Marquette Sports Law Review

Volume 16
Issue 2 *Spring*

Article 8

Spring 2006

# Baseball Bats in the High Tech Era: A Products Liability Look at New Technology, Aluminum Bats, and Manufacturer Liability

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# BASEBALL BATS IN THE HIGH TECH ERA: A PRODUCTS LIABILITY LOOK AT NEW TECHNOLOGY, ALUMINUM BATS, AND MANUFACTURER LIABILITY

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## I. INTRODUCTION

Every year, millions of Americans travel to ballparks throughout the country to pay homage to the game long regarded as the national pastime. One of the primary reasons baseball continues to maintain its strong following is that the modern game has endured little change since the days of "Shoeless" Joe Jackson, Babe Ruth, Ty Cobb, and Lou Gehrig. At the end of the day, baseball is still a game of four bases, three outs, and nine players per side. Yet that is not to say that baseball has been immune to technological advances. For example, the aluminum bat, a relatively recent invention, has gained a significant following at the youth, high school, and college levels.[1]

However, underlying the expanded use of aluminum bats is the significant potential for unforeseen risks. Recent technological advances have made aluminum bats lighter and have produced bats with larger "sweet spots," allowing the batter to generate more bat speed and, in turn, increasing the risk of serious injury.[2] The implications of these technological advances are clear. While aluminum bats continue to grow in popularity and become increasingly advanced, the players remain in a poor position to protect themselves from

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1. A survey of high school baseball coaches conducted by the National High School Baseball Coaches Association revealed that a substantial percentage of coaches preferred aluminum bats over wooden bats. *Briefly in the News: Metal Bat Preference*, NCAA NEWS, May 19, 1997, *available at* http://www.ncaa.org/news/1997/970519/briefly.html#2. However, for both competitive and safety concerns, Major League Baseball has never allowed the use of aluminum bats. The National Collegiate Athletic Association, the major governing body of college sports, began allowing aluminum bats in 1974. Bernie Mussill, *The Evolution of the Baseball Bat*, http://www.stevetheump.com/bat_history.htm (last visited Feb. 14, 2006).

2. Daniel A. Russell, *Why Aluminum Bats Perform Better than Wood Bats*, PHYSICS AND ACOUSTICS OF BASEBALL AND SOFTBALL BATS, http://www.kettering.edu/~drussell/bats-new/alumwood.html (last visited Feb. 14, 2006).

injury.

Consider the case of Brandon Patch. Patch, an eighteen-year-old pitcher for his local American Legion team, was killed when he was struck in the head with a line drive off of an aluminum bat.[3] Pitchers are not the only players potentially at risk. Anthony Ricci, a sixteen-year-old third baseman playing Babe Ruth League baseball, was struck in the face by a line drive off an aluminum bat, resulting in forty stitches, two lost teeth, and a wired jaw.[4] Patch's death and Ricci's injury could possibly have been prevented. Though these injuries might still have occurred with a wooden bat, studies have shown that aluminum bats cause balls to be hit harder and faster than is otherwise possible.[5] This begs the question: Can the manufacturer of an aluminum bat be found liable in such a scenario?

As this article will demonstrate, the ability of a plaintiff to recover in products liability will inevitably depend on the approach taken in the given jurisdiction. While a plaintiff might recover in a jurisdiction that employs either a consumer expectations approach or risk/utility with hindsight analysis, it is less likely that a plaintiff will recover in a jurisdiction that subscribes to the more recent negligence-like approach advanced by the RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY.

Part II of this essay will provide background information on aluminum bats and discuss recent advances in baseball bat technology. Part III will briefly describe the products liability doctrines of manufacturing defect, design defect, and warning defect. Part IV will analyze cases under the various theories of design defect law in order to determine the affect each approach would have on a plaintiff's ability to recover in the aluminum bat context. Part V will discuss potential manufacturer defenses and other issues which might preclude liability. Finally, Part VI will provide a brief

3. Tom Cotton, *Miles City Baseball Player Dies*, HELENA INDEP. REC., July 27, 2003, *available at* http://www.helenair.com/articles/2003/07/27/helena_top/a01072703_03.txt.

4. Wayne Coffey, *Scrape Metal: Pols, Parents & Players Going to Bat for Wood*, N.Y. DAILY NEWS, Nov. 24, 2002, *available at* http://www.nydailynews.com/sports/story/38078p-35929c.html. Injuries such as those suffered by Ricci led to New York City Councilman James S. Oddo introducing a bill to ban the use of non-wood bats by minors. *Id.*

5. *See* JAMES A. SHERWOOD, TIMOTHY MUSTONE & LAWRENCE P. FALLON, CHARACTERIZING THE PERFORMANCE OF BASEBALL BATS USING EXPERIMENTAL AND FINITE ELEMENT METHODS 9, http://m-5.eng.uml.edu/umlbrc/publications/Characterizing%20the%20Performance%20of%20Baseball%20Bats%20using%20Experimental%20and%20Finite%20Element%20Methods.pdf (last visited Feb. 14, 2006). This study found that of the bats tested, the exit speed of the ball off of a wooden bat was 91.3 miles per hour and 101.8 miles per hour off of an aluminum bat. *Id.*; *see also* R.M. Greenwald, L.H. Penna, & J.J. Crisco, *Differences in Batted Ball Speed With Wood and Aluminum Bats: A Batting Cage Study*, 17 J. APPLIED BIOMECHANICS 241 (Aug. 2001). This study determined that on average, the exit speed of a ball off of an aluminum bat was nine percent faster than that of a wooden bat. *Id.* at 241.

conclusion.

## II. THE EVOLUTION OF THE BASEBALL BAT

### *A. History*

As the game of baseball has evolved, so too have baseball bats. During the game's infancy, players constructed their own bats of differing styles, including long, short, flat, and heavy varieties.[6] In 1884, the baseball bat was revolutionized by the invention and marketing of the Louisville Slugger.[7] After noticing Louisville player Pete Browning routinely break several bats, seventeen-year-old apprentice carpenter Pete Hillerich volunteered to create what he hoped was a more durable alternative out of a piece of white ash.[8] The Louisville Slugger and baseball's first bat manufacturing company, Hillerich & Bradsby, were born. Even today, the Louisville Slugger remains the bat of choice for many major leaguers.

Though aluminum bats had been designed as early as 1924, wooden bats were the predominant choice of players of all ages until the 1970s.[9] In 1970, the Worth Company introduced baseball's first widely marketed aluminum bat.[10] Competitors such as Louisville Slugger, Easton, Mizuno, and other companies soon followed with models of their own.[11] Today, aluminum bats are the norm for most youth, high school, and college players.

### *B. Increases In Technology*

Aided by science and technology, modern aluminum bats have advanced significantly since the Worth Company first introduced the original model. These technological advances can be seen in many ways. First, the material with which a bat is made can have a significant impact on its overall performance. While the original aluminum bat was made of a simple aluminum alloy developed by the aerospace industry,[12] more advanced aluminum alloys were introduced in the mid-1990s. The most popular of these

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6. *Baseball Bat History*, BASEBALL-BATS.NET, http://www.baseball-bats.net/baseball-bats/baseball-bat-history/ (last visited Feb. 14, 2006).

7. *Id.*

8. *Id.*

9. *Id.*

10. *Id.*

11. *Id.*

12. *The History of Bats*, WORTHSPORTS.COM, http://web.archive.org/web/20050317112535/http://www.worthsports.com/ aboutworth/bat_history.html (last visited Feb. 14, 2006).

was the scandium-aluminum alloy. When alloyed with aluminum, scandium greatly increases the strength and resiliency of a bat without affecting the overall weight.[13] The majority of today's high-quality aluminum bats are made from a scandium-aluminum alloy.[14]

Second, the design of the bat might also contribute to its performance. Aluminum bats, as opposed to wooden bats, have what is called a "trampoline effect."[15] This "trampoline effect" occurs because "the thin shell [of an aluminum bat] actually compresses during the collision with the ball and springs back, much like a trampoline."[16] A wooden bat, in comparison, is essentially incompressible and produces little "trampoline effect."[17] When a ball hits an incompressible surface such as the barrel of a wooden bat, the ball, as opposed to the bat, compresses.[18] When a ball collides with a compressible surface such as the barrel of an aluminum bat, it is the thin wall of the bat that compresses.[19] The bat then expands out again, pushing against the ball. This results in the ball leaving the bat at a higher rate of speed.[20]

Technological advances have allowed manufacturers to increase this so-called "trampoline effect." For example, one design, introduced in the late 1990s, consists of a double wall.[21] The outer wall is comprised of scandium aluminum while the inner wall is made up of some form of composite material, with a filling of rubber or some form of thick fluid between the walls.[22] Yet another design calls for a series of flexible arches within the scandium shell.[23] Manufacturers have also used pressurized air within the barrel of the bat as a means of increasing the "trampoline effect." For example, the "Air Attack 2," manufactured by Hillerich & Bradsby, contains a pressurized air bladder within the barrel of the bat, increasing the speed at

13. UNITED STATES GEOLOGICAL SURVEY, BASEBALL BAT INNOVATIONS, http://minerals.usgs.gov/minerals/pubs/general_interest/sport_mins/baseball.pdf (last visited Feb. 14, 2006).

14. *Id.*

15. Alan M. Nathan, *Wood Versus Aluminum Bats*, THE PHYSICS OF BASEBALL, http://www.npl.uiuc.edu/~a-nathan/pob/al-vs-wood.pdf (last visited Feb. 14, 2006).

16. *Id.* An aluminum bat has a thin shell because it is hollow. A wood bat is solid throughout the bat. This so-called "trampoline effect" is also evidenced by a tennis ball hitting a tennis racket. *Id.*

17. *Id.*

18. *Id.*

19. *Id.*

20. *Id.*

21. UNITED STATES GEOLOGICAL SURVEY, *supra* note 13.

22. *Id.*

23. *Id.*

which a ball leaves the bat.[24]

These technological enhancements only improve upon the already heightened capabilities of an aluminum bat. Since a wooden bat is solid, a majority of its weight is concentrated in the barrel; in turn, the center of gravity is further away from the hands of a user.[25] For an aluminum bat, which is hollow, the center of gravity is closer to the handle of the bat.[26] Therefore, an aluminum bat that is the same length and weight of a wooden bat has a lower swing weight. A lower swing weight results in higher bat speed, which in turn, contributes to exit velocity.[27]

### *C. Do Aluminum Bats Affect The Game?*

The use of technologically enhanced aluminum bats has had a profound impact on amateur baseball. From 1995 to 1999, batting averages, home runs, and overall scoring all increased in National Collegiate Athletic Association ("NCAA") baseball.[28] While this rise in production might be the result of a multitude of factors, other evidence indicates the significant contribution of aluminum bats. For instance, a study conducted by Amherst College baseball coach Bill Thurston tracked the performance of ninety-two college baseball players in the Cape Cod League, a summer baseball league comprised of the top NCAA Division I baseball players in the country.[29] Cape Cod League rules require that players use wooden bats.[30] While over seventy percent of the players hit for a .300 batting average[31] using aluminum bats during their

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24. Mike McKee, *Bat Ups Chance of Baseball Injuries, Appeals Court Rules*, RECORDER, Dec. 24, 2002, *available at* http://www.law.com/jsp/article.jsp?id=1039054489023.

25. Nathan, *supra* note 15.

26. *Id.*

27. *Id.* An aluminum bat does have one disadvantage to a wooden bat. Because there is more mass in the barrel of a wood bat, the wood bat produces a more effective collision. *Id.*

28. Matt Kelly & Paul Pedersen, *Hardball-Hardbat: A Call for Change From Aluminum to Wooden Baseball Bats in the NCAA*, SPORT J., Dec. 15, 2000, *available at* http://www.thesportjournal.org/2001Journal/summer/hard-bats.htm. Batting averages increased from .296 to .301, home runs rose from .80 to .91 per game, and overall scoring increased from 6.49 runs to 6.81 runs per game. *Id.*

29. *Thurston Offers Latest Study*, COACHING MGMT., Feb. 2001, *available at* http://www.momentummedia.com/articles/cm/cm0901/bbthurston.htm.

30. Julia Morse, *Cape Cod Baseball League Offers Head Start to Future Stars*, JOURNALISM STUDENTS' ONLINE NEWS SERVICE, June 19, 2003, http://jsons.collegepublisher.com/main.cfm/include/detail/storyid/439960.html.

31. A player's batting average is determined by dividing the total number of hits made by the total number of times at bat. *See* Mary Beth Indelicato, *Baseball*, MATHLETICS, http://oncampus.richmond.edu/academics/education/projects/webunits/math/baseball.html (last

college seasons, only nine percent of those same players were able to produce similar statistics using a wooden bat.[32] This same disparity was seen in slugging percentage. While forty-five percent of the players had a slugging percentage[33] over .500 with an aluminum bat, only two percent of the same hitters matched their previous production.[34]

### *D. Why Aluminum Bats?*

As noted above, aluminum is the bat of choice for a majority of amateur baseball players. The reasons behind this popularity are twofold: cost and capability. First, aluminum bats were initially manufactured as a cost-efficient alternative to wooden bats.[35] This holds true today. While a top of the line wooden bat may cost at least $80, the bat might potentially break when contact is made towards the handle of the bat.[36] In contrast, an unbreakable, technologically enhanced aluminum bat costs $250.[37] While $250 is still a significant investment, an aluminum bat is nevertheless more cost-effective considering its durability. Second, consumers have begun to see aluminum bats as more than just a cost-effective alternative. Most batters agree that a baseball can be hit harder with an aluminum bat.[38] Bat manufacturers have answered this market demand by producing technologically enhanced bats with even greater capabilities.[39]

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visited Feb. 14, 2006).

32. *Thurston Offers Latest Study*, *supra* note 29.

33. Slugging percentage is determined by dividing the total number of bases a player has accumulated, for example, four bases for a homerun, three bases for a triple, etc., by the total number of times at bat. *FAQ-Baseball*, CHECKLIST CENTRAL, http://www.checklistcentral.com/faq_BB.html#20 (last visited Feb. 14, 2006).

34. *Thurston Offers Latest Study*, *supra* note 29.

35. TIMOTHY J. MUSTONE & JAMES A. SHERWOOD, USING LS-DYNA TO CHARACTERIZE THE PERFORMANCE OF BASEBALL BATS 1 (1998), http://m-5.eng.uml.edu/umlbrc/publications/Using%20LS-DYNA%20to%20Characterize%20the%20Performance%20of%20Baseball%20Bats.pdf.

36. John Vellante, *Coach Battles to Keep Aluminum Bats on the Diamond: MIAA Panel to Vote on Wood-Only Rule*, BOSTON GLOBE, Oct. 13, 2002, *available at* http://www.amateurbaseballtoday.com/news/article_101302.php.

37. *Id.*

38. *See* Russell, *supra* note 2

(Because college players use aluminum bats, they can hit inside pitches for base hits. As a result, fewer and fewer younger professional pitchers throw inside pitches than used to be the norm in years past. They learn while playing in high school [sic] and college that inside pitches get hit for runs. Likewise hitters often find it to be considerably difficult to make the change from aluminum to wood, especially when dealing with inside pitches.).

39. Steven Ashley, *High Tech Up at Bat*, POPULAR SCI., May 1992, at 108-11, 122, 124. According to Dave Ottman, a production manager for Hillerich & Bradsby, when it comes to the

Taking into account the consumer demand for aluminum bats, the implications of increased bat technology are clear: new technological advances in bat design, coupled with the already inherent advantages of aluminum bats, increase the risks of player injury. Baseball, like any other sport, has inherent risks of which every participant is arguably aware. However, when the equipment a player uses has the tendency to increase these inherent risks, the same level of awareness might not hold true.

## III. PRODUCTS LIABILITY: AN OVERVIEW

There are three primary areas of products liability law: manufacturing defect, design defect, and warning defect. It is not always easy to identify the differences between these doctrines. A manufacturing defect is generally defined as a discrepancy between the manufacturer's intended design and the finished product.[40] In other words, the defective product "comes off the assembly line in a substandard condition"[41] as compared to other identical models.[42]

On the other hand, a product that is defectively designed will not differ from other identical products. Instead of the individual model having been defectively constructed in the manufacturing process, a defect in design calls into question the product line as a whole.[43] Whereas a product with a manufacturing defect can be made safer if properly constructed, a product that is defectively designed has inherent risks that may be diminished but never fully addressed.

Lastly, a warning defect deals not strictly with the design of the product, but rather with the manufacturer's duty to warn of any inherent risks created by the product, the adequacy of the warning, and the warning's content.[44]

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offensive capabilities of an aluminum bat, "[K]ids want an edge, so we've been giving them one." *Id.* at 122.

40. *See* RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2(a) (1998) (stating that a product "contains a manufacturing defect when the product departs from its intended design even though all possible care was exercised in the preparation and marketing of the product.").

41. Lee v. Butcher Boy, 215 Cal. Rptr. 195, 198 (Cal. Ct. App. 1985) (quoting Barker v. Lull Eng'g Co., 143 Cal. Rptr. 225, 236 (Cal. 1978)).

42. *Id.*

43. *See* John W. Wade, *On the Nature of Strict Tort Liability for Products*, 44 MISS. L.J. 825, 825 (1973).

44. *See* Lenherr v. NRM Corp., 504 F. Supp. 165, 172 (D. Kan. 1980)

(A product may also be defective without any ascertainable defect in the product and although the product was precisely what it was intended to be, if the manufacturer fails to give adequate and timely warnings as to the dangers or hazards which may result from a foreseeable use or misuse of the product.).

Because addressing all three doctrines in relation to aluminum bats would result in an overly lengthy undertaking, this essay will focus strictly on the design defect category of products liability. Manufacturing and warning defects, though likely of relevance in the aluminum bat context, are beyond the scope of this comment.

## IV. ALUMINUM BATS: A PRODUCTS LIABILITY ANALYSIS

### *A. Consumer Expectations*

Though not typical, a number of jurisdictions use a consumer expectations approach in determining whether a product was defectively designed. The consumer expectations standard is designed to reflect the policy that a product's presence on the market is a representation that the product will safely perform the tasks for which it was manufactured.[45] As a result, if a product is "dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it[,]"[46] the product is defectively designed.[47]

The consumer expectations test is an objective standard measured by the ordinary group of consumers who purchase the product.[48] A product in which the ordinary consumer has no expectation of safety is not defectively designed under the consumer expectations approach.[49] Thus, a product is not defectively designed if the dangers presented by the product are obvious or readily apparent to the ordinary consumer.[50] The manufacturer's knowledge of the risk, or lack thereof, does not act as defense to liability, even if justifiable.[51] A product that fails to conform to the expectations of a consumer is defective regardless of whether the manufacturer knew or could have known of the risk of harm presented by the product.[52]

At the outset, the obviousness of the risks presented by the game of baseball present a seemingly insurmountable barrier to recovery. It can be

45. Conde v. Velsicol Chem. Corp., 804 F. Supp. 972, 979 (S.D. Ohio 1992).

46. Delaney v. Deere & Co., 999 P.2d 930, 934 (Kan. 2000) (quoting RESTATEMENT (SECOND) OF TORTS § 402A cmt. i (1965)).

47. *Id.*

48. Jennings v. BIC Corp., 181 F.3d 1250, 1255 (11th Cir. 1999); *see also* Campbell v. Gen. Motors Co., 649 P.2d 224, 233 n.6 (Cal. 1982).

49. *Delaney*, 999 P.2d at 944-45.

50. Tabieros v. Clark Equip. Co., 944 P.2d 1279, 1311-12 (Haw. 1997).

51. Green v. Smith & Nephew AHP, Inc., 2001 WI 109, ¶ 70, 629 N.W.2d 727, 750.

52. *Id.*

argued that any baseball player is aware of the general risk of being struck by a batted ball. However, such a narrowly construed conclusion as to the general risk presented by an aluminum bat does not end our inquiry. Whether a plaintiff can recover might depend on whose expectations the court focuses on in the consumer expectations analysis, and how the court characterizes the overall risk.

1. Whose Expectations?

Whether a plaintiff may recover in a consumer expectations jurisdiction will depend on whose expectations the court is focusing upon. When a player is injured, the court might focus on any number of groups. For example, in the aluminum bat context, the court might focus on the expectations of the player who used the bat, the injured player, the parent who purchased the bat, or even a coach who provided the bat for use. Depending on whose expectations are focused upon, the results of a consumer expectations analysis might vary significantly.

If the injury occurred during a youth game, the court may focus on the safety expectations of a child user.[53] In *Insolia v. Philip Morris, Inc.*,[54] the court discussed the merits of framing a consumer expectations analysis from a child's perspective in the proper case:

But suppose there was a product – say, bubble gum – of which children were not only the primary users, but also the primary purchasers, independent of any parental control. It would defy reason to excuse bubble gum manufacturers for bubble-gum-related injuries to children on the grounds that adults who rarely use the product would have appreciated bubble gum's hazards.[55]

Though bubble gum is a much different product than an aluminum bat, the scenario discussed by the Seventh Circuit in *Insolia* is arguably transferable to the aluminum bat context. In youth baseball, it is not the parent that is using the aluminum bat, and it is clearly the child user that faces the risk of injury from the product. It might be fitting, then, to measure the consumer's

53. *See* Williams v. Beechnut Nutrition Corp., 229 Cal. Rptr. 605, 607-08 (Cal. Ct. App. 1986). In *Williams*, the court focused on a child's perspective, stating that "the inherent danger posed by a glass container, while obvious to an adult, is not cognizable by a child Daniel's age." *Id.* at 607; *see also* April A. Caso, Note, *Unreasonably Dangerous Products From a Child's Perspective: A Proposal for a Reasonable Child Consumer Expectation Test*, 20 RUTGERS L.J. 433 (1989). *But see* Todd v. Societe Bic, S.A., 21 F.3d 1402, 1408 (7th Cir. 1994) (refusing to recognize children as the standard to measure consumer expectations), *and* Kelley *ex rel.* Kelley v. Rival Mfg. Co., 704 F. Supp. 1039, 1043 (W.D. Okla. 1989).

54. 216 F.3d 596 (7th Cir. 2000).

55. *Id.* at 600.

expectation from the perspective of a child user. Conducting a consumer expectations analysis from the perspective of the child user would greatly increase a plaintiff's likelihood of recovery. While an adult may appreciate the risk of being struck by a batted ball, a child with little experience in the game might not. In such a scenario, the obvious or known danger rule would not bar a plaintiff from recovering.

A majority of courts conduct the consumer expectations analysis based on adult expectations.[56] However, simply stating that a court should focus on adult expectations is of little help. Again, the question must be asked: Which adult's expectations should be focused upon? The parent who purchased the bat or the coach who allowed the use of the bat?

Even if the court focuses upon the expectations of the parent, an argument can still be made that the parent has an expectation of safety with a baseball bat. A consumer forms an expectation as to the safety of a product at least partly through personal experience.[57] Many parents would likely have some sort of expectation of safety based on their own experiences with baseball bats. Because high-powered aluminum bats are a relatively recent invention, a parent's own experience would probably be based on a wooden bat or a less powerful aluminum bat. A parent might then expect today's aluminum bats to perform similarly. In this instance, it cannot be said that the risk presented by a modern aluminum bat is obvious or generally known.

There is also the potential for the court to apply a heightened standard. Some courts have evaluated the overall risk presented by a product from the perspective of the foreseeable user.[58] In *Lamer v. McKee Industries, Inc.*,[59] a garage door repairman fell to his death when the garage door that he was repairing caused him to lose his balance.[60] In reversing a jury verdict for the manufacturer, the court held that an ordinary consumer in this context was a professional garage door repairman.[61]

In the aluminum bat context, if the injured athlete had played baseball for a significant length of time or at a competitively high level, a court may look to the expectations of an experienced baseball player. If this were the case, the plaintiff would almost certainly be barred from recovery under the obvious danger rule. It can easily be argued that an experienced baseball player would

56. *See Todd*, 21 F.3d at 1408.

57. *See, e.g.*, Alan Calnan, *A Consumer-Use Approach to Products Liability*, 33 U. MEM. L. REV. 755, 768 (2003).

58. *See* Rojas v. Lindsay Mfg. Co., 701 P.2d 210, 212 (Idaho 1985).

59. 721 P.2d 611 (Alaska 1986).

60. *Lamer*, 721 P.2d at 612.

61. *Id.* at 614-15.

be aware of the risk of being struck by a batted ball while in the field of play.

The same issue arises in the case of a bystander being injured. A fact pattern might exist where a bystander watching a game from foul territory is struck by a sharply hit ball. It seems logical then, to evaluate the safety of the aluminum bat from the expectations of the injured bystander. Clearly, the expectations of a bystander who has possibly never even attended or watched a baseball game would be much different than those of the batter or pitcher. However, most courts reject the bystander approach to consumer expectations.[62] The bystander is said to step into the shoes of the product user, and as a result, if the product user cannot recover, neither can the injured bystander.[63] The injured spectator would then be precluded from recovery if the baseball player would have been aware of the obvious risk of being struck by a batted ball.[64]

2. Characterizing the Risk

The outcome of a consumer expectations analysis might also depend on how the court conducting the analysis characterizes the risks. Though a consumer might generally be aware of the risks presented by a product, the consumer might not be aware of the extent of the risks or the extent of the injury created by the risks.[65] In *DeHaan v. Whink Products Co.*, the plaintiff suffered severe chemical burns after a drop of rust stain remover spilled on her leg.[66] Though only a drop of the chemical actually touched the plaintiff's skin, the chemical penetrated the surface of the skin and caused severe

62. *See* Batts v. Tow-Motor Forklift Co., 978 F.2d 1386, 1389-90 (5th Cir. 1992) (holding that bystander could not recover because the danger of operating the forklift was open and obvious to the forklift operator).

63. *See id.* at 1398.

64. The consumer expectations approach to products liability provides little protection for injured bystanders. Some jurisdictions have recognized this limitation and have refused to apply the consumer expectations approach in such circumstances. *See* McLaughlin v. Michelin Tire Corp., 778 P.2d 59 (Wyo. 1989).

65. *See* DeHaan v. Whink Prods. Co., No. 91-C-0014, 1994 U.S. Dist. LEXIS 650, at *12-13 (D. Ill. Jan. 25, 1994) (applying Illinois law); *see also* Bowden *ex rel.* Bowden v. Wal-Mart Stores, Inc., 124 F. Supp. 2d 1228, 1235 (M.D. Ala. 2000) (holding that obvious and open danger only precludes recovery when the consumer knows both the risk and the extent of the risk); Texas v. Am. Tobacco Co., 14 F. Supp. 2d 956, 966 (E.D. Tex. 1997) (finding that manufacturers of tobacco products suppressed safety information so that consumers were unaware of the extent of the dangers of smoking); Frantz v. Brunswick, 866 F. Supp. 527, 534 (S.D. Ala. 1994); Ewen v. McLean Trucking Co., 706 P.2d 929, 934 (Or. 1985) (discussing the "extent of risk an ordinary consumer would contemplate when purchasing a product").

66. *DeHaan*, 1994 U.S. Dist. LEXIS 650, at *2.

injury.[67] The manufacturer sought summary judgment, arguing that because the plaintiff routinely used the product and was wearing rubber gloves at the time of use, the plaintiff was generally aware of the risk created by the product.[68] In denying summary judgment, the court held, "the issue is not just whether the consumer was aware of a danger, but also whether the consumer was aware of the extent of the danger."[69]

Thus, a lawyer could argue that a plaintiff might have been aware of the general risk of injury inherent in the game of baseball but unaware of the increased risk created by technologically advanced bats. Specifically, while a player might be generally aware of being struck by a baseball and being superficially injured, the player might be unaware of the possibility that a line drive off of a technologically enhanced aluminum bat has the potential to shatter a human skull or break a human jaw. Such an argument, if accepted by the court, would overcome the obvious or readily known danger hurdle that would otherwise preclude the issue from reaching a jury.[70]

3. Proving Consumer Expectations

Lastly, the injured plaintiff must prove that the ordinary consumer has an expectation of safety in the product. Some jurisdictions allow consumer expectations to be proven by either direct or circumstantial evidence.[71] In Virginia, a plaintiff may prove consumer expectations through "evidence of actual industry practices, knowledge at the time of other injuries, knowledge of dangers, the existence of published literature, and from direct evidence of what reasonable purchasers considered defective."[72] Many states focus largely on the marketing of the product. For example, in the Oregon case of *McCathern v. Toyota Motor Corp.*,[73] the manufacturer argued that the plaintiff had not sufficiently proven consumer expectations because the plaintiff

> submitted no poll, no study, no psychological profile of the average person's expectation, and no other evidence about the ordinary consumer's expectations regarding rollovers generally or rollovers in circumstances as severe as those that occurred in this accident. Plaintiff also submitted no statement ever published to consumers by

67. *Id.*

68. *Id.* at *10-11.

69. *Id.* at *13.

70. *See Bowden*, 124 F. Supp. 2d at 1228.

71. Tunnell v. Ford Motor Co., 330 F. Supp. 2d 707, 715 (W.D. Va. 2004).

72. *Id.* (quoting Sexton *ex rel.* Sexton v. Bell Helmets, Inc., 926 F.2d 331, 337 (4th Cir. 1991)).

73. 985 P.2d 804 (Or. Ct. App. 1999).

> any vehicle manufacturer, any government official or agency, any safety researcher, any automotive analyst, any scientist, any engineer, or any other person on the face of the earth, telling consumers that any utility vehicle ever made could not be made to roll over on flat, dry pavement or would not be likely to roll over if subjected to a series of extreme, abrupt steering maneuvers.[74]

The court rejected the manufacturer's position and, instead, recognized that a plaintiff's proof of consumer expectation is sufficient "if a reasonable juror could find that there is such a relationship between the manufacturer's representations and the circumstances of the product's nonperformance that a reasonable consumer would have believed that the product could perform safely under those circumstances."[75] Focusing on the commercial advertisements and brochures of the manufacturer, including print and television advertisements submitted by the plaintiff, the court held that the above standard was satisfied.[76]

Thus, the type of evidence sufficient to prove consumer expectations varies from jurisdiction to jurisdiction. Without question, simply having an injured plaintiff testify as to his or her personal expectation of safety might not be enough to establish an overall consumer expectation of safety in the product. However, evidence of the manufacturer's commercial advertising is clearly sufficient. Aluminum bat manufacturers advertise their products in such a way that creates an expectation of safety. Aluminum bats are advertised to appear on par with wooden bats. Thus, the increased risk of aluminum bats is not made clear. In most jurisdictions, such advertising and commercial brochures would likely be sufficient evidence to prove a consumer expectation.

In conclusion, even if a plaintiff can establish an expectation of safety in the product, the outcome of a suit in a consumer expectations jurisdiction is largely unclear. It depends on how the court characterizes the risk and whose perspective from which the court chooses to view the circumstances. These potentially anomalous results have led to the consumer expectations approach being subject to much criticism in recent years. Many commentators have spoken out against the inconsistent and varying outcomes that often result from the consumer expectations test.[77] In fact, many courts have refused to

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74. *Id.* at 817-18.

75. *Id.* at 818.

76. *Id.* at 819.

77. *See, e.g.*, William Powers, Jr., *A Modest Proposal to Abandon Strict Products Liability*, 1991 U. ILL. L. REV. 639, 653-54 (1991); Jerry J. Phillips, *Products Liability: Obviousness of Danger Revisited*, 15 IND. L. REV. 797 (1982).

employ the consumer expectations test as the sole test of defect in design defect cases[78] or use consumer expectations only in cases of manufacturing defects.[79] Thus, those jurisdictions that rely solely on the consumer expectations approach have become the minority.[80]

### *B. Risk/Utility With Hindsight*

As a response to the unsatisfying results of the consumer expectations approach, many courts have adopted a risk/utility with hindsight balancing test. As noted above, section 402(a) of the RESTATEMENT (SECOND) OF TORTS provides that a product is defectively designed if it is "dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it."[81] However, as opposed to the consumer-based approach, courts have construed this section from the perspective of the reasonable seller.[82] The court presumes that a seller acting reasonably would not sell the product if he or she was aware of the risks created by the product.[83] Thus, the consumer expectations approach and the risk/utility with hindsight standard are simply two different methods of asking the same question.[84] However, as will be seen, some products that are defectively designed under a risk/utility standard may not be defective under a consumer expectations approach and vice-versa.

The issue of whether a product is defectively designed then becomes a

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78. California only applies the consumer expectations approach in those cases where the common experiences of consumers could reasonably lead to some sort of expectation on how the product will perform. Soule v. Gen. Motors Corp., 882 P.2d 298, 307-08 (Cal. 1994). Ohio employs a similar approach, allowing a plaintiff to prove design defect under either a risk/utility standard or consumer expectations test. *See* OHIO REV. CODE ANN. § 2307.75 (West 2001); *In re* Meridia Prod. Liab. Litig., 328 F. Supp. 2d 791, 815 (N.D. Ohio 2004). Washington also applies a hybrid approach allowing a plaintiff to prove defective design under either a risk/utility approach or consumer expectations test. *See* WASH. REV. CODE ANN. § 7.72.030 (West 1992).

79. The RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY rejects the consumer expectations test for design defects, yet retains it for those cases of alleged manufacturing defects. RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY, § 2 (1998). Jurisdictions such as Iowa and Texas have adopted this approach. *See* Wright v. Brooke Group Ltd., 652 N.W.2d 159, 167 (Iowa 2002); Parsons v. Ford Motor Co., 85 S.W.3d 323, 330 (Tex. App. 2002).

80. Connecticut, Kansas, New Hampshire, Wisconsin, Oklahoma and Oregon still subscribe to the traditional consumer expectations approach. *See* Potter v. Chicago Pneumatic Tool Co., 694 A.2d 1319, 1330-31 (Conn. 1997); Delaney v. Deere & Co., 999 P.2d 930, 934 (Kan. 2000); Vautour v. Body Masters Sports Indus., Inc., 784 A.2d 1178, 1181-82 (N.H. 2001); Green v. Smith & Nephew AHP, Inc., 2001 WI 109, ¶¶ 29-32, 629 N.W.2d 727, 739-40.

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

82. Phillips v. Kimwood Mach. Co., 525 P.2d 1033, 1036-37 (Or. 1974).

83. *Id.* at 1037.

84. *Id.*

risk/utility balancing test with hindsight. At first glance, this test appears very similar to the basic standard for negligence. However, the hindsight requirement is the key difference between products liability and negligence. While negligence requires that risks be foreseeable, products liability assumes that the manufacturer of the product was aware of the risk at the time of marketing.[85] Even a manufacturer's justifiable ignorance of the generic risks created by a product will not excuse liability.[86]

In a risk/utility with hindsight jurisdiction, the question becomes this: Had the manufacturer been aware of the risk created by the product, would a reasonable manufacturer still have sold the product? Depending on the answer to this question, a product may or may not be defectively designed. A court focuses on a variety of factors in conducting the risk/utility analysis. Though not an exhaustive list, these factors include the following: (1) the gravity of the danger presented by the product; (2) the likelihood that the danger would result in injury; (3) the feasibility of a safer alternative design; (4) the financial cost of an improved design on the manufacturer; and (5) the adverse consequences to the product and to the consumer from the alternative design.[87]

Many courts consider the gravity of danger presented by a product. While serious injury from an aluminum bat might occur only relatively rarely, the gravity of the injury is potentially severe.[88] Studies have shown that, on average, balls hit by aluminum bats travel at speeds ten percent faster than balls hit by wooden bats.[89] In fact, baseball players have been killed by line drives off of aluminum bats and, in some cases, have suffered permanent brain damage.[90] The pitcher is clearly vulnerable to a sharply hit ball.[91] The NCAA

85. Dart v. Wiebe Mfg., Inc., 709 P.2d 876, 881 (Ariz. 1985); *see also* Carballo-Rodriguez v. Clark Equip. Co., 147 F. Supp. 2d 66, 71 (D.P.R. 2001); Golonka v. Gen. Motors Corp., 65 P.3d 956, 963 (Ariz. Ct. App. 2003); Pike v. Frank G. Hough Co., 467 P.2d 229 (Cal. 1970); Dorsey v. Yoder Co., 331 F. Supp. 753, 759-760 (D. Pa. 1971).

86. *See* Elmore v. Owens-Illinois, Inc., 673 S.W.2d 434, 438 (Mo. 1984). However, a minority of courts will excuse a manufacturer's ignorance of generic risks. Even in those jurisdictions where knowledge of generic risks is not defensible, risks that are scientifically unknowable are treated much differently.

87. *Barker*, 573 P.2d at 455.

88. Barry Boden, Robin Tacchetti & Fred O. Mueller, *Catastrophic Injuries in High School and College Baseball Players*, 32 AM. J. SPORTS MED. 1189, 1190-93 (2004). Though only forty-one severe injuries were reported to the National Center for Catastrophic Injury during the period of 1998 to 2002, *id.* at 1190, fourteen cases involved a pitcher being hit by a batted ball, with all fourteen pitchers suffering serious head and/or facial injuries. *Id.* at 1193. "In eleven of the fourteen accidents, the ball was hit by a player using an aluminum bat." *Id.* In the other three instances, the type of bat used was unavailable. *Id.* Three players "who were not pitching, were injured after being hit by a batted ball." *Id.*

89. SHERWOOD, *supra* note 5, at 9.

90. Press Release, *At-Bat: The Safety of Our Kids and One Councilman's Fight to Ban Aluminum*

has concluded that a college pitcher needs at least 0.39 to 0.40 seconds to deflect or avoid a batted ball.[92] In *Sanchez v. Hillerich & Bradsby*,[93] the ball was struck so sharply that the injured pitcher was allowed only 0.335 to 0.342 seconds to avoid injury.[94] The gravity of the danger presented by aluminum bats should not be underestimated merely because serious injuries occur only infrequently.

Another common factor a court would likely weigh is the likelihood or frequency of harm. Injury from a batted ball off an aluminum bat is, for the most part, unlikely.[95] A 2004 study of catastrophic injuries to high school and college baseball players revealed that from 1982 to 2002, only forty-one instances of baseball injuries were reported to the National Center for Catastrophic Sports Injuries.[96] This amounted to only 1.95 direct catastrophic injuries per year and only 0.43 injuries per 100,000 participants.[97] An analysis of this factor weighs strongly in the favor of the bat manufacturer and presents a compelling argument against a finding of product defect.

Though at first glance the infrequency of injury from aluminum bats seems compelling, this position fails to withstand further scrutiny. An in-depth investigation of aluminum bat injuries reveals that such injuries have increased since technologically enhanced bats were initially made available on the market.[98] Further, if a product presents an unreasonable risk to the

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*and Bring Back Wood* (Mar. 25, 2002), http://www.nyssf.org/baseballbats.html. The press release provides a sampling of injuries and deaths that have resulted from aluminum bats:

> Fifteen-year-old hit above the temple batted by a 5'10", 140 lb. boy, which resulted in a skull fracture, bleeding in the brain, and numbness on the left side; Pitcher hit by ball, underwent surgery to place 11 metal plates and 22 screws in his head; Seventeen-year-old hit in the temple, brain dead, dies; Fourteen-year-old hit in the temple, dies; High school pitcher hit over the ear, brain bruise/temporary hearing loss; ended season and prospective collegiate athletic career; Sixteen-year-old second baseman struck in chest, suffered sudden cardiac arrest, regained consciousness two days later; Fourteen-year-old Anthony Ricci, took a line drive to the face resulting in his teeth being knocked out, a wired jaw and forty stitches to the face.

*Id.* (internal citations omitted) (emphasis omitted).

91. Boden, *supra* note 88, at 1194 (noting that pitchers were specifically at risk of being struck with a batted ball).

92. Sanchez v. Hillerich & Bradsby Co., 128 Cal. Rptr. 2d 529, 539-40 (Cal. Ct. App. 2002). For a more detailed discussion of the *Sanchez* case, see Amanda M. Winfree, Note, *Increasing the Inherent Risks of Baseball: Liability for Injuries Associated With High-Performance Non-Wood Bats in* Sanchez v. Hillerich & Bradsby Co., 11 VILL. SPORTS & ENT. L.J. 77 (2004).

93. 128 Cal. Rptr. 2d 529 (Cal. Ct. App. 2002).

94. *Id.* at 539.

95. *See* Boden, *supra* note 88, at 1192.

96. *Id.* at 1189.

97. *Id.* at 1192.

98. *See id.* at 1194.

consumer who purchases it, though that risk occurs relatively infrequently, does that make the product less defective? If the injury that results is only minor, this question might be answered in the affirmative. But where a product such as an aluminum bat can possibly cause serious and permanent injury, including death, the infrequency argument is less than satisfying.

A court will also likely consider the feasibility of a safer alternative design. Some courts actually require that evidence of a safer alternative design be proven by a plaintiff at trial.[99] Other courts are more flexible, considering the feasibility of a safer alternative design as simply another factor in the risk/utility analysis.[100] Under either approach, it appears as though a plaintiff would easily satisfy any burden of proving an alternative safer design. Only recently have bat manufacturers used technological advancements to enhance the offensive capabilities of aluminum bats.[101] In fact, studies have shown that aluminum bats manufactured in the 1970s produced less exit velocity and performed more similarly to wooden bats than their modern counterparts.[102]

Courts also consider the financial impact of an improved design on the manufacturer. An analysis of this factor clearly weighs against the manufacturer. In fact, a safer, improved design would likely decrease the cost to aluminum bat manufacturers. While the first aluminum bats were made out of simple, low-grade aluminum alloy developed by the aerospace industry,[103] modern aluminum bats are much more sophisticated. A majority of today's aluminum bats are made from a scandium-aluminum alloy designed to increase the strength and durability of the bat without adding weight.[104] Scandium is a rare mineral that is mined only in the Ukraine.[105] Surely, it would not be more costly for aluminum bat manufacturers to return to less technologically advanced models.

Likely the most important factor in the risk/utility analysis is whether a safer alternative design would impair the utility of the product as a whole. As

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99. *See, e.g.*, Troja v. Black & Decker Mfg. Co., 488 A.2d 516, 519 (Md. Ct. Spec. App. 1985).

100. *See, e.g.*, Kallio v. Ford Motor Co., 407 N.W.2d 92 (Minn. 1987).

101. *See* UNITED STATES GEOLOGICAL SURVEY, *supra* note 13.

102. Russell, *supra* note 2. The results of a 1977 study showed that on average, the average batted ball speed of a line drive off a wooden bat was 88.6 miles per hour and 92.5 miles per hour for an aluminum bat. This relatively minor difference is in stark contrast to the results of more recent studies. *See supra* note 5 and accompanying text.

103. *The History of Bats*, *supra* note 12.

104. UNITED STATES GEOLOGICAL SURVEY, *supra* note 13.

105. Patrick Hruby, *Hitters Like High-Tech Bats, but Critics Smell Foul Play – Controversy Over Aluminum Bats Being Used in College Baseball*, INSIGHT ON THE NEWS, July 26, 1999, http://www.findarticles.com/p/articles/mi_m1571/is_27_15/ai_55283483.

noted above, the utilities of aluminum bats are the reduced cost and increased offensive capability.[106] A more reasonably designed aluminum bat would still maintain these benefits. First, though many aluminum bat supporters argue that limiting the use of aluminum bats will lead to decreased youth participation in baseball, [107] this argument is inherently flawed. Some commentators have argued that aluminum bats make baseball easier to play, which in turn, increases youth interest in the sport.[108] Yet this argument fails to account for the fact that aluminum bats have inherent advantages over wooden bats due to the "trampoline effect" and lower swing weight.[109] Even a more safely designed aluminum bat would have offensive capabilities surpassing those of a wooden bat.

Second, a more safely designed aluminum bat is still a cost-effective alternative to a wooden bat. At a cost of $80 per wooden bat, an unbreakable aluminum bat costing around $250 presents a less costly alternative. Viewed in this light, it can realistically be argued that discontinuing the production of aluminum bats would be much more costly to consumers than relying strictly on wood. But a court, in evaluating a wooden bat, would not be addressing whether aluminum bats should be discontinued altogether, but rather whether such bats can be made safer. A safer aluminum bat retains its utility as a cost-effective alternative to wooden bats.

Overall, in this author's view, a risk/utility with hindsight analysis reveals that the modern, technologically enhanced aluminum bat is defectively designed. The most important aspect of this analysis is the utility of aluminum bats. Aluminum bats were manufactured as a more durable alternative to the easily breakable wooden bat. They were not intended to enhance offensive output, and thus, any attempt to reduce the overall risk of the product while limiting offensive capability does not impair the product as a whole. In fact, a more safely designed aluminum bat would still have an inherent offensive advantage over a wooden bat. Any cost arguments to the contrary are without

106. *See supra* text accompanying notes 34-35.

107. According to Peter Hughes, the head baseball coach at Boston College, if aluminum bats were banned, overall participation would decline due to the decrease in offensive production. Associated Press, *MIAA Gathers Information on Safety of Aluminum Bats*, STANDARD-TIMES (Mass.), Jan. 16, 2003, at B-1, *available at* http://www.s-t.com/daily/01-03/01-16-03/b01sp087.htm; *see also* James Whitters, *Key Vote on Deck for Aluminum Baseball Bats*, BOSTON GLOBE, Nov. 21, 2002, *available at* http://www.amateurbaseballtoday.com/news/article_112102.php. Jerry Miles, the president of the National High School Baseball Coaches Association, argues that "aluminum bats give kids a greater opportunity to succeed because they have a bigger sweet spot . . . . Baseball's like any other sport; if kids do well, their interest is going to increase. If they're struggling and not having fun, and fun usually comes with success, they're not going to want to play." *Id.*

108. Whitters, *supra* note 107.

109. Nathan, *supra* note 15.

merit. We are not asking aluminum bats manufacturers to stop producing the bats altogether but rather to design the bats more safely. A durable, more safely designed aluminum bat is still less costly then an easily breakable wooden bat.

### *C. Risk/Utility With Foresight*

The modern trend, as espoused by the RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY, is to view a product as defectively designed based on a risk/utility with foresight analysis.[110] According to the RESTATEMENT, a product is defectively designed if

> the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a reasonable alternative design by the seller or other distributor, or a predecessor in the commercial chain of distribution, and the omission of the alternative design renders the product not reasonably safe.[111]

Many jurisdictions have adopted this standard for design defect cases.[112] This essay has previously argued that a court conducting a risk/utility with hindsight analysis in the aluminum bat context would most likely conclude that the modern aluminum baseball bat is defectively designed. However, the RESTATEMENT (THIRD) presents two significant hurdles before even reaching the risk/utility analysis: a requirement that the risk of harm presented by the product be foreseeable and a requirement that the plaintiff provide sufficient evidence of a reasonable alternative design.

#### 1. Reasonable Foreseeability

The RESTATEMENT's adoption of a foresight standard is a significant departure from both the traditional consumer expectations approach and the risk/utility with hindsight analysis. The rationale for the foresight standard is found in comment a:

To hold a manufacturer liable for a risk that was not foreseeable when the product was marketed might foster increased manufacturer investment in safety. But such investment by definition would be a matter of guesswork. Furthermore, manufacturers may persuasively ask to be judged by a normative behavior standard to which it is reasonably possible for manufacturers to

110. RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2(b) (1998).

111. *Id.*

112. *See* Wright v. Brooke Group Ltd., 652 N.W.2d 159, 169 (Iowa 2002); *see also* Hernandez v. Tokai Corp., 2 S.W.3d 251, 256 (Tex. 1999).

conform.[113]

The importance of the foresight versus hindsight distinction cannot be overstated. Contrary to the hindsight standard, knowledge of the risk is not imputed on the manufacturer of the product.[114] As a result, if the risk presented by the product is not reasonably foreseeable, then the manufacturer will not be held liable. Viewed from a foresight perspective, the risk/utility test becomes little more than a negligence standard.

A manufacturer of an aluminum bat can easily argue that the risk of injury presented by an aluminum bat is not reasonably foreseeable and thus, the bat is not defectively designed as a matter of law. It is important to remember that the standard is one of only reasonable foreseeability.[115] Because studies have shown that injuries from aluminum bats occur relatively rarely,[116] a manufacturer might argue that the infrequency of injury demonstrates a lack of reasonable foreseeability. A court in a RESTATEMENT (THIRD) jurisdiction might very well be persuaded by such an argument.

However, even the RESTATEMENT (THIRD) recognizes that manufacturer claims of ignorance lack credibility.[117] As stated in comment m of the RESTATEMENT (THIRD),

> In cases involving a claim of design defect in a mechanical product, foreseeability of risk is rarely an issue as a practical matter. Once the plaintiff establishes that the product was put to a reasonably foreseeable use, physical risks of injury are generally known or reasonably knowable by experts in the field. It is not unfair to charge a manufacturer with knowledge of such generally known or knowable risks.[118]

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113. RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2 cmt. a (1998).

114. Under the RESTATEMENT (THIRD), a product is defective only if "the *foreseeable risks* of harm posed by the product could have been reduced or avoided" by the manufacturer of the product. RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2(b) (1998) (emphasis added).

115. *See* Phillips v. Cricket Lighters, 841 A.2d 1000, 1020 (Pa. 2003)

> ([T]he RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY [sic] may be anticipated to provide theories of recovery and systems of proof and defense that neutralize most of the harsh effects of the consumer expectations test and the open and obvious defense. In their stead the Reporters promote exclusive resort to a risk-utility evaluation, fortified by concepts of *reasonable foreseeability*.).

*Id.* (quoting M. Stuart Madden, *Products Liability, Products for Use by Adults, and Injured Children: Back to the Future*, 61 TENN. L. REV. 1205, 1240 (1994) (alteration in original) (emphasis added)).

116. Boden, *supra* note 88, at 1192.

117. RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2 cmt. m. (1998).

118. *Id.*

The RESTATEMENT's acknowledgment of the fairness of the hindsight standard seems inconsistent with the adoption of a foresight standard in design defect cases. However, this acknowledgment occurs only in a comment to the general rule, not in the text of the RESTATEMENT. As a result, courts in RESTATEMENT (THIRD) jurisdictions might still wield foreseeability as a barrier to recovery in design defect cases.

The key task then, from a plaintiff's perspective, is to introduce evidence establishing that the risks presented by aluminum bats are indeed foreseeable. How can a plaintiff establish that the risk of injury presented by an aluminum bat is foreseeable? First, evidence that the manufacturer was aware of the risk yet disregarded it would be important in rebutting the lack of foreseeability argument. For example, in *Sanchez*, the plaintiff introduced a declaration by a former employee of Hillerich & Bradsby specifically stating that the employee informed management of the bat manufacturer of the risk presented by aluminum bats.[119]

Second, a plaintiff could point to studies conducted by medical groups addressing injuries sustained as a result of playing baseball, specifically citing injuries caused by aluminum bats.[120] However, such evidence might do more to support the manufacturer's claim of lack of foreseeability rather than detract from it.

Third, an injured plaintiff might point to various studies showing that aluminum bats contribute to increased exit speed of batted balls.[121] While such evidence does not conclusively demonstrate the knowledge of the manufacturer, it is reasonable to assume that a manufacturer is aware of the capabilities of the product it manufactures.

2. Reasonable Alternative Design

The requirement that a plaintiff establish evidence of a reasonable alternative design also presents a heightened standard.[122] Even if the risk of harm presented by a product is reasonably foreseeable, an injured plaintiff might not recover unless the risk "could have been reduced or avoided by the adoption of a reasonable alternative design."[123] Though at first glance this

119. Def.'s Reply to Opp'n to Mot. for Summ. J., Sanchez v. Hillerich & Bradsby, No. BC226656 (Los Angeles County Super. Ct.) (on file with author). Though plaintiffs introduced the declaration in this case in support of their application for punitive damages, the same evidence would also likely rebut any argument of unforeseeability set forth by a manufacturer.

120. *See* Boden, *supra* note 88, at 1193.

121. *See supra* note 5 and accompanying text.

122. *Wright*, 652 N.W.2d at 169.

123. RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2(b) (1998).

burden seems easily satisfied in the aluminum bat context,[124] the requirement of a reasonable alternative design warrants further scrutiny.

Though a safer alternative design may be established, the clear wording of the RESTATEMENT (THIRD) requires that the omission of the alternative design render the product not reasonably safe.[125] Due to the infrequency of injury resulting from aluminum bats, a manufacturer could persuasively argue that the omission of an alternative design does not result in an aluminum bat being unsafe. If only forty-one serious baseball-related injuries were reported from 1982 to 2002, and only eleven of those cases involved injuries from aluminum bats, [126] the manufacturer's failure to utilize a safer design might be excusable. Such an argument might be persuasive in a RESTATEMENT (THIRD) jurisdiction. Thus, regardless of whether an injured plaintiff can prove that an aluminum bat can be designed more safely, a court could reasonably conclude that, based on the infrequency of injury, the lack of a safer design still does not render an aluminum bat defective.

In sum, the likelihood that a plaintiff will recover from the manufacturer of an aluminum bat in a RESTATEMENT (THIRD) jurisdiction is significantly decreased. The harsh results of the RESTATEMENT (THIRD) are not confined merely to injuries resulting from aluminum bats. In fact, many commentators have assailed the RESTATEMENT (THIRD) as a step back in terms of effectuating the policy considerations for why strict products liability was adopted in the first place.[127] All controversy aside, the foreseeability standard combined with the necessity of a reasonably safer design presents a substantial barrier that possibly limits a plaintiff's ability to recover.

## V. MANUFACTURER DEFENSES AND OTHER ISSUES PRECLUDING LIABILITY

### *A. Assumption of the Risk*

As noted above, whether a plaintiff can recover on a products liability claim in the aluminum bat context depends on the type of jurisdiction in which

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124. *See* Russell, *supra* note 2. Studies have shown that early aluminum bats produce less exit velocity than modern aluminum bats. *Id.*

125. RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2(b) (1998). Though evidence of a reasonably safer alternative design is required, the product is defective only if the "omission of the alternative design renders the product not reasonably safe." *Id.*

126. *See* Boden, *supra* note 88, at 1189, 1194.

127. *See, e.g.*, Note, *Just What You'd Expect: Professor Henderson's Redesign of Products Liability*, 111 HARV. L. REV. 2366 (1998); Patrick Lavelle, Comment, *Crashing Into Proof of a Reasonable Alternative Design: The Fallacy of the Restatement (Third): Products Liability*, 38 DUQ. L. REV. 1059 (2000).

the claim is brought. However, a plaintiff's likelihood of recovery may also depend on the defenses raised by the manufacturer. Probably the most common defense raised by the manufacturer in the aluminum bat context is that of assumption of the risk.

Assumption of the risk involves the plaintiff "voluntarily and unreasonably proceeding to encounter a known danger."[128] In some jurisdictions, the affirmative defense of assumption of the risk is a complete bar to recovery in products liability.[129] However, some courts distinguish between primary assumption of the risk and secondary assumption of the risk. In these jurisdictions, while a primary assumption of the risk acts as a complete bar to recovery, secondary assumption of the risk does not act as a complete bar and, instead, allows the court to apportion the relative fault of the defendant and plaintiff and award damages accordingly.[130]

Clearly, the assumption of the risk doctrine applies in competitive sports, including baseball.[131] The court in *Balthazor v. Little League Baseball, Inc.*[132] recognized as much, holding that the risk of injury from being struck by a baseball is an inherent risk in the sport.[133]

However, though the sport of baseball does present inherent risks, a manufacturer nevertheless maintains the responsibility of not enhancing those risks. This was the position advanced by the plaintiff in *Sanchez*.[134] In *Sanchez*, the court recognized that "[a] defendant owes no duty of care to protect a plaintiff against risks inherent in a particular sport . . . . But the defendant [still] owes a duty to participants not to increase the risk of harm over and above that [danger] inherent in the sport."[135] The court concluded that because evidence showed that the aluminum bat in question was specifically designed to cause the ball to come off the bat at a higher rate of speed, the plaintiff had raised a triable issue of material fact with which to proceed to trial.[136]

Other jurisdictions have abolished the assumption of the risk doctrine.[137]

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128. RESTATEMENT (SECOND) OF TORTS § 402A cmt. n (1965).

129. Bowling v. Heil Co., 511 N.E.2d 373, 377-78 (Ohio 1987).

130. Schneider *ex rel.* Schneider v. Erickson, 654 N.W.2d 144, 148 (Minn. Ct. App. 2002); *see also* Li v. Yellow Cab Co. of Cal., 532 P.2d 1226, 1232 (Cal. 1975).

131. *See* Susan M. Gilles, *From Baseball Parks to the Public Arena: Assumption of the Risk in Tort Law and Constitutional Libel Law*, 75 TEMP. L. REV. 231 (2002).

132. 72 Cal. Rptr. 2d 337 (Cal. Ct. App. 1998).

133. *Id.* at 341.

134. *Sanchez*, 128 Cal. Rptr. 2d at 538.

135. *Id.* at 535-36.

136. *Id.* at 538.

137. Oregon has abolished assumption of the risk and is now a comparative fault regime. *See*

Instead, these jurisdictions frame the issue in terms of comparative fault.[138] In such a jurisdiction, the argument that a plaintiff assumed the risk would not preclude recovery in products liability. Instead, the fault of a plaintiff will be apportioned in relation to the overall fault of the manufacturer. In a pure comparative fault jurisdiction, a plaintiff may recover to the extent of the manufacturer's negligence.[139] However, modified comparative fault bars recovery where the plaintiff's own conduct was more negligent than that of the manufacturer.[140] In the aluminum baseball bat context, even if the jurisdiction does not recognize the doctrine of assumption of risk, comparative fault may still diminish overall recovery.

### *B. Causation*

Another issue that a plaintiff might have to overcome in the aluminum bat context is proving causation. Though causation is an element of a plaintiff's prima facie case and, thus, not an affirmative defense that is raised by the defendant, the inability to prove causation results in a plaintiff failing to recover.[141] Courts typically evaluate causation on whether the product was the "but for" cause of a plaintiff's injury.[142] This standard is satisfied if the harm

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OR. REV. STAT. § 31.620 (2003).

138. Oregon's comparative fault statute is codified as OR. REV. STAT. § 31.600 (2003).

139. *See* U.S. Fid. & Guar. Co. v. Preston, 26 S.W.3d 145, 148 (Ky. 2000) (confirming that Kentucky is a pure comparative fault jurisdiction); *see also* City of Chicago v. M/V Morgan, 375 F.3d 563, 575 (7th Cir. 2004) ("Under a pure comparative fault analysis, '[t]he plaintiff's negligence reduces the amount of damages that he can collect, but it is not a defense to liability.'" (alteration in original) (quoting Bhd. Shipping Co. v. St. Paul Fire & Marine Ins. Co., 985 F.2d 323, 325 (7th Cir. 1993))).

140. OR. REV. STAT. § 31.600 (2003) ("Contributory negligence shall not bar recovery in an action by any person or the legal representative of the person to recover damages for death or injury to person or property if the fault attributable to the [person seeking recovery] was not greater than the combined fault of all persons [against whom recovery is sought] . . . .").

141. Though causation is a two-prong inquiry, causation in this instance refers to cause in fact, as opposed to proximate cause. Though both elements of causation must be satisfied, it is likely that the cause in fact aspect will be more important in the aluminum bat context. Proximate cause is an altogether different inquiry. Proximate cause is about "shoulds": Should the defendant be held liable? Should the plaintiff be allowed to recover? Proximate cause imposes three different limits restricting the scope of liability. First, in some jurisdictions, liability will be imposed where the type of harm that occurs is foreseeable. *See, e.g.*, Oehler v. Davis, 298 A.2d 895, 895-96 (Pa. Super. Ct. 1972). Other jurisdictions will allow the plaintiff to recover so long as the manner in which the harm occurred was foreseeable. *See, e.g.*, Baker *ex rel.* Baker v. Int'l Harvester Co., 660 S.W.2d 21, 23 (Mo. Ct. App. 1983). Finally, many courts restrict the class of persons that might recover. *See, e.g.*, Palsgraf v. Long Island R.R., 162 N.E. 99, 100 (N.Y. 1928). Because proximate cause is most likely easily satisfied in the aluminum bat context, this essay will only address cause-in-fact.

142. *See* Skinner v. Square D Co., 516 N.W.2d 475, 479 (Mich. 1994) (applying "but for" test of causation).

suffered by a plaintiff would not have occurred "but for" the defectively designed product.[143] In the aluminum bat context, there are simply too many variables to satisfy the "but for" test. For example, the injury is likely to have occurred as a result of the exit speed of the ball when it left the bat.

Though an aluminum bat plays a significant role in the exit speed of a batted ball, other factors inarguably contribute. Such factors include the speed at which the pitcher throws the ball and the speed at which the batter swings the bat. In situations such as these, where there is more than one contributing factor that might have caused the harm, a court may apply the "substantial factor" test for causation.[144] So long as the defective product was a substantial factor in causing the injury, causation is established.[145] In the aluminum bat context, it is easily established that the aluminum bat played a substantial factor in causing the harm.

Causation was a contested issue in the *Sanchez* case. The trial court in *Sanchez* granted summary judgment to the aluminum bat manufacturer on the grounds that there was no evidence of causation.[146] Essentially, the manufacturer contended that the plaintiff failed to establish the rate of speed at which the ball left the bat, thus failing to show any causal connection between the increased risk of injury and an aluminum bat.[147]

On appeal, the court did not require such strict proof of causation, seemingly applying a substantial factor approach.[148] The court paid particular heed to the fact that the aluminum bat in question was specifically designed to increase the exit speed and that the plaintiff was indeed hit by a batted ball.[149] The court also emphasized the findings of the kinesiology expert who testified for the plaintiff, despite the manufacturer's contention that the expert did not review videotape of the injury or even examine the plaintiff.[150]

### *C. Compliance With Industry Standards*

Lastly, an aluminum bat manufacturer might argue that because the bat itself complied with NCAA or Little League standards, it cannot be defective

143. *Id.* at 480.

144. Whiteley v. Phillip Morris, Inc., 11 Cal. Rptr. 3d 807, 858 (Cal. Ct. App. 2004) ("In the context of products liability actions, the plaintiff must prove that the defective products supplied by the defendant were a substantial factor in bringing about his or her injury.").

145. *Id.*

146. *Sanchez*, 128 Cal. Rptr. 2d at 534.

147. *Id.* at 538.

148. *Id.* at 538-39.

149. *Id.*

150. *Id.* at 539-40.

as a matter of law. Not all jurisdictions view product compliance with industry standards similarly. Under the RESTATEMENT (THIRD), whether the product was manufactured in accordance with industry standards is relevant in determining whether the product is defective.[151] Many jurisdictions consider product compliance with industry standards similarly.[152] Still other jurisdictions consider industry standards to be irrelevant in products liability actions.[153] Because products liability focuses on the inherent risks of the product, these jurisdictions view compliance with industry standards as a negligence inquiry.[154]

In 1999, the NCAA imposed new standards for aluminum bats. These new standards were adopted in an attempt to have aluminum bats perform similarly to wooden bats.[155] Under the new standards, non-wood bats cannot be more than two and five-eighths inches in diameter, and the difference between the weight of the bat and the length of the bat cannot exceed three units.[156] The standards further require that any non-wood bat have a maximum of a ninety-seven mile per hour batted ball exit velocity.[157]

If the injury occurred in an intercollegiate baseball game, the fact that the aluminum bat was in compliance with NCAA standards might be outcome determinative in a jurisdiction that relies on industry standards in determining defective design. The NCAA standards were imposed so that an aluminum bat would perform similarly to a wooden bat. The basis of a products liability claim against an aluminum bat manufacturer is that aluminum bats are inherently dangerous as compared to wooden bats. The fact that an aluminum bat is compliant with standards intended to ensure that aluminum bats perform similarly to wooden bats undermines this contention.

A plaintiff in this instance would have to rely on evidence that the new bat specification standards are flawed. First, new studies have shown that there is

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151. RESTATEMENT (THIRD) TORTS: PRODUCTS LIABILITY § 16 cmt. b (1998).

152. GTE Corp. v. Allendale Mut. Ins. Co., 372 F.3d 598, 609-10 (3d Cir. 2004) (industry standards may be relevant in determining whether a product is defectively designed); *see also* Moore *ex rel.* Moore v. Miss. Valley Gas Co., 863 So.2d 43, 46 (Miss. 2003).

153. McCoy v. Whirlpool Corp., No. 02-2064-KHV, 2003 U.S. Dist. LEXIS 11712, at *24 (D. Kan. July 8, 2003) ("A manufacturer's compliance with industry standards is irrelevant, however, in a strict products liability case where the determinative question is whether a product is unreasonably dangerous."); *see also* Fidalgo v. Columbus McKinnon Corp., 775 N.E.2d 803, 809 (Mass. App. Ct. 2002).

154. *Id.*

155. *Baseball Group OKs Status Quo On Bat Standards*, NCAA NEWS, July 31, 2000, *available at* http://www.ncaa.org/news/2000/20000731/active/3716n04.html.

156. News Release, NCAA, NCAA Executive Committee Approves Bat Standards (Sept. 28, 1999), http://www.ncaa.org/releases/miscellaneous/1999/1999092801ms.htm.

157. *Id.*

a potential loophole in the standards dealing with the diameter and height/weight ratio of non-wood bats. By placing the center of gravity closer to the handle of the bat, a bat may be swung faster while still satisfying the required standards.[158]

Second, the method in which the NCAA tests exit velocity has also been criticized. The NCAA Rules Committee initially recommended that a bat be swung at eighty miles per hour in determining exit speed.[159] The Committee further recommended that non-wood bats maintain an exit speed of not more than ninety-four miles per hour.[160] The NCAA instead adopted a maximum exit speed of ninety-seven miles per hour, and this determination was made on a wood bat swung only sixty-seven miles per hour.[161] An injured plaintiff, then, has ample opportunity to attack the credibility of the NCAA standards.

## VI. CONCLUSION

This essay has addressed the likelihood of recovery on a products liability claim for defective design against the manufacturer of an aluminum bat. Though outcomes inevitably vary, it is likely that an injured plaintiff would recover in either a consumer expectations or a risk/utility with hindsight jurisdiction. Under the consumer expectations approach, depending on whose expectations are focused upon and how the court characterizes the risk, the ordinary consumer arguably has an expectation of safety in the performance of an aluminum bat.

Similarly, in a risk/utility with hindsight jurisdiction, a court will likely weigh more heavily the gravity of the risk and the manufacturer's ability to design the product more safely than the infrequency of injury. However, the likelihood of recovery in a risk/utility with foresight jurisdiction is significantly lessened. The burden of proving both the foreseeability of the harm and a reasonable alternative design might effectively preclude damages for injuries suffered from an aluminum bat.

These varied outcomes represent the current state of products liability design defect law. However, consumers may protect themselves by fully investigating the safety of products that they purchase. Unfortunately, unbeknownst to the average player, parent, or coach, a technologically enhanced aluminum bat represents a dangerous weapon in the hands of

158. Kay Hawes, *Baseball Bat Standards Return to the Examination Table*, NCAA NEWS, Apr. 10, 2000, *available at* http://www.ncaa.org/news/2000/20000410/active/3708n01.html.

159. Eric Adelson, *Bat Controversy Lingers Over NCAA*, ESPN THE MAGAZINE EXTRA, Mar. 29, 2000, *available at* http://www.espn.go.com/gen/s/2000/0329/453294.html.

160. *Id.*

161. *Id.*

amateur baseball players. Educating consumers reduces this danger. Inarguably, sports have inherent risks that players are exposed to simply by participating. Realizing this, a manufacturer of sporting goods, in this case aluminum bats, should not increase that risk through defectively designed products.