-38. An example of a risk-utility balancing may involve a steam vaporizer which falls when a child trips over its electric cord. The child is badly burned when the lift-off cap falls from the overturned vaporizer, spilling hot water on the child. A vaporizer has obvious utility for those suffering from colds and the water must be hot for the vaporizer to function. However, such accidents are likely to occur since

the need for the product,[29] the economic and mechanical feasibility of a safer design,[30] the product's propensity for causing harm,[31] the gravity of the injuries caused by the product,[32] and the user's ability to avoid injury by proper use of the product.[33]

One of the risk-utility considerations, the economic and mechanical feasibility of a safer design, evaluates product defectiveness by determining if a safer, alternative product could have been designed.[34] The plaintiff must prove that the safer design was both economically practical and technologically possible.[35] Evidence of state of the art is generally admissable on the issue of feasibility of a safer design.[36] State of the art

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vaporizers are commonly used in dark bedrooms. The burns produced by such accidents can be quite severe. Such an accident could be avoided easily and economically by using a screw-on cap instead of a lift-off cap. Since the accident is so likely, so severe, and so easily preventable, the manufacturer is liable for the vaporizer's defective design. *See* TWERSKI, *supra* note 26, § 3.5 (discussing McCormack v. Hankscraft Co., 278 Minn. 322, 154 N.W.2d 488 (1967)).

[29] The usefulness of and need for a product involves a subjective evaluation by the court or trier of fact. Glass doors have great social utility because they give apartment dwellers a feeling of spaciousness and closeness to nature, in spite of the danger that someone will attempt to walk through the clear glass while the door is closed. Metal Window Prods. Co. v. Magnusen, 485 S.W.2d 355, 358 (Tex. Civ. App. 1972). Drugs such as penicillin and cortisone have great utility and social value, in spite of possible adverse side effects. PROSSER, *supra* note 17, § 99 at 661.

[30] *See* text accompanying notes 34-41 *infra.*

[31] *See* text accompanying notes 42-44 *infra.*

[32] The gravity or seriousness of the injuries caused by a product is a consideration that may be redundant, since few plaintiffs will bring a case unless they have been injured seriously enough to find the bother and expense of litigation worthwhile. *See* O'Connell, *supra* note 13, at 19-20. O'Connell cites statistical evidence to show that very few injuries to consumers are ever compensated because of the barriers imposed by litigation. *Id.*

[33] *See* text accompanying notes 45-51 *infra.*

[34] Barker v. Lull Eng'r Co., 20 Cal. 3d 413, 431, 573 P.2d 443, 455, 143 Cal. Rptr. 225, 237 (1978); Lamon v. McDonnell Douglas Corp., 91 Wash. 2d 345, 351, 588 P.2d 1346, 1350 (1979). In *Lamon,* the plaintiff fell through an emergency hatch located in the aisle of an airplane into the galley below. The hatch lid had to be removed to open the hatchway but a safer design existed which used a hinged hatch cover with a closing spring. Had the safer design been used, the plaintiff would not have fallen, since the hatch cover would have automatically closed itself. Therefore the hatchway was defective.

[35] In Auburn Mach. Wks. Co. v. Jones, 366 So. 2d 1167 (Fla. 1979) plaintiff's leg was amputated because he fell into the exposed chain of a trench digging machine. The court noted that, while the danger of the exposed chain was obvious, a guard over the chain would have eliminated the danger and that the $200-$500 cost of such a guard on an $8,000 machine was not unreasonable. *Id.* at 1170. The court also noted that the installation of a guard would not have impaired the machine's function. *Id.* Similarly in Kerns v. Engelke, 76 Ill. 2d 154, 390 N.E.2d 859 (1979) the court noted with approval evidence showing feasible alternative designs that were economical, practical, and effective. *Id.* at __, 390 N.E.2d at 864. In Olson v. Arctic Enterprises, Inc., 349 F. Supp. 761 (D.N.D. 1972) the court held that the plaintiff's alternative design was not feasible. The plaintiff suggested that had his snowmobile used rubber tracks instead of metal tracks, his injuries would have been prevented or reduced. The design was not feasible because at the time of the snowmobile's manufacture, the industry had not yet developed a type of rubber which could withstand cold and stress without being subject to premature failure. *Id.* at 765.

[36] KIMBLE & LESHER, *supra* note 1, § 228. *But see* Bailey v. Boatland of Houston, Inc.,

includes the issue of whether the product complies with industry customs and standards,[37] as well as government regulations.[38] Where industry custom or government regulations are non-existent or have lagged behind technological progress,[39] state of the art includes the issue of whether the product is as safe as the most advanced technology can make it.[40] Where the most advanced technology is the standard against which the product is evaluated, that technology must also be practical in terms of cost.[41]

The propensity of a product for causing harm is a risk-utility consideration that may involve a subjective evaluation of the likelihood that the product will cause harm[42] or may involve objective, statistical evidence

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585 S.W.2d 805 (Tex. Ct. App. 1979). The *Bailey* plaintiff alleged that a drowning accident could have been prevented had the boat been equipped with a kill switch that would shut off the engine automatically when the operator fell overboard. *Id.* at 807. Reasoning that the focus should be on the product and not on the thinking behind the manufacturer's adoption of the design, *id.* at 810, the court held that evidence of the state of the art which established that kill switches were commercially unavailable when the boat was manufactured, was not admissible in a strict products liability action. *Id.* at 807, 811. The issue presented by feasibility is not whether the manufacturer exercised care, as the court identified the issue, *id.* at 810, but whether this product is defective because another and safer design was feasible. In *Bailey* the alternative design may not have been feasible because it was not available. *Id.* at 808. Proof of the feasibility of a safer, alternative design should be based upon empirical evidence of the practicality of the alternative design, according to one commentator, who notes that courts often accept expert testimony based on untested hypothetical designs. O'Donnell, *Design Litigation and the State of the Art: Terminology, Practice and Reform*, 11 AKRON L. REV. 627, 659-61 (1978) [hereinafter cited as O'Donnell].

[37] Henderson, *supra* note 8, at 1556-57. Henderson describes industry custom as customary design choices made by the majority of manufacturers of a specific category of product. *Id.* He describes industry standards as industry custom which becomes codified into formal industry codes. *Id. See generally* Note, *Admissibility of Safety Codes, Rules and Standards in Negligence Cases*, 37 TENN. L. REV. 581 (1970). Henderson asserts that industry codes and standards are more susceptible to abuse and partiality than government standards and that, therefore, the wisdom of using industry standards in the judicial process is doubtful. Henderson, *supra* note 8, at 1556.

[38] Henderson, *supra* note 8, at 1555-56. Courts view government regulations as establishing minimum safety standards, thus a product may be defective even though it complies with government standards. *Id.* However, government regulations are persuasive authority on the issue of defectiveness. *Id.*; KIMBLE & LESHER, *supra* note 1, § 233(B).

[39] In The T.J. Hooper, 60 F.2d 737 (2d Cir.), *cert. denied sub nom.* Eastern Transp. Co. v. Northern Barge Corp., 287 U.S. 662 (1932), the court held that where radio sets were practical and would have warned a tugboat of an approaching storm and prevented the sinking of the barges it towed, the fact that almost no other tugboats had installed radio sets could not absolve the defendant of liability. *Id.* at 740. *The T.J. Hooper* has been accepted as authority for the proposition that the standards and customs of an industry are not conclusive evidence of due care or of non-defectiveness. *See* KIMBLE & LESHER, *supra* note 1, § 224; O'Donnell, *supra* note 36, at 649-51.

[40] KIMBLE & LESHER, *supra* note 1, § 224.

[41] *See* Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 883 (Alas. 1979); Wade, *Nature*, *supra* note 4, at 837.

[42] A subjective evaluation of the likelihood that a product will cause harm would be based on opinion testimony not supported by statistical evidence of accident frequency. *E.g.*, Lamon v. McDonnell Douglas Corp., 91 Wash. 2d 345, 348-49, 588 P.2d 1346, 1348-50 (1979). An engineer's affidavit stated that the design of a hatch cover in a DC-10 was dangerous because it was likely that the user would forget to replace the hatch cover, leaving an open

that the product does or does not often cause harm.[43] Evidence that a product is likely to or often does cause harm indicates that the product is defective because the product should have been designed to prevent the harm.[44]

Another consideration in the risk-utility analysis is the user's ability to avoid injury by proper use of the product.[45] If the plaintiff puts the product to an abnormal use, the seller is not liable for any injuries that result.[46] Abnormal use differs from contributory negligence, because the issue in the former is not the plaintiff's fault relative to that of the defendant, but whether the product is defective.[47] The manufacturer must design the product to withstand some degree of abuse,[48] but courts differ in their determination of when that abuse rises to the level of an abnormal use which the law will not require the product to withstand.[49] Courts generally apply one of two tests to determine whether the product has been abnormally used. The 'intended use' test would not find the product defective if the plaintiff has used the product in some way unintended by the manufacturer.[50] The 'foreseeable use' test recognizes that products are often used for purposes other than those intended by the manufacturer; therefore it requires the manufacturer to design a product that can withstand any use reasonably forseeable.[51]

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hole in the aisle of the aircraft into which a stewardess could fall. *Id.*

[43] Power lawnmowers are an example of a product for which a great deal of statistical information as to frequency of injuries is available. *See, e.g.*, 1 L. FRUMER & M. FRIEDMAN, PRODUCTS LIABILITY § 1 at n.3 (1979) (quoting statistics that 80,000 persons are injured annually by power mowers).

[44] Wade, *Nature, supra* note 4, at 837.

[45] *See generally* Noel, *Defective Products: Abnormal Use, Contributory Negligence, and Assumption of Risk*, 25 VAND. L. REV. 93 (1972) [hereinafter cited as Noel]. Noel states that abnormal use bars the plaintiff's recovery. *Id.* at 100. If the abnormal use is so abnormal as to establish that the product is not defective, it is true that the plaintiff's recovery will be barred, but the issue is one of degree. For example, some jurisdictions hold that a product may be defective if it is not designed to protect against foreseeable misuses, as where a woman stands on a chair. *Id.* at 96-97.

[46] Noel, *supra* note 45, at 95. An example of an abnormal use is where a bottle is knocked against a radiator to remove the lid. RESTATEMENT 402A, *supra* note 4, Comment h.

[47] Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150, 193, 406 A.2d 140, 162 (1979) (Clifford, J., concurring); Wade, *Nature, supra* note 4, at 846-47.

[48] *See* note 45, *supra.*

[49] Noel points out that the degree of misuse which a product must be designed to withstand should be determined by an objective standard imposed by law and not by a standard based on the actual knowledge of the particular manufacturer before the court. Noel, *supra* note 45, at 98-99.

[50] *See* Noel, *supra* note 45, at 97-98; Wade, *Nature, supra* note 4, at 847. An 'intended use' test permits the manufacturer to limit the scope of his liability. *Id.* The term 'intended use' could also mean those uses intended by the consumer, rather than the manufacturer. The term does not seem to be used often in the sense of the consumer's intent. *But see* Morningstar v. Black & Decker Mfg. Co., 253 S.W.2d 666, 682 (W. Va. 1979).

[51] Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 887 (Alas. 1979); Anderson v. Hyster Co., 74 Ill. 2d 364, ___, 385 N.E.2d 690, 693 (1979). It may be foreseeable that a power takeoff unit will be wired in place while the forage blower to which it is attached is being moved to a new location, because it is inconvenient to fully remove the power takeoff unit. It may even

Some recent design defect decisions have adopted risk-utility or both the risk-utility and consumer expectation tests. In *Suter v. San Angelo Foundry & Machine Co.*[52] the New Jersey Supreme Court approved a design defect definition based upon both the consumer expectation test[53] and the risk-utility analysis.[54] The plaintiff in *Suter* was a part owner and employee of a metal fabricating company.[55] His hand was crushed in the rollers of a machine manufactured by San Angelo Foundry when he reached inside the machine and his body brushed against the lever which started the rollers.[56] The *Suter* court held that New Jersey's comparative negligence statute[57] applied to strict products liability,[58] but that Suter was entitled to full compensation for his injuries[59] because, as a matter of law, an employee injured in an industrial setting is not guilty of comparative negligence.[60] In so holding, the court reasoned that the legislative in-

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be foreseeable that while the power takeoff is being unwired and reconnected, the wire will fly up into a workman's eye. *See* Kerns v. Engelke, 76 Ill. 2d 154, ___, 390 N.E.2d 859, 864-65 (1979).

[52] 81 N.J. 150, 406 A.2d 140 (1979).

[53] *See* text accompanying notes 19-24 *supra.*

[54] *See* text accompanying notes 27-33 *supra.*

[55] 81 N.J. at 154, 406 A.2d at 141. The plaintiff's company fabricated heating and air conditioning ducts. *Id.*

[56] 81 N.J. at 157, 406 A.2d at 143. The machine which crushed the plaintiff's hand was used to curve metal sheets into cylindrical shapes. The motor which drives the rollers was ordinarily left running. The rollers would turn only if the motor was running and a lever was thrown to engage them to the motor. It was this lever against which the plaintiff accidentally brushed. *Id.*

[57] Comparative Negligence Act, N.J. STAT. ANN. §§ 2A: 15-5.1 to 5.3 (West Cum. Supp. 1979).

[58] 81 N.J. at 164, 177, 406 A.2d at 147, 153. In strict products liability, comparative negligence is an affirmative defense based not upon the plaintiff's negligence, but upon his assumption of the risk. 81 N.J. at 193-99, 406 A.2d at 162-65 (Clifford J., concurring); *see* HURSH & BAILEY, *supra* note 1, § 4:36. The plaintiff's negligence will ordinarily be simple carelessness and such a lack of care on plaintiff's part will not bar or reduce his damages. *See* RESTATEMENT 402A, *supra* note 4, Comment n; HURSH & BAILEY, *supra* note 1, § 4:37. If the defendant can prove that the plaintiff unreasonably and voluntarily subjected himself to a known danger, then he has proved assumption of the risk, HURSH & BAILEY, *supra* note 1, § 4:36, and the plaintiff's recovery will be reduced by comparative negligence principles. 81 N.J. at 160, 164, 406 A.2d at 144, 157. Assumption of the risk can be described as a "considered choice to chance injury." 81 N.J. at 199, 406 A.2d at 165 (Clifford, J., concurring). In a jurisdiction which does not apply comparative negligence to strict products liability, proof of plaintiff's assumption of the risk will operate as a complete bar to recovery. *See* RESTATEMENT 402A, *supra* note 4, Comment n. Where comparative negligence is applied, plaintiff's assumption of the risk will only reduce the amount of his recovery. 81 N.J. at 163-64, 406 A.2d at 146-47.

[59] The trial jury found Suter to be 50% at fault and therefore the trial judge reduced his damages by half. 81 N.J. at 155, 405 A.2d at 142. The Appellate Division restored the full amount to Suter, *id.*, and the New Jersey Supreme Court affirmed. *Id.* at 177, 406 A.2d at 153.

[60] *Id.* at 168, 177, 406 A.2d at 149, 153. In holding as a matter of law that comparative negligence does not apply in an employee-industrial setting, the *Suter* court overruled a case it had decided just a year earlier, Cepeda v. Cumberland Eng'r Co., 76 N.J. 152, 386 A.2d 816 (1978). The *Cepeda* plaintiff lost four fingers when his hand became entangled in plastic

tent was to include strict products liability within the comparative negligence statute, but that the lack of meaningful choice available to an employee in an industrial plant justified an exception in the case of such an employee.[61]

The *Suter* court approved the consumer expectation test[62] as a definition of defect.[63] The court met the criticism that the consumer expectation test is ineffective when complicated products are being evaluated[64] by developing a risk-utility based test to supplement the consumer expectation test.[65]

The *Suter* risk-utility analysis defines abnormal uses[66] as those for which a manufacturer could not reasonably foresee his product being used.[67] The court held that the feasibility of a safer design[68] may be determined by balancing the state of the art, industry standards, and practical

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strips which were being fed into a cutting machine. The machine was being operated without its fingerguard and plaintiff alleged that the machine should have been equipped with an interlock switch to prevent the machine from running without the guard. The *Cepeda* court held that assumption of the risk could be a defense to a strict products liability claim, *see* note 58 *supra,* and remanded the case for a new trial to determine if the plaintiff had unreasonably and voluntarily encountered the known risk of operating the machine without a fingerguard. 76 N.J. at 190-91, 386 A.2d at 835-36. The *Suter* court overruled *Cepeda* on the ground that an employee in an industrial setting has no "meaningful choice," since he is under pressure to work rapidly or lose his job; and that therefore the actions of such an employee are never voluntary enough to constitute assumption of the risk. Suter v. San Angelo Foundry & Mach. Co., 81 N.J. at 167, 406 A.2d at 148. However, since voluntariness is an element of assumption of risk to be determined by the facts of the particular case, *see id.* at 197-99, 406 A.2d at 164-65 (Clifford, J., concurring), it is not appropriate to rule that an employee can never voluntarily assume the risk. The *Suter* majority failed to realize that the *Cepeda* ruling was wrong, not because as a matter of law employees cannot be negligent, but because factually the *Cepeda* employee's conduct was both inadvertant and involuntary. He inadvertantly caught his hand in the plastic strips and his hand was pulled into the machine involuntarily. In *Suter* the plaintiff's conduct was also inadvertant, since he brushed against the starting lever by accident. In both *Suter* and *Cepeda* the issue of assumption of the risk should never have gone to the jury because there was no evidence of voluntary conduct. Whether the *Cepeda* plaintiff won his case on remand was not known at the time of the *Suter* decision, since no disposition had yet been reached. Telephone interview with Mark D. Larner of Budd, Larner, Kent, Gross, Picillo & Rosenbaum, Cepeda's attorney, (Nov. 9, 1979).

[61] 81 N.J. at 168, 177, 406 A.2d at 149, 153.

[62] *See* text accompanying notes 19-24 *supra.*

[63] 81 N.J. at 170, 406 A.2d at 150.

[64] *See* note 25 *supra.*

[65] 81 N.J. at 170-71, 406 A.2d at 150-51. New Jersey is only one of several jurisdictions that employ a consumer-expectation test supplemented in the alternative by a risk-utility test. *E.g.,* Caterpillar Tractor Co. v. Beck, 593 P.2d 871 (Alas. 1979); Barker v. Lull Eng'r Co., 20 Cal. 3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978).

[66] *See* note 46 *supra* and text accompanying notes 45-51 *supra.*

[67] 81 N.J. at 177, 406 A.2d at 153. The *Suter* court held that a product should be safe for its "intended or foreseeable purposes", *id.,* but, since the manufacturer obviously foresees that his product may be used for the purpose for which he intends it to be used, the word "intended" is redundant.

[68] *See* text accompanying notes 34-41 *supra.*

technology available at the time of the product's sale.[69] The court also held that constructive knowledge of the product's propensity for causing harm[70] must be imputed to the seller,[71] whether or not the seller could have foreseen the likelihood that his product would cause harm.[72]

The *Suter* definition of design defect differs from negligence in two ways. If the plaintiff can prove that the product did not meet consumer expectations, then the product's defectiveness is established without any proof of actual negligent conduct on the manufacturer's part.[73] If the plaintiff cannot utilize the consumer expectation test, then he may use *Suter*'s alternative risk-utility test, which differs from a negligence test by not requiring that the propensity of the product for causing harm be foreseeable by the manufacturer.[74]

The majority in *Suter* was criticized for its reliance on warranty and negligence terminology in its formulation of a design defect definition.[75] The *Suter* court held that a strict products liability instruction could be given in the warranty terms of reasonable fitness, suitability, and safety.[76] In view of the court's definition of fitness and suitability as "terms largely synonymous with safety,"[77] however, the court's instruction means nothing more than that the product must be safe.[78] The *Suter* court also held that the jury could be instructed to determine whether a "reasonably prudent" manufacturer knowing of the product's propensity for causing harm, would market it in that condition.[79] Although the term reasonably prudent may be more apt in negligence, the *Suter* definition substantively

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[69] 81 N.J. at 170-71, 406 A.2d at 150-51.

[70] *See* text accompanying notes 42-44 *supra.*

[71] 81 N.J. at 170, 406 A.2d at 150; *see* Wade, *Nature, supra* note 4, at 835. Wade advocates that in strict products liability it should be assumed that the defendant knew of the "dangerous condition" of the product. *Id.* at 834-35. Apparently, the elements determining "dangerous condition" include the gravity of the injuries caused by the product, *see* note 32 *supra,* and the propensity of the product for causing harm. *See* Wade, *Nature, supra* note 4, at 837; KIMBLE & LESHER, *supra* note 1, § 54E.

[72] Where the manufacturer actually knows that his product is hazardous, but takes no steps to redesign the product, he may be liable for punitive damages. *E.g.,* Sturm, Ruger & Co. v. Day, 594 P.2d 38 (Alas. 1979).

[73] *See* text accompanying notes 19-24 *supra.*

[74] Note, *Products Liability—"Unreasonable Danger" Eliminated from the Theory of Strict Liability—The Restatement Restated,* 42 FORDHAM L. REV. 943, 952-53 (1974). In negligence the manufacturer is not liable for his product's harmful propensity unless he breaches his duty to foresee that harmful propensity. Where it was not reasonably possible for him to have foreseen such a harmful propensity, he has breached no duty. *Suter*'s definition of strict products liability assumes that the manufacturer did foresee his product's harmful propensity and thus assumes the element of proof that makes it difficult to prove negligence. *Id.*

[75] 81 N.J. at 178-92, 406 A.2d at 154-61 (Clifford, J., concurring).

[76] *Id.* at 177, 406 A.2d at 153.

[77] *Id.* at 169, 406 A.2d at 149.

[78] The *Suter* court was reluctant to reverse and remand the case when it could discern no substantive difference between the warranty language used by the trial court and language more appropriate to strict products liability. *Id.*

[79] *Id.* at 171, 177, 406 A.2d at 150.

differs from negligence because it imputes to the seller constructive knowledge of the dangerous condition of the product.[80] The *Suter* court's use of negligence and warranty language has little effect on the substantive law of strict products liability as adopted in *Suter*.

In *Caterpillar Tractor Co. v. Beck*[81] the Supreme Court of Alaska adopted a definition of design defect that was based on both the consumer expectation test and the risk-utility analysis,[82] as employed in *Suter*. *Beck*'s formulation of its risk-utility analysis, however, differed from that of *Suter* in both substance and in terminology.[83]

In *Beck*, the plaintiff's husband was killed when a front-end loader overturned on him.[84] The plaintiff alleged that the front-end loader was defectively designed because it lacked a roll-over protection shield.[85] The Supreme Court of Alaska reversed a jury verdict for the plaintiff and remanded the case for a new trial because of a jury instruction[86] which erroneously based proof of the defect on proof of the injury alone.[87] Therefore, the court concluded that this instruction was tantamount to a charge of absolute liability, rather than strict products liability.[88] The court reasoned that, if the mere happening of an injury proved the existence of a defect, then the requirement that a defect be proven, in effect, was eliminated.

As did the *Suter* court,[89] the *Beck* court approved the use of both the consumer expectation test and risk-utility balancing as alternative tests.[90] In its formulation of risk-utility balancing, the *Beck* court agreed with the *Suter* court's position on the evaluation of the feasibility of a safer design[91] and on abnormal use.[92] However, the *Beck* court did not impute to the seller constructive knowledge of his product's propensity for causing

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[80] *See* text accompanying notes 70-72 & 74 *supra*.

[81] 593 P.2d 871 (Alas. 1979).

[82] *See* text accompanying notes 85-90 *infra*.

[83] *See* text accompanying notes 92-94 & 102-04 *infra*.

[84] 593 P.2d at 875. The plaintiff's husband was driving the front-end loader on a dirt road and, although there were no witnesses, it seems that the front-end loader sank into the shoulder of the road, flipped over, and fell down an embankment. *Id.* at 874-75. Beck was crushed beneath the front-end loader. *Id.* at 875. *See* note 24 *supra*.

[85] A rollover protection shield is an overhead canopy constructed to withstand and occasionally prevent rollovers. 593 P.2d at 875.

[86] The trial court's instruction charged the jury that a "design defect is one in which the product, however perfectly manufactured, incorporates or fails to incorporate a design feature with the result that injury is proximately caused thereby." *Id.* at 876.

[87] *Id.* at 879.

[88] *Id.*

[89] *See* text accompanying notes 62-65 *supra*.

[90] 593 P.2d at 884, 886.

[91] *See* text accompanying notes 34-41 *supra*. *Suter* held that the feasibility of a safer design should be determined in light of the knowledge available at the time of the product's sale. *See* text accompanying note 69 *supra*. *Beck* treated feasibility in the same manner. 593 P.2d at 886 n.52 & 887.

[92] *See* text accompanying notes 45-51 *supra*. *Suter* employed a foreseeability test to determine if a use was abnormal. *See* note 67 *supra* and text accompanying notes 66-67 *supra*. *Beck* also employed a foreseeability test. 593 P.2d at 887.

harm, as did the *Suter* court.[93] Instead, *Beck* formulated a foreseeability test by evaluating the product's harmful propensity in light of the knowledge available at the time of the product's sale.[94] Thus *Beck* evaluates all risk-utility considerations in light of the information available at the time of the product's sale.[95]

Beck's reliance on the time of sale makes its definition of design defect difficult to distinguish from the risk-utility balancing in negligence analysis which also relies on the time of sale or manufacture.[96] However, *Beck* distinguishes its definition by allocating the burden of proof to the defendant-seller.[97] All that the plaintiff need prove is that he suffered injury proximately caused by the product.[98] The seller may then defend by proving that the benefits of his design outweighed its risks.[99] Therefore the risk-utility balancing becomes an affirmative defense.[100] The court reasoned that this shift in the burden of proof would put that burden on the party with the greatest access to and familiarity with the technical evidence relevant to the balancing of risks against utility.[101]

The *Beck* court exercised more care in its choice of terminology than did the *Suter* court. The *Beck* court expressly rejected the use of such language as "reasonable, prudent manufacturer."[102] Furthermore *Beck* does not use warranty language in its risk-utility balancing[103] as *Suter*

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[93] *See* text accompanying notes 70-72 & 74 *supra*.

[94] 593 P.2d at 886 n.52. If the propensity of a product for causing harm is evaluated in light of the knowledge available to the seller at the time he sells a product and if there were nothing at that time to indicate that the product is harmful, then the manufacturer couldn't have foreseen the dangerousness of the product. Under *Suter* this unforeseeability would not absolve the defendant, *see* text accompanying notes 70-72 & 74 *supra*, but under *Beck* unforeseeability may absolve the defendant if the defendant affirmatively proves it. *See* text accompanying notes 97-100, *infra; see generally* KIMBLE & LESHER, *supra* note 1, § 73.

[95] *See* text accompanying notes 118-20 *infra*.

[96] *See* KIMBLE & LESHER, *supra* note 1, §§ 73 & 81. Because negligence relies on the concept of foreseeability, negligence necessarily relies on the knowledge available at the time of the product's sale or manufacture. What cannot be known cannot be foreseen.

[97] 593 P.2d at 886-87.

[98] *Id.*

[99] *Id.*

[100] The *Beck* court did not address the issue of which party must plead that the benefits of the design are outweighed by its risks or vice-versa. However, the court held that the plaintiff need only prove that he was injured by the product, *id.* at 886, and then referred to this proof as the plaintiff's prima facie case. *Id.* at 887. Thus it seems to follow that the plaintiff must plead injury and proximate causation, while the seller-defendant must plead non-defectiveness.

[101] *Id.* at 887.

[102] *Id.* at 883-84. The *Beck* court reasoned that terminology such as "reasonable, prudent manufacturer" would tend to focus the jury's attention on the defendant-manufacturer's conduct, instead of on the product and its defectiveness or lack thereof. *Id.*

[103] The *Beck* court formulated its general risk-utility test as follows: "[A] product is defectively designed if: . . . the plaintiff proves that the product's design proximately caused injury and the defendant fails to prove, in light of the relevant [risk-utility] factors, that on balance the benefits of the challenged design outweigh the risk of danger inherent in such a design." *Id.* at 886.

did.[104]

Relying on negligence terminology[105] the West Virginia Supreme Court of Appeals formulated a strict products liability definition of defect in *Morningstar v. Black & Decker Manufacturing Co.*[106] The case was certified from a Federal District Court[107] to ascertain whether West Virginia recognized strict products liability and, if so, what the substantive content of West Virginia's strict products liability entailed.[108] The *Morningstar* plaintiff was injured when the safety guard on his power saw failed to close.[109] The West Virginia Supreme Court of Appeals held that West Virginia would recognize and apply the principles of strict products liability.[110]

The *Morningstar* definition of defect[111] is not based on two alternative test as in the *Suter*[112] and *Beck* decisions;[113] nor does it include the consumer-expectation test, but instead, it is based entirely on risk-utility balancing.[114] As in *Suter*,[115] *Morningstar*'s risk-utility analysis imputes to the seller constructive knowledge of the product's propensity for causing harm.[116] In its evaluation of the feasibility of a safer design, however, the *Morningstar* court would allow a jury to consider evidence of the state of

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[104] *Suter* held that the "manufacturer has an obligation to distribute products which are reasonably fit, suitable, and safe. . . ." Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150, 177, 406 A.2d 140, 153 (1979).

[105] *See* text accompanying notes 124-27 *supra.*

[106] 253 S.E.2d 666 (W. Va. 1979).

[107] *Morningstar* was certified by the United States District Court for the Southern District of West Virginia pursuant to W. VA. CODE § 51-1A-1. 253 S.E.2d at 668. *Morningstar* was the first case the West Virginia Supreme Court of Appeals decided pursuant to West Virginia's federal certification statute, *id.*, although the court had decided previously cases certified by the lower West Virginia courts under a similar statute. *Id.* at 669.

[108] 253 S.E.2d at 668.

[109] *Id.* The *Morningstar* court did not set forth any of the details of the plaintiff's accident. The court noted that Mrs. Morningstar sued for loss of consortium, but never reached the issue of whether loss of consortium is compensable under strict products liability. *Id.*

[110] *Id.* at 680, 683.

[111] The *Morningstar* definition of defect includes manufacturing defects as well as design defects. *Id.* at 682-83. The definition is set forth below:

> [T]he general test for establishing strict liability in tort is whether the involved product is defective in the sense that is is not reasonably safe for its intended use. The standard of reasonable safeness is determined not by the particular manufacturer, but by what a reasonably prudent manufacturer's standards should have been at the time the product was made.

Id. at 683.

[112] *See* text accompanying notes 62-65 *supra.*

[113] *See* text accompanying note 90 *supra.*

[114] 253 S.E.2d at 682. The court held that the considerations weighed in the risk-utility analysis should be used to restrict the issues to which experts can testify. *Id.* Utilizing the risk utility approach to set the bounds of expert testimony differs little from employing risk-utility analysis in jury instructions, since in both situations the jury is ultimately presented with the same information on which to base their judgment.

[115] *See* text accompanying notes 70-72 *supra.*

[116] 253 S.E.2d at 682.

the art at the time of the manufacture of the product.[117] *Suter* and *Beck* allow evidence of state of the art at the time of the product's sale.[118] Although the difference between the time of the manufacture of a product and the time of its sale is usually insignificant, the technology available at the time of manufacture may be obsolete by the time of the product's sale, where a product remains warehoused or remains on the retailer's shelf for a long period of time.[119] In such a case, the seller should be liable for the product's obsolesence while the product is in his control.[120]

Morningstar defines an abnormal use as a use that a reasonable prudent person would not make of the product.[121] *Suter* and *Beck* both held that an abnormal use is a use not foreseeable by the seller.[122] There is little substantive difference between these two tests because a reasonable seller will foresee the uses to which reasonable persons will put his product.[123] However, the *Morningstar* abnormal use test focuses on the uses people will make of the product, whereas the *Suter* and *Beck* test focuses on the manufacturer's ability to foresee what uses people will make of the product. Therefore the *Morningstar* abnormal use test directs the jury's attention toward the product which is being evaluated and avoids focusing on the manufacturer's conduct, which is not at issue in a strict products liability action.

Morningstar's general definition of defect uses negligence language similar to that used in *Suter*.[124] The *Morningstar* court held that a product

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[117] The *Morningstar* court held that the safeness of the product should be evaluated as of the time it was made. *See* note 111 *supra*. However, the time of sale is the time at which the evaluation should be made. *See* text accompanying notes 117-20 *infra*. Since the *Morningstar* court was not dealing with a factual situation in which there was any significant difference between the time of manufacture and the time of sale, it is probable that the court's language was simply imprecise and that, faced with the issue, the court would choose the time of sale.

[118] *See* text accompanying notes 63-69 & 91 *supra*.

[119] In strict products liability the seller is liable only for a defect which existed at the time the product left the seller's control. RESTATEMENT 402A, *supra* note 4, Comment g; KIMBLE & LESHER, *supra* note 1, § 57. The seller should therefore be liable, if the product was obsolete at the time he sold it. KIMBLE & LESHER, *supra* note 1, § 133; O'Donnell *supra* note 36, at 633.

[120] The time of sale is ordinarily the time when the product leaves the defendant's control, but in the case of a lessor-defendant, *see* Cintrone v. Hertz Truck Leasing & Rental Serv., Inc., 45 N.J. 434, 212 A.2d 769 (1965), or in the case of a promotional giveaway of products, the product is not sold. In such cases the time when the product leaves the hands of the defendant should determine whether a design alternative was feasible.

[121] 253 S.E.2d at 683.

[122] *See* text accompanying notes 66-67 & 92 *supra*.

[123] In determining what uses a reasonable person would make of a product, the fact that the plaintiff is a child should not imply that the plaintiff's mishandling of the product is unreasonable. Small children are attracted, quite reasonably, to swimming pools and if they drown because the pool was not guarded by a gate, recovery should be denied only if a reasonable child would not have entered the pool. *See* note 25 *supra*.

[124] *See* note 111 *supra*. *Suter* held that the jury should be instructed to determine whether "the manufacturer, it being deemed to have known of the harmful propensity of the product, acted as a reasonably prudent one." Suter v. San Angelo Foundry & Mach. Co., 81

is defective if it is not "reasonably safe" in terms of the standards of a "reasonably prudent manufacturer."[125] However, since *Morningstar* imputes to the seller constructive knowledge of the product's propensity to cause harm,[126] as does *Suter*, the *Morningstar* definition of defect differs substantively from negligence.[127]

Linguistic purists will prefer cases like *Beck* which carefully avoid the use of negligence and warranty language in the formulation of a strict products liability definition of defect. *Suter* and *Morningstar*, however misleading their language, do establish design defect definitions which are compatible with strict products liability.

All three courts have expanded the seller's liability in order to achieve the policy goal of risk-spreading. *Beck* accomplishes this expansion by shifting the burden of proof to the defendant, while *Morningstar* and *Suter* achieve the same end by imputing to the seller constructive knowledge of his product's harmful propensity. All three courts have avoided the extreme of unlimited liability by ensuring that the requirement of a defect has more substantive content than mere proof of injury caused by a product.

In light of the fact that few of the actual medical costs incurred by those injured by products are ever reimbursed,[128] it is probable that the courts have not yet expanded sellers' liability to the degree necessary to allocate most of product risks away from the injured. However, in view of the growing opposition to further extensions of sellers' liability,[129] the courts may wish to defer to legislative evaluation of the need for further allocation of the costs of product-related harm. Should a court decide that further expansion of the seller's liability is desirable, one method by which such an expansion could be accomplished is both to shift the burden of proof to the seller, as *Beck* did, and to impute to the manufacturer constructive knowledge of his products' harmfulness, as did the courts in *Morningstar* and *Suter*.

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N.J. 150, 177, 406 A.2d 140, 153 (1979).

[125] *See* note 111 *supra*.

[126] *See* text accompanying note 116 *supra*.

[127] *See* text accompanying notes 70-72 & 74 *supra*.

[128] *See* O'Connell, *supra* note 13, at 19.

[129] *See* Bivins, *The Products Liability Crisis: Modest Proposals For Legislative Reform*, 11 AKRON L. REV. 595, 595-97 (1978).