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EVIDENCE OF POST-ACCIDENT FAILURES, MODIFICATIONS AND DESIGN CHANGES IN PRODUCTS LIABILITY LITIGATION

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The expanding field of products liability litigation has produced many exciting and challenging issues with the adoption of the concept of strict liability in tort as promulgated in the *Restatement Second of Torts*, Sections 402A and 402B.[1] One of the most interesting, and most misunderstood, questions created by this revolution in litigation is under what circumstances or conditions, and for what purpose, is evidence admissible of post-accident failures of the same or similar products, and post-accident modifications or changes in design which tend to eliminate a previously existing condition associated with a product or its use. This type of evidence in the trial of a major case based upon strict liability in tort is obviously significant to the trial bar.

Anytime that a manufacturer designs, assembles and places on the market a mass produced product, all of which must conform to a specified quality, evidence that other of these products failed in the same manner as the product causing the plaintiff's injury is highly indicative that the product was in fact defective at the time it was manufactured. The fact that some of the products fail *after* the plaintiff is injured should not affect the admissibility of the incident in strict liability cases if it is in fact a substantially similar occurrence. With the adoption of the concept of strict liability in tort, none of the policy reasons which existed in common law negligence cases for excluding evidence of subsequent occurrences have merit. Whether a failure, modification, or design change occurs before or after the incident involved in the suit, evidence of such events involving the same product is both relevant and material in determining if the product in question was in fact defective.

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1. Adopted in McKisson v. Sales Affiliates, Inc., 416 S.W.2d 787, 789 (Tex. 1967) and Shamrock Fuel & Oil Sales Co. v. Tunks, 416 S.W.2d 779, 783 (Tex. 1967).

APPLICATION IN NEGLIGENCE CASES

Disregarding considerations of causation, in the usual common law negligence products case the thrust of the evidence is directed toward establishing that the defendant knew, or in the exercise of ordinary care should have known, that a dangerous or defective condition existed. Two elements must be established—first, that the product is in fact dangerous or defective, and second, that the defendant had notice of this dangerous or defective condition.

It is this second requirement, that the defendant either had actual knowledge of a dangerous or defective condition or, in the exercise of ordinary care should have known of a dangerous or defective condition, that does not exist in strict liability cases. Because it is essential to establish this knowledge in negligence cases, a rule has developed that evidence of other accidents involving the same condition, the "same inanimate cause"[2] or the use of the "same instrumentality"[3] is admissible as probative evidence tending to establish that a condition or instrumentality is dangerous and that the defendant had notice of the condition.[4] The reason for this is because "the frequency of accidents at a particular place would seem to be good evidence of its dangerous character."[5]

There is, however, a caveat to this rule: a predicate must first be laid to show that other accidents have occurred under "substantially similar" conditions.[6] Each case turns upon the particular facts involved, and no hard and fast rule exists for determining when other accidents occur under "substantially similar" conditions. The admissibility of the evidence, then, depends solely upon whether or not the other accidents are so similar as to be of probative value and does not turn upon identity of circumstances.[7]

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2. Safeway Stores, Inc. v. Bozeman, 394 S.W.2d 532, 538 (Tex. Civ. App.—Tyler 1965, writ ref'd n.r.e.).

3. Brockman v. J. Weingarten, Inc., 115 S.W.2d 753, 755 (Tex. Civ. App.—Galveston 1938), *aff'd*, 134 Tex. 451, 135 S.W.2d 698 (1940).

4. Beaumont, S.L. & W.R. v. Richmond, 78 S.W.2d 232, 236 (Tex. Civ. App.—Beaumont 1935, writ dism'd). *See generally* II C. MCCORMICK & R. RAY, TEXAS LAW OF EVIDENCE § 1525 (2d ed. 1956).

5. Beaumont, S.L. & W.R. v. Richmond, 78 S.W.2d 232, 236 (Tex. Civ. App.—Beaumont 1935, writ dism'd).

6. For an extensive discussion of the rule and its applicability under varying circumstances see Annots., 70 A.L.R.2d 170 (1960); 128 A.L.R. 595 (1940); 127 A.L.R. 1194 (1940); 81 A.L.R. 685 (1932); 65 A.L.R. 380 (1930).

7. M.K.T. Ry. v. McFerrin, 279 S.W.2d 410, 418 (Tex. Civ. App.—Austin 1955), *rev'd and remanded on other grounds*, 156 Tex. 69, 291 S.W.2d 931 (Tex. 1956), includes an excellent discussion of just what constitutes "substantially similar" circum-

The probative value of similar accidents which occur *before* the plaintiff's accident is obvious. However, since a tortfeasor cannot be held responsible in a negligence action for either actual knowledge or constructive knowledge of a dangerous condition or instrumentality which he receives *after* the plaintiff's accident, most jurisdictions exclude evidence of post-accident similar occurrences and restrict the evidence to those accidents which occurred before the plaintiff was injured.[8] The basis for this rule of exclusion in negligence cases is the fear that evidence of post-accident occurrences would confuse the jury or unfairly prejudice the jury against the defendant.

Even in negligence cases the probative value of post-accident occurrences cannot be denied when weighed on the issue of whether or not a condition or instrumentality is in fact dangerous or hazardous.[9] Such evidence should not be excluded on the grounds that the jury will be unable to focus on the purpose for its being admitted, and the evidence should be admitted with a proper instruction to the jury not to give it consideration in determining whether or not the defendant had notice of the condition.

By the same token, evidence of post-accident modifications or design changes is generally inadmissible in common law negligence cases. Two reasons are generally given for this exclusion. First, post-accident changes do not necessarily infer prior negligence "for repairs or improvements merely indicate a belief that the object repaired has been capable of causing the injury."[10] Second, a policy argument is advanced that to allow such evidence would discourage post-accident improvements and safety precautions.[11] There are, however, exceptions to this rule. In negligence cases evidence of post-accident modifications and design changes is admissible to rebut testimony that the product could not be improved,[12] that a different design was not

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stances where the court noted, "[w]e believe that the jury was fully capable of evaluating these minor variations in conditions and that their existence was not of sufficient substance to require exclusion of this testimony." *Id.* at 418; *see* Otis Elevator Co. v. Robinson, 287 F.2d 62, 65 (5th Cir. 1961); City of Wichita Falls v. Crummer, 71 S.W. 2d 583, 585 (Tex. Civ. App.—Fort Worth 1934, writ dism'd); City of Dallas v. McCullough, 95 S.W. 1121, 1124 (Tex. Civ. App. 1906, writ ref'd).

8. See, for example, Texas Power & Light Co. v. Bristow, 213 S.W. 702, 706 (Tex. Civ. App. 1919, writ ref'd); 2 J. WIGMORE, EVIDENCE § 458, at 472-73 (3d ed. 1940).

9. 1 L. FRUMER & M. FRIEDMAN, PRODUCTS LIABILITY § 12.01(4) (1971).

10. Eastern Air Lines, Inc. v. American Cyanamid Co., 321 F.2d 683, 690 (5th Cir. 1963).

11. Regardless of the antecedents of this policy, it is no longer valid in today's sophisticated world of insurance coverage by product manufacturers.

12. Winnsboro Cotton Oil Co. v. Carson, 185 S.W. 1002, 1007 (Tex. Civ. App.—Dallas 1916, no writ).

feasible or practical,[13] to establish control,[14] to show conditions which existed at the time of an accident,[15] or to show that the accident could have been avoided.[16] Neither the rules of exclusion in negligence cases nor the exceptions which have been developed have any application in products liability cases based on strict liability in tort, since knowledge plays no part in attaching liability.

STRICT LIABILITY IN TORT

It is no part of the doctrine of strict liability that the manufacturer of the product has "knowledge" or "notice" of a defective condition or that he be in a position to "discover" the defect by the exercise of ordinary care. Yet, the fear that a defendant will be prejudiced by evidence of the "notice" received in post-accident failures in negligence cases is one of the bases for excluding such evidence in negligence actions. This concept is wholly inapplicable where liability is grounded upon proof that the product was defective which renders it unreasonably dangerous to the user. Under Section 402A of the *Restatement Second of Torts*, liability is imposed without fault and attaches even though "the seller has exercised all possible care in the preparation and sale of his product"[17] and "does not turn on the producer's knowledge or lack of knowledge of unfitness of the product."[18] Accordingly, in strict liability cases it is necessary to demonstrate only that the product was defective for its intended use at the time it was manufactured, and this fact can be established by circumstantial evidence when such fact is fairly and reasonably inferable from other facts proved in the case.[19]

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13. Boeing Aircraft Co. v. Brown, 291 F.2d 310, 315 (9th Cir. 1961); Johnson v. United States, 270 F.2d 488, 492 (9th Cir. 1959); Houston Lighting & Power Co. v. Brooks, 319 S.W.2d 427, 436 (Tex. Civ. App.—Houston 1958), *rev'd on other grounds*, 162 Tex. 32, 336 S.W.2d 603 (1960).

14. Houston Lighting & Power Co. v. Taber, 221 S.W.2d 339, 344 (Tex. Civ. App. —Galveston 1949, writ ref'd n.r.e.).

15. Steele v. Wiedemann Mach. Co., 280 F.2d 380, 382 (3d Cir. 1960); Rash v. Ross, 371 S.W.2d 109, 114 (Tex. Civ. App.—San Antonio 1963, writ ref'd n.r.e.); City of Beaumont v. Dougherty, 298 S.W. 631, 636 (Tex. Civ. App.—Beaumont 1927), *aff'd*, 9 S.W.2d 1030 (Tex. Comm'n App. 1928, jdgmt adopted).

16. Jennings v. United States, 207 F. Supp. 143, 148 (D. Md. 1962), *aff'd*, 318 F.2d 718 (4th Cir. 1963). *See also* C. MCCORMICK, LAW OF EVIDENCE § 275(g), at 666-67 (2d ed. 1972); Annot., 64 A.L.R.2d 1296, 1315 (1959).

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

18. Hoover v. O.M. Franklin Serum Co., 444 S.W.2d 596, 598 (Tex. 1969).

19. Franks v. National Dairy Prod. Corp., 414 F.2d 682, 686 (5th Cir. 1969). As stated in Pittsburg Coca-Cola Bottling Works v. Ponder, 443 S.W.2d 546 (Tex. 1969), "[t]his is not to say that proof of the defect must be made by direct or opinion evidence; *it usually can only be made by circumstantial evidence.*" *Id.* at 548 (emphasis added).

Post-Accident Failures

In the area of liability without fault it is obvious that evidence of substantially similar product failures which happen both *before* and *after* the incident causing the plaintiff's injury are equally probative that the product was in fact defective. The only limitation in this regard is that they must be "substantially similar" failures.[20] In *Wojciechowski v. Long-Airdox Division of Marmon Group, Inc.*,[21] suit was brought against a manufacturer to recover for injuries sustained when a compressed air blasting shell misfired. In considering the admissibility of evidence that other shells had misfired, the court noted that each of the shells was of "identical design with the suspect shell" and that evidence of other misfiring was admissible as "direct evidence that the suspect shell was itself defective."[22]

Similarly, in *Ginnis v. Mapes Hotel Corp.*,[23] a hotel guest was injured when an automatic door closed on her. The court said "evidence of subsequent, similar accidents involving the same door are relevant to causation and a defective and dangerous condition under that theory."[24] It thus admitted evidence of both *prior* and *subsequent* accidents.

In *Penn v. Inferno Manufacturing Corp.*,[25] plaintiff was injured when a "site glass" used on a high pressure instrument exploded. Although it was apparently not at issue, the court reviewed evidence that after the site glass exploded which injured the plaintiff, it was replaced with a second site glass which also exploded. Commenting upon the weight of this evidence, the court stated that it "lends further inference that corning glass had not exercised the degree of care required of them in the manufacture of their product."[26]

Evidence of post-accident failures of other products in strict liability cases is admissible not only because it is direct, relevant and probative evidence that a product conforming to the identical design was defective, but also on the issue of causation to show "that the injury was

20. 1 HURST, AMERICAN LAW OF PRODUCTS LIABILITY § 1:9 (1961).
21. 488 F.2d 1111 (3d Cir. 1973).
22. *Id.* at 1116; *see* Lolie v. Ohio Brass Co., 502 F.2d 741, 746 (7th Cir. 1974).
23. 470 P.2d 135 (Nev. 1970).
24. *Id.* at 139. The trial court had also excluded evidence of 16 repair orders on repairs both before and after the accident. In passing on whether these repair orders should be admissible under strict liability, the court said: "Should the repair orders, prior or subsequent, tend to prove the faulty design or manufacture or any other necessary element of that cause of action, they would be admissible." *Id.* at 140.
25. 199 So. 2d 210 (La. Ct. App.), *aff'd*, 222 So. 2d 649 (La. 1967).
26. *Id.* at 228.

caused by the condition."[27] Such evidence was recognized in *Wojciechowski* as a prime vehicle through which to counter a manufacturer's contention that the design of the product was such that it was impossible for the product to fail because of the defect alleged by plaintiff. One court has admitted evidence of other complaints received by the manufacturer from persons adversely affected by the use of its product. Recognizing that such facts could become material evidence of the issue of causation, the New Hampshire Supreme Court noted that the existence of other complaints "may well be material and competent upon the question of whether harm was probably caused by an ingredient of the product, rather than as the result of abnormal susceptibility on the part of the complainant."[28] The court also indicated that such evidence might also touch upon the issue of notice of an inherently dangerous product, and the accompanying duty to warn.[29]

Post-Accident Modifications and Design Changes

After a product is sold, and defects in design come to the manufacturer's attention, the manufacturer has a duty to remedy these defects,[30] or, if complete remedy is not feasible, "at least to give users adequate warnings and instructions concerning methods for minimizing the danger."[31] Certainly the initial failure to give adequate warnings concerning the use of a product will render the product unreasonably dangerous, a situation in which strict liability can attach.[32] The basis for this is that the manufacturer alone is in "a peculiarly strategic position to improve the safety of his products, so that the pressure of strict liability could scarcely be exerted at a better point if accident prevention is to be furthered by tort law."[33] As a result, manufacturers are held to the degree of knowledge and skill of experts which imposes

27. Ginnis v. Mapes Hotel Corp., 470 P.2d 135, 139 (Nev. 1970).

28. Farnum v. Bristol-Meyers Co., 219 A.2d 277, 279 (N.H. 1966).

29. *Id.* at 279; *see* Badorek v. General Motors Corp., 90 Cal. Rptr. 305 (Ct. App. 1970).

30. See, for example, Nader & Page, *Automobile Design and the Judicial Process*, 55 CAL. L. REV. 645 (1967) where the authors state that

> the manufacturer's highest objective should be based on a fundamental principle of safety engineering: to anticipate every type of accident which may result from machine or human failure and then to minimize both the risk of failure and the injuries which may be sustained when failure occurs.

Id. at 652.

31. Braniff Airways, Inc. v. Curtiss-Wright Corp., 411 F.2d 451, 453 (2d Cir. 1969).

32. Borel v. Fibreboard Paper Prod. Corp., 493 F.2d 1076, 1089 (5th Cir. 1973).

33. James, *General Products—Should Manufacturers Be Liable Without Negligence?*, 24 TENN. L. REV. 923 (1957). *See also* James, *Products Liability*, 34 TEXAS L. REV. 44 (1955).

expert status upon the manufacturer.[34] He must be aware of the developments in his field "including safety devices and equipment used in his industry with the type of products he manufactures."[35] As one court has stated "the manufacturer is required to adopt any and all devices the absence of which render his product unreasonably dangerous."[36] The result is that evidence of competitive and comparative designs has uniformly been held admissible, either from expert witnesses knowledgeable about the particular industry[37] or knowledgeable about the specific uses to be made of the product.[38]

In strict liability cases evidence of post-accident modifications and design changes of the manufacture should be admissible as probative evidence that the original design of the product was defective. At the very least, modifications and design changes fully qualify as an admission when tested under traditional rules of evidence.[39] Moreover, the policy basis for excluding such evidence in negligence cases does not exist in strict liability cases where liability is imposed even though "the seller has exercised all possible care in the preparation and sale of his product."[40] In today's world of competitive, consumer-oriented manufacturers, it is unreasonable to suggest that admission of such evidence would discourage manufacturers from taking safety precautions and making post-accident improvements. In fact, in addition to humanitarian reasons, there are at least two compelling practical reasons why manufacturers are likely to take immediate safety precautions upon learning of existing defects. First, manufacturers realize that liability insurance companies will not continue to insure the further production of known defective products; as a condition to continuing the

34. Dunham v. Vaughn & Bushnell Mfg. Co., 229 N.E.2d 684, 688 (Ill. Ct. App. 1967), *aff'd*, 247 N.E.2d 401 (Ill. 1969).

35. Moren v. Samuel M. Langston Co., 237 N.E.2d 759, 765 (Ill. Ct. App. 1968); *see* Noel v. United Aircraft Corp., 342 F.2d 232, 236 (3d Cir. 1964) (concerning a manufacturer's "continuing duty").

36. Rivera v. Rockford Mach. & Tool Co., 274 N.E.2d 828, 833 (Ill. Ct. App. 1971), *quoted with approval* in Mahoney v. Roper-Wright Mfg. Co., 490 F.2d 229, 233 (7th Cir. 1973). In Noel, *Manufacturer's Negligence of Design or Directions for Use of a Product*, 71 YALE L.J. 816, 826 (1962), the author states:

> It would seem that where a safety device can be easily attached and will remedy a real danger, there should be a duty to take reasonable steps to supply the safety device even to those to whom the product already has been sold. There is no doubt that such a duty exists when it develops that the original design is clearly defective.

37. Blohm v. Cardwell Mfg. Co., 380 F.2d 341, 344 (10th Cir. 1967).

38. *See* Pike v. Frank G. Hough Co., 85 Cal. Rptr. 629, 632-33, 633 n.2 (1970); McCormack v. Hankscraft Co., 154 N.W.2d 488 (Minn. 1967).

39. Any action taken by a party or on a party's behalf which is inconsistent with a position being taken by that party during trial qualifies as an admission.

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

existing insurance coverage the manufacturer would be required by the liability insurance company to correct these defects. Second, manufacturers are well aware of the marketing impact which adverse publicity can have on future sales; and future sales will definitely take high priority over the payment by a manufacturer's insurance carrier of a damage suit judgment. The experience of the automotive industry is illustrative. In order to comply with statutory mandate, car manufacturers were required to send "recall letters" notifying purchasers of safety related defects.[41] Certainly, this is clear evidence that safety precautions and improvements will not in any way be retarded by considerations of tort law.[42] As the doctrine of strict liability expands, courts are recognizing that evidence of post-accident modification and design changes are important factors to be considered by the fact finder.

In *Hoppe v. Midwest Conveyor Co.*[43] the trial court refused to admit much of the plaintiff's expert testimony concerning the alleged defective design of the machinery in question. The circuit court admitted the testimony and listed the criteria it would consider in determining the relevancy of post-accident modifications. Defective design could be proved relevant by

(1) the comparative design with similar and competitive machinery in the field;
(2) alternative designs and post accident modification of the machine;
(3) the frequency or infrequency of use of the same product with or without mishap; and
(4) the relative cost and feasibility in adopting other designs.[44]

In a wrongful death action brought against the manufacturer of an allegedly defective strip-mining machine evidence of a post-accident modification in the design of the equipment was admissible.[45] In acknowledging the admissibility of alternate designs,[46] the court concluded:

41. 15 U.S.C. § 1402(a) (1970).
42. *See* Nevels v. Ford Motor Co., 439 F.2d 251, 258 (5th Cir. 1971); Glynn Plymouth, Inc. v. Davis, 170 S.E.2d 848, 850-51 (Ga. Ct. App. 1969), *aff'd*, 173 S.E.2d 691 (Ga. 1970).
43. 485 F.2d 1196 (8th Cir. 1973).
44. *Id.* at 1202.
45. Sutkowski v. Universal Marion Corp., 281 N.E.2d 749, 752 (Ill. Ct. App. 1972).
46. In the development of products liability principles design alternatives are appropriately considered whether reasonable care is the basis of liability or where liability is

> If the feasibility of alternative designs may be shown by the opinions of experts or by the existence of safety devices on other products or in the design thereof . . . evidence of a post occurrence change is equally relevant and material in determining that a design alternative is feasible.[47]

In *Wallner v. Kitchens of Sara Lee*[48] the design of a conveyor belt was questioned. Post-accident photographs which revealed design changes that were effected after the incident in question were admitted into evidence at the trial. Approving the admission of the evidence, the court discounted the policy basis for excluding this type of evidence in negligence cases and concluded that "[e]vidence of post-accident repairs or changes is properly introduced for any purpose except to demonstrate the negligence of a defendant."[49]

In *Brown v. Quick Mix Co.*[50] a guard rail was welded on the machinery involved immediately following an accident. The evidence was admitted to show the feasibility of guarding the centralizer. The basis for this ruling was that since the issue of "feasibility" was in the case, evidence of subsequent changes in the design of the machinery would be admissible regardless of whether it was the plaintiff or the defendant who injected the issue into the case. This same rule was applied in *Stark v. Allis Chalmers & Northwest Roads, Inc.*,[51] and in *Boeing Airplane Co. v. Brown.*[52] In the latter case the manufacturer was willing to admit that changes in the product "would have been feasible before the accident and were in fact made afterwards."[53] The manufacturer would not admit, however, to the exact changes that were made after the accident. The trial court admitted evidence of those specific changes since Boeing refused to admit the feasibility of the "specific" changes which it made.

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predicated upon strict tort liability. Pike v. Frank G. Hough Co., 85 Cal. Rptr. 629, 633 (1970). In both cases it appears that policy considerations are involved which shift the emphasis from the defendant manufacturer's conduct to the character of the product. Such change and emphasis furnishes additional reasons for permitting evidence of alternative designs in a strict tort liability case. *See* Moore v. Jewel Tea Co., 253 N.E.2d 636, 646 (Ill. Ct. App. 1969).

47. Sutkowski v. Universal Marion Corp., 281 N.E.2d 749, 753 (Ill. Ct. App. 1972).

48. 419 F.2d 1028 (7th Cir. 1969).

49. The court also discusses admissibility of standards of the American Safety Standards Institute as being "relevant to the questions of the dangerousness of the conveyor." *Id.* at 1032.

50. 454 P.2d 205, 209 (Wash. 1969).

51. 467 P.2d 854 (Wash. Ct. App. 1970).

52. 291 F.2d 310 (9th Cir. 1961); *see* Pike v. Frank G. Hough Co., 85 Cal. Rptr. 629 (1970); *cf.* Ault v. International Harvester Co., 110 Cal. Rptr. 369 (1973).

53. Boeing Airplane Co. v. Brown, 291 F.2d 310, 315 (9th Cir. 1961).

The Ninth Circuit affirmed, opining that

> an admission that unspecified "changes" would have been feasible and were actually made does not render irrelevant evidence as to specific changes subsequent to the accident when offered for the limited purpose of proving the feasibility of such changes to correct the specific defects in issue.[54]

One other aspect of the case is noteworthy. Boeing objected because some of the design changes which were introduced into evidence were unrelated and had no causal connection with the accident. The appellate court rejected Boeing's contention that these should not have been admitted. It concluded that "the fact that the trial court ultimately placed primary blame on defects in the design of the speed controls and the protective shroud . . . would not make irrelevant prior inquiries into other alleged defects in the [mechanism]."[55]

In *Ellis v. H.S. Finke, Inc.*,[56] the essence of the plaintiff's complaint was that a hoist was defectively designed. The basis for this claim was that subsequent to the sale of the hoist "an improved safety device" was perfected, and that without this device previously sold hoists were defective. The Court of Appeals for the Sixth Circuit affirmed a directed verdict for the manufacturer because there was no causal connection between "the falling of the platform and the failure to install the new safety device." However, the case clearly recognizes that evidence of post-sale modifications in design is admissible evidence.

CONCLUSION

For several decades courts have wrestled in common law negligence cases with the rule that evidence of post-accident failures, modifications and design changes are inadmissible. As a result, various exceptions have developed which have allowed this evidence to be admitted under various circumstances and for limited purposes.[57] With the adoption of the concept of strict liability in tort, none of the rationale and policy bases for excluding evidence of post-accident failures, modifications and design changes exist. Such evidence is clearly probative, relevant and material in determining if a similar product was unreasonably dangerous for its intended use.

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54. *Id.* at 315.
55. *Id.* at 316.
56. 278 F.2d 54 (6th Cir. 1960).
57. An extensive list of cases applying these exceptions will be found in 1 L. FRUMER & M. FRIEDMAN, PRODUCTS LIABILITY § 12.04, at 337-38 (1971).