When Legislative Regulation Strikes Out: Proving a Products Liability Case against Metal Baseball Bat Manufacturers

Jessica J. Penkal
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I. INTRODUCTION

In June 1994, a line drive hit a sixteen-year-old second baseman, rendering him comatose for two days. In April 1997, a high school baseball pitcher's career ended when he was hit in the head by a batted baseball and suffered a contusion and temporary hearing loss. In May 1998, a batted ball struck another young pitcher, requiring his skull be put back together with eleven metal plates. A few weeks later, a fifteen-year-old player was hit in the temple, resulting in a skull fracture and bleeding in the brain. That same summer, two more teenagers died from brain injuries as a result of being hit in the head by batted baseballs. In April 1999, a college baseball pitcher was struck in the head by a line

* J.D. 2006, The University of Montana School of Law. With thanks to Professor J. Martin Burke for his guidance this year, and to former Montana Supreme Court Justice Jim Regnier who, like the many adjunct faculty of the University of Montana School of Law, is so willing to share his invaluable experience.

2. Id.
3. Id.
4. Id.
5. Id.
drive and suffered a serious head injury.\textsuperscript{6} In June 2001, a fourteen-year-old ball player was hit in the face with a line drive. He was fortunate to suffer only broken teeth, a broken jaw, and forty stitches to his face.\textsuperscript{7} All of these injuries were a result of balls being hit off of metal baseball bats.

In July 2003, the hit was a little closer to home. Brandon Patch, an eighteen-year-old American Legion pitcher for the Miles City Mavericks, was killed when a Helena Senators player, swinging a metal bat, struck the ball and sent it straight back to Brandon’s head, striking him in the temple.\textsuperscript{8} The list of injuries goes on. In August 2004 in Utah, a seventeen-year-old high school player was killed when, during batting practice, his teammate hit a line drive that struck him in the neck, rupturing his carotid artery.\textsuperscript{9} A Northern Illinois University baseball pitcher was hit in the head with a line drive from a metal bat in March 2005, but he is another lucky one and looks forward to rejoining his team this spring.\textsuperscript{10} In June 2005, another Montana pitcher was hit in the head during warm-up for the Laurel Dodgers, an American Legion team.\textsuperscript{11} The fourteen year-old spent more than a month in the hospital recovering from a fractured skull and ruptured temple.\textsuperscript{12}

A battle between metal bats and wood bats has waged since the introduction of metal bats into the game of baseball. Propponents of metal bats cite cost and performance as the benefits of metal bats. Traditionalists want to return to wood bats for the sake of the game’s integrity. Others argue for a return to wood bats for the safety of the players. Wood bat proponents have attempted to regulate bats at several levels: within the leagues, at the federal level, and through state legislatures. Part II of this comment explores the history of metal baseball bats and the science behind what makes them unsafe; Part III discusses the possible levels of regulation and what approach to regulation has

\begin{itemize}
  \item \textsuperscript{6} Sanchez v. Hillerich & Bradsby Co., 128 Cal. Rptr. 2d 529, 531 (2002).
  \item \textsuperscript{7} Press Release, N.Y. City Council, supra note 1.
  \item \textsuperscript{8} Miles City Legion Player Killed by Batted Ball, BILLINGS GAZETTE, July 27, 2003, available at http://www.billingsgazette.net/articles/2003/07/27/sports/export115285.txt.
  \item \textsuperscript{9} Ashley Broughton, Teenage Ballplayer Dies After Accident, THE SALT LAKE TRIBUNE, Aug. 29, 2004, at B1.
  \item \textsuperscript{10} Nathan Lindquist, Badgley: Bats Need to Change, NORTHERN STAR, Apr. 20, 2005, available at http://www.star.niu.edu/articles/?id=9626.
  \item \textsuperscript{12} Town Rallies for Injured Teenager, BILLINGS GAZETTE, June 28, 2005, available at http://www.billingsgazette.com/articles/2005/06/02/local/export2131777.txt.
\end{itemize}
worked best so far, if any; and Part IV suggests that in order to see any change, a case will have to be brought directly against the manufacturers of metal baseball bats for manufacturing an unsafe product. Certainly, the deaths and injuries mentioned above warrant further investigation into the safety of metal baseball bats to determine whether baseball bat manufacturers are manufacturing and marketing a defective product, and, if so, how those injured by a baseball hit off of a metal bat can hold the manufacturer strictly liable.

II. THE HISTORY AND SCIENCE OF METAL BASEBALL BATS

The sound of baseball began to change in the early 1970s. Rather than the crack of the wood bat, neighborhood ball fields and sand lots began to ring with the sound of baseballs pinging on hollow metal. Ever since their introduction in the 1970s, metal baseball bats have dominated the market. Most baseball teams and leagues made the switch to metal bats because, while they are more expensive per bat compared to wood bats, they are said to cost less in the long run because they do not break. During the 1980s, most college teams made the switch from wood bats to metal bats. Major League Baseball, however, maintains the tradition of the wooden bat.

It quickly became apparent to baseball players that metal bats outperformed wood bats. A study done in 1977 concluded baseballs hit off metal bats travel 3.85 miles per hour faster than balls coming off wood bats. Balls traveling faster logically meant balls traveling farther.

In addition to increased ball speed and distance, it was apparent metal bats had the advantage over wood bats because they did not break. Not only did this mean avoiding the cost of replacing

13. In this comment, "metal" refers generally to aluminum bats or aluminum alloy bats, but also refers to any nonwood bats made of "metal, aluminum, magnesium, scandium, titanium, carbon fiber, or an alloy or composite of those materials." H.B. 588, 2005 Leg., Reg. Sess. (Mont. 2005).
15. Id. at text accompanying n.12.
16. Id.
17. Id. at text accompanying n.1.
18. Id. at text accompanying nn.5-8.
wood bats, but a ball could be hit off more areas of a metal bat. For example, a player could get a hit off a metal bat from an inside pitch that contacted the bat near the handle, whereas a wood bat would likely break if the ball contacted the same area of the bat’s handle. This also led to more hits in a game. Metal bat opponents argue that these bats have changed the game of baseball to focus on offense, sacrificing the “finer points” of the game. Further, opponents believe metal bats discourage young players from learning correct hitting techniques, hindering their ability to compete as they move up in the leagues.

Over the last thirty years, baseball bat manufacturers have continued to improve the performance of metal bats. Technology advancements in metal alloys have allowed manufacturers to make lighter, stronger bats. A Louisville Slugger model, called the Air Attack, is made of an aluminum alloy that was designed for airplanes, and contains a pressurized air chamber. Some manufacturers are even moving beyond metal. One manufacturer, called Combat, which extols players to “choose your weapon,” is making baseball bats from composite materials consisting of “carbon, glass and Kevlar fibers embedded in a polymer matrix.” Combat’s website advertises the ideal bat design as follows:

[L]ight weight for higher swing speed, bigger hitting surfaces or sweetspots, high stiffness handles to minimize vibrations, and low stiffness (trampoline effect) hitting areas to maximize performance. . . Lighter and variable weights of composite materials provide the design opportunity for lighter bats, differentiated swing weights (Moment of Inertia - MOI’s) for a given weight bat and larger hitting surfaces (longer barrels) which create bigger sweetspots.

A recent study concluded that newer designs of metal baseball bats can produce average ball speeds of up to 7.2 miles per hour.

19. Id. at text accompanying n.4.
22. Id.
23. Id.
24. Id.
26. Id.
In this study, the average speed of a ball coming off a wood bat was 86.1 miles per hour. The average speed coming off the fastest metal bat was 93.3 miles per hour. The fastest batted ball speeds were 101 miles per hour for the wood bat, and 106 miles per hour for the metal bat.

More telling than average or fastest ball exit speeds, however, was the cumulative distributions of the speeds. A skilled player can hit a ball with a wood bat and produce a ball exit speed in excess of 95 miles per hour, but in the study, it was found that this occurred with only 9% of the hits made with wood bats. In comparison, 52% of balls hit with metal bats exited the bat at more than 95 miles per hour. Where only 2% of balls hit with a wood bat exited the bat faster than 100 miles per hour, an astounding 37% of balls hit off the fastest metal bat exceeded 100 miles per hour. Because the distribution of hits for "metal bats was skewed toward higher batted ball speeds, . . . it was more likely to have a hit approaching the highest batted ball speed for a given metal bat model." Therefore, the effect of playing with metal bats is that players will be put in harm's way substantially more often than when playing with wood bats.

These findings are consistent with a study done by a college baseball coach. In that study, the coach tracked 75 hitters while playing in a wood bat league and compared their statistics to regular season play using metal bats. Playing with wood, the players' collective batting average was .232 and hit one home run every 69 at-bats. In comparison, while playing with metal bats, the players' batting average increased to .344 and hit a home run once every 19 at-bats.

Safety of metal bats became a concern because the higher ball speeds meant that players, especially pitchers, have less time to react to a line drive coming straight back toward them. Based on

28. Crisco et al., supra note 27, at 1678.
29. Id.
30. Id.
31. Id.
32. Id.
33. Id.
34. Greenwald et al., supra note 27, at 248.
35. Hruby, supra note 21.
36. Id.
a study done by a professor of physics from New York University, a safe response time of 0.4 seconds has been adopted by bat manufacturers and the National Collegiate Athletic Association (NCAA). The response time calculated was based on three components: the time it takes the player to perceive the ball coming back at him, the time it takes the player to determine how to react, and the time it takes the player to move. In comparison to the 0.4 seconds allotted to pitchers as a safe response time, studies done on driver reaction times have determined longer reaction times are needed for a person to react. When a driver is alert and expecting the need to brake, the best reaction time possible is 0.70 to 0.75 seconds. When the need to brake is unexpected by the driver, the best reaction time possible increases to 1.5 seconds. Using the 0.4-second reaction time, the fastest ball exit speed that would allow a pitcher the appropriate amount of time to react is 93 miles per hour.

In determining what causes an increase in batted ball speed, two factors were found to be most influential: bat swing speed and barrel efficiency, or what is called the "trampoline effect." Metal bats can be swung faster than wood bats even when the bats are the same weight, or even when the metal bat is heavier than a wood bat. This seemingly incongruous result has been attributed to the difference between the center of mass, or balance point, of metal and wood bats. A wood bat's balance point is always in the same location, regardless of weight, because wood bats are always the same shape and they are solid. In contrast, a metal bat's balance point can be brought in closer to the handle by changing the shape of the bat, and, by doing so, making the bat


38. Brandt, supra note 37, at 3.


40. Id. at 213.

41. Id.

42. See Adelson, supra note 37.

43. Crisco et al., supra note 27, at 1679, 1683.

44. Id. at 1679; Russell, supra note 14, at text accompanying nn.5-8.

45. Russell, supra note 14, at text accompanying nn.5-8; see also Crisco et al., supra note 27, at 1680.
easier to swing. Batters take advantage of this difference by training with wood bats or placing weights on the far end of a metal bat so that during a game, they can swing the metal bat even faster.

The trampoline effect that occurs when balls hit metal bats also increases ball speed. When a ball hits a wood bat, the ball actually compresses to about half its normal diameter and loses most of its energy. When a baseball hits a hollow metal bat, the metal of the bat is actually thought to compress or bend, not only leaving more energy in the ball, but also transferring back some of the energy to the ball when the metal springs back into shape.

A key player in the continual improvement of metal bats in the late 1980s and early 1990s was Jack MacKay. MacKay, originally a pecan farmer, purchased two metal Louisville Slugger brand bats for his son in 1988. When the plastic end caps on the bats fell out, MacKay suggested to Hillerich & Bradsby Co. ("H&B"), the manufacturer of Louisville Slugger baseball bats, a new design for end caps using a different type of plastic. He was subsequently hired by H&B to help design more powerful bats. MacKay worked for H&B for the next nine years designing bats that increased baseball players' performance and made H&B a major player in the metal bat industry, rivaling the other major metal bat manufacturer, Easton. After realizing the potential danger of the more powerful bats, MacKay tried to convince his employer to tune down metal bats, but quit working for H&B in 1997 after his attempts failed.

III. Regulation of Metal Baseball Bats at Various Levels

A. Regulation of Metal Bats by the Leagues

As baseball bat manufacturers produced more powerful bats, baseball leagues saw the need to regulate batted ball speeds. In a

46. Russell, supra note 14, at text accompanying nn.5-8; see also Crisco et al., supra note 27, at 1680.
47. Russell, supra note 14, at text following n.9; see also Crisco et al., supra note 27, at 1683.
48. Russell, supra note 14, at text following n.9.
49. Id.
50. Adelson, supra note 37.
51. Id.
52. Id.
53. Id.
54. Id.
summit to address the issue in July of 1998, the NCAA Rules Committee agreed on limiting batted ball speed to 94 miles per hour. This meant that in order for a manufacturer's bat to be certified for NCAA play, it could not produce ball speeds that exceeded 94 miles per hour. The Rules Committee based its decision on the past research that established it generally takes 0.4 seconds for a pitcher to react to a ball coming from home plate. As stated before, the ball speed matching this reaction time is actually 93 miles per hour, but the NCAA allowed a mile per hour increase for wind variance. Of note, NCAA testing is done with controlled pitch speeds of 66 miles per hour and controlled swing speeds of 70 miles per hour, which do not reflect field conditions like the tests done by Crisco and Greenwald using live batters.

One of the participants at the summit who spoke out against any increase in batted ball speed allowances was Jack MacKay. MacKay suggested that bat manufacturers study the effect that the balance point of a bat has on exiting ball speed. The Rules Committee put together a panel of scientists and engineers to address the issues raised, and while it did not specifically study balance point, it suggested that, due to safety and competition issues, the NCAA should use a standard for bats more equivalent to ball exit speeds of Major League Baseball-quality wood bats. The panel also suggested that balance point should be further tested, and that the testing done on metal bats should use an increased swing speed more equivalent to actual game conditions. In fact, as far back as 1997, the findings of an NCAA Research Program on Bat and Ball Performance suggested that the existing test methodologies used to determine bat performance were "insufficient for predicting ball performance at realistic velocities." The findings of this program also indicated the need to further study the correlation of balance point and swing speed. In an attempt

55. Id.
56. Adelson, supra note 37; Brandt, supra note 37, at 3; Hruby, supra note 21.
57. Adelson, supra note 37.
59. Adelson, supra note 37.
60. Id.
61. Id.
63. Id.
to address balance point, the NCAA adopted a regulation that requires that the bat cannot weigh more than three units less than the length.\textsuperscript{64}

Following the study, Easton sued the NCAA for interfering with its business practices.\textsuperscript{65} In a move it claims was not related to the lawsuit, the NCAA increased the limit on batted ball speed to 97 miles per hour.\textsuperscript{66} These regulations affect more than college players in the NCAA. The American Legion Baseball League has adopted NCAA certified bats as legal for Legion play,\textsuperscript{67} and many high school leagues have done the same.\textsuperscript{68}

Some individual teams are calling for the prohibition of metal bats in American Legion play altogether. This occurred following the death of Brandon Patch, the Miles City player.\textsuperscript{69} The Miles City team started using wood bats after Brandon’s death, and asked that teams playing against it follow suit.\textsuperscript{70} Some teams followed suit by using wood bats even at home play,\textsuperscript{71} and some did not.\textsuperscript{72} The cause of Brandon’s death sparked concern in Florida, where the Department of Florida American Legion Baseball Association unanimously passed a resolution to prohibit the use of metal bats in Legion play in Florida for the safety of the players.\textsuperscript{73}

Other leagues have considered banning metal bats, especially at the high school level. In 2003, the Interscholastic Athletic Association in Massachusetts considered banning metal bats at the high school level.\textsuperscript{74} That league played the 2003 state championships with wooden bats, but never followed through with a ban on

\textsuperscript{64} News Release, NCAA, supra note 58; Hruby, supra note 21.
\textsuperscript{65} Adelson, supra note 37.
\textsuperscript{66} Id.
\textsuperscript{71} Pitcher’s Death, supra note 69.
\textsuperscript{74} Ulman, supra note 68.
metal bats after that.\textsuperscript{75} Recently, the North Dakota High School Activities Association made the switch from metal bats to wooden bats, which will go fully into effect in the fall of 2007.\textsuperscript{76} The Fargo, North Dakota, activities director stated, "It's a safety issue."\textsuperscript{77}

Perhaps in response to the recent deaths and injuries making headlines which raise public awareness of the danger of metal baseball bats, the American Legion's National Baseball Subcommittee revisited the issue and concluded there was "no clear evidence of unreasonable risk of injury" with metal bats.\textsuperscript{78} Despite the lack of clear evidence that these bats are an unreasonable risk of injury, as cited by the American Legion subcommittee, the American Legion "eagerly awaits" the results of an ongoing independent study of this safety issue.\textsuperscript{79} The fact that studies continue in this area indicates no one is satisfied with the "lack of clear evidence," especially in comparison to the real newspaper stories demonstrating clear evidence to the contrary.\textsuperscript{80}

\textbf{B. Federal Regulation}

In April 2000, Jack MacKay filed a petition with the U.S. Consumers Product Safety Commission urging the federal government to require baseball bat manufacturers to produce metal baseball bats that perform like wood bats.\textsuperscript{81} Accompanying his petition were twenty-four notebooks of information in support of regulation, as well as a handwritten letter from the mother of yet another fourteen-year-old boy seriously injured when he was hit in the head by a line drive off a metal bat.\textsuperscript{82} The Commission declined to impose any regulations on the performance of non-wood bats. In a letter dated April 5, 2002, the Commission stated that

\textsuperscript{75} Todd Milles, \textit{Wood Versus Aluminum Bat Debate Continues}, \textit{News Tribune}, May 5, 2005, \url{http://www.thenewstribune.com/sports/columnists/milles/story/4834912p-4442421c.html}. This proposal was initiated after two high school pitchers in Massachusetts were injured by line drives hit off of metal bats in 2001.

\textsuperscript{76} \textit{NDHSAA Votes to Switch to Wood Bats}, \textit{Bismarck Tribune}, June 23, 2005, available at \url{http://www.bismarcktribune.com/articles/2005/06/23/sports/local/spt03.prt}.

\textsuperscript{77} \textit{Id}.

\textsuperscript{78} Press Release, \textit{American Legion Baseball Lets Bat Rule Stand (May 5, 2005)}, available at \url{http://www.calegion.org/html/baseball.html}.

\textsuperscript{79} \textit{Id}.

\textsuperscript{80} See supra notes 1-5, 7-12.

\textsuperscript{81} Letter from J.W. MacKay filing petition at U.S. Consumers Product Safety Counsel (Apr. 11, 2000), in U.S. Consumer Products Safety Comm'n Pet. CP00-1, supra note 37.

\textsuperscript{82} \textit{Id}; Janice K. Landry, Letter in support of petition at U.S. Consumers Product Safety Counsel, (June 6, 2000), available at \url{http://www.cpsc.gov/LIBRARY/FOIA/Foia01/pubcom/baseball.pt1.pdf}.
in order to mandate safety standards, it would have to find that "non-wood bats pose an unreasonable risk of injury and that a mandatory standard is necessary to address that risk."\(^{83}\) Essentially, its conclusion that such a standard was not necessary was based upon a lack of clear data showing an increased risk of injuries from balls batted off metal bats. Therefore, the Commission could not show that metal bats cause an unreasonable risk of injury.\(^{84}\) This conclusion could be due to the fact that batted-ball injuries are underreported.\(^{85}\)

C. State Legislation

Legislators have tried to regulate metal baseball bats at the state level, but this process unfortunately often succumbs to political pressures. In March 2002, the New York City Council discussed a bill that would ban the use of non-wood bats by minors.\(^{86}\) The outcome of this suggested legislation is uncertain, although one author hinted that the legislation was an attempt at grandstanding by council members in an election year.\(^{87}\)

In the 2005 Montana Legislative Session, Representative Gary Matthews from Miles City assisted Brandon Patch's family by introducing House Bill 588, known as the Brandon Patch Baseball Player Protection Act.\(^{88}\) The bill would have banned the use of non-wood bats in league play for players age fifteen and older. Brandon's family and friends testified at the hearing in favor of the legislation, while Jim Jacobson and George Haegle, of the American Legion Baseball League, appeared at the hearing to testify against the bill.\(^{89}\) The bill was defeated in the House Business and Labor Committee with a nine-to-nine vote, straight down party lines.\(^{90}\) However, the Patch family did not leave the legisla-

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84. Id.
86. Press Release, N.Y. City Council, supra note 1.
tive session completely empty-handed. Representative Matthews also introduced House Joint Resolution 19 urging the American Legion to adopt a rule on its own prohibiting the use of non-wood bats in league play. The joint resolution passed both houses and was signed by Governor Schweitzer. Unfortunately, this is a victory in name only as it still leaves any changes up to the American Legion League. According to Representative Matthews, similar legislation has been passed in Minnesota and Florida, and California and Texas are considering similar legislation.

IV. A CASE FOR STRICT PRODUCT LIABILITY AGAINST BASEBALL BAT MANUFACTURERS

Regulation of the performance and use of metal bats, at both league and government levels, has ignited significant controversy and become highly politicized. As seen above, regulations on ball exit speeds off metal bats are increasing rather than decreasing in league play. Attempts by some leagues and teams to ban metal bats have been largely unsuccessful. The fact remains that these high powered metal bats are placed on the market and all consumers, not just leagues and teams, have access to the bats. Further, leagues and legislatures are failing to act in banning the use of metal bats or regulating bat performance. Therefore, responsibility should lie with the manufacturers to produce a safer product, rather than with the major consumers or government to police a dangerous product.

Strict products liability was first adopted in 1963 with Justice Traynor's decision in Greenman v. Yuba Power Products, Inc. Following the Greenman case, the American Law Institute adopted Restatement (Second) of Torts section 402A, addressing strict products liability in tort. Policy reasoning underpins much of the decision to adopt a strict products liability theory that eschews notions of fault. The major policies of compensation and

92. Stuber, supra note 90.
93. Id.
95. See supra text accompanying note 66.
96. 377 P.2d 897 (Cal. 1963).
deterrence would be addressed by requiring the manufacturer to bear the cost of injury. The manufacturer could raise the price of its product to spread the cost of injuries that did occur, but would be motivated to design a better product so it did not have to raise prices too much. By removing fault from the equation, courts award compensation to injured plaintiffs for their injuries without having to prove negligence, and despite the fact that the manufacturer took all possible care in making its product.

Section 402A was adopted by the Montana Supreme Court in 1973 with Brandenburger v. Toyota Motor Sales, USA, Inc. In Brandenburger, the court reiterated the policy reasoning for which strict liability was adopted. Again, the major policies for adoption were compensation and deterrence, as well as the fact that the manufacturer is in the best position to anticipate hazards. Further, "it is in the public interest to place responsibility for injury upon the manufacturer who was responsible for [the product] reaching the market."

A. Design Defect

Section 402A states that a manufacturer may be held strictly liable if it sells a product in a "defective condition unreasonably dangerous." Based on this language, manufacturers have argued that the product must be both defective and unreasonably dangerous. However, the Montana Supreme Court held that this "phrase was not intended as setting forth two requirements, but only one...[This] language creates a vague and imprecise dual test." Therefore, in Montana, "a product is in a defective con-

99. For an analysis of early products liability jurisprudence in Montana, see Tobias & Rossbach, supra note 97.
100. 162 Mont. 506, 513 P.2d 268 (1973).
101. Id. at 514-15, 513 P.2d at 273.
102. Id. at 514, 513 P.2d at 273 (citing Greenman v. Yuba Power Products, Inc., 377 P.2d 897 (Cal. 1963)).
104. See McAlpine, 2000 MT 383, 304 Mont. 31, 16 P.3d 1054.
dition to a user if it is dangerous to an extent beyond that anticipated by the ordinary user.”

In a design defect case, a plaintiff injured by a product is not trying to prove that the product was not “made according to specifications, but [that] the specifications of the manufacturer were in some way defective.” According to Montana’s pattern jury instruction, in a case of design defect, the plaintiff has to prove “the defendant sold the product which at the time of sale was defective in design.”

To help a jury determine whether a product was in a defective condition because of its design, the plaintiff can introduce a reasonable alternative design that existed at the time the product was manufactured. In *Rix v. General Motors Corp.*, the Montana Supreme Court adopted five factors that the jury could consider in determining whether an alternative design should have been used:

1. The likelihood at the time of manufacture that the product would cause the harm suffered by the claimant;
2. The seriousness of that harm;
3. The technological feasibility of manufacturing a product designed so as to have prevented claimant’s harm;
4. The relative costs of producing, distributing, and selling such an alternative design; and
5. The new or additional harms that may result from such an alternative design.

Although the U.S. Consumer Product Safety Commissioner found a lack of clear evidence showing that metal bats are unreasonably dangerous, the complaint against metal baseball bats is that they are over-designed to the extent they are unreasonably dangerous. While young players on the field may understand the risk of being hit by a batted ball, they do not anticipate how much the risk increases with the use of a metal bat. Part of the design defect should be attributed to inadequate testing methods used by the bat manufacturers. For example, the H&B-sponsored study correlating human response times to batted ball speed used

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110. *Id.* at 328, n.2, 723 P.2d at 201, n.2.
111. See supra Part III.B.
a pitching machine rather than players actually batting balls. 112 Similarly, the testing done by the NCAA to determine safe batted ball speeds used a hitting machine with set swing speeds, as well as a pitching machine. 113 These tests did not simulate game conditions because the pitching and swing speeds were slower than the speeds actual players are capable of. Only those tests done by Crisco and Greenwald were carried out using more realistic game conditions by having actual ball players hit the balls. 114

By using the facts surrounding the death of the Montana baseball player, Brandon Patch, as an example of proving a strict products liability case against a metal bat manufacturer, the five factors for determining whether a metal bat manufacturer's product is defective can be considered as follows. 115

1. The Likelihood at the Time of Manufacture that the Product Would Cause the Harm Suffered by the Claimant

As stated, at the time of his death, Brandon was playing for the Miles City American Legion Baseball team. He was pitching to a player using an NCAA-certified bat. 116 According to the certification procedures, the bat should not have produced ball speeds that would return the ball to the pitcher's mound in less than 0.4 seconds, the industry-accepted average reaction time. Based on the studies by Crisco and Greenwald, published between 1997 and 2002, there was a substantial likelihood that a pitcher could be injured by a metal bat such as the one being used by Brandon's opponent. There was a greater than 50% chance that a ball hit by the bat would return at 95 miles per hour or more, and a 37% chance that the ball could come back at 100 miles per hour or more. 117 If the bat was manufactured and placed on the market between 2001 and 2003, the manufacturer had access to this same information, and it would have known that wood bats produce substantially fewer hits at such high speeds. 118 However, even if the bat was placed on the market prior to that time, the manufac-

112. Brandt, supra note 37, at 4.
114. Crisco, supra note 27, at 1676; Greenwald et al., supra note 27, at 242.
115. Brandon Patch's death was a highly publicized event in Montana, and the published facts of this real situation lend themselves to demonstrating a possible products liability case. Montana is a small community, so this tragic event was felt by many. My sympathy goes out to the Patch family.
116. The American Legion, supra note 67.
117. Crisco et al., supra note 27, at 1678.
118. Id.; Greenwald et al., supra note 27.
turer had access to reaction time studies that stated that a player needed at least 0.4 seconds to react, and knew that study methodologies used to determine ball speed were inadequate.\textsuperscript{119} The manufacturer should have also known of the controversy over the safety of metal bats, and the reported number of deaths or injuries caused by metal bats in the last several years.\textsuperscript{120}

2. \textit{The Seriousness of the Harm}

The seriousness of getting hit in the head, neck or chest by a baseball traveling at any speed cannot be underestimated. However, as the speed of the ball increases, the chances of suffering incapacitating or fatal harm are likely to increase. Again, the chances of such an injury occurring are greater with a ball hit by a metal bat than one hit by a wood bat.

3. \textit{The Technological Feasibility of Manufacturing a Product Designed so as to Have Prevented Claimant’s Harm}

The fact that metal baseball bat manufacturers had the knowledge to increase the performance of baseball bats indicates that they also knew how to decrease bat performance. The articles already published point to two reasons for increased performance, bat swing speed and the trampoline effect.\textsuperscript{121} Bat swing speed has been attributed to the location of the balance point.\textsuperscript{122} Although expert testimony would be helpful in this regard, it appears simple solutions would be available: move the balance point away from the handle and fill the bat with a solid composite material. However, rather than just blindly implementing such designs, the bat manufacturer should be required to conduct more testing on its product in order to determine that it is producing a safer product, and such testing should be carried out under conditions more closely related to game conditions.

Another alternative design would be to abandon the use of metal bats altogether and return to wood. In fact, wood bat manufacturers are seeing a rising trend in the use of wood bats because of safety issues, and because major league scouts prefer seeing

\textsuperscript{119} See Brandt, \textit{supra} note 37, at 3; Greenwald et al., \textit{supra} note 27, at 242.
\textsuperscript{120} See Press Release, N.Y. City Council, \textit{supra} note 1.
\textsuperscript{121} Crisco et al., \textit{supra} note 27, at 1679; Greenwald et al., \textit{supra} note 27, at 242.
\textsuperscript{122} Crisco et al., \textit{supra} note 27, at 1679; Greenwald et al., \textit{supra} note 27, at 248.
players hit with wood bats. Further, wood bat manufacturers are debunking the myth that metal bats cost less in the long run – spending $250 on a metal bat is not cheaper than spending $23 on several wood bats because better hitters break fewer bats.

4. The Relative Costs of Producing, Distributing and Selling Such an Alternative Design

A metal bat can be manufactured for about $25, about the same cost as manufacturing a wood bat. Again, expert testimony regarding the costs to the manufacturer of producing, distributing, and selling redesigned bats would be helpful, but common sense tells us there would not be a huge difference. The first alternative design, moving the balance point away from the player, would require increased costs at the production level in making different molds. The cost of producing a filled bat would increase because another component is being introduced. The greater cost should be undertaken in the testing arena. By conducting accurate tests, the manufacturer may actually be able to market its product more successfully. Advertising a safer metal bat would appease traditionalists because performance would be closer to that of wood bats, and it would appease teams that play with metal bats that still cite cost reasons for their reluctance to use wood bats.

5. The New or Additional Harms that May Result from Such an Alternative Design

Tuning down metal bats would not create additional harms for the consumers. Rather, it would remove the increased inherent risk that newly designed high-tech metal bats bring to the game of baseball.

B. Causation

Another element of a design defect is “that the design of the product caused injury to the plaintiff.” The Montana Supreme Court has stated that when an intervening party is involved, the

124. Id.
125. Adelson, supra note 37.
126. MONTANA PATTERN JURY INSTRUCTION 2d No. 7.02 (2003).
plaintiff must prove that the defendant's conduct was a substantial factor in bringing about the injuries complained of. In the case of Brandon's death, the issue is whether the design of the bat was a substantial factor in bringing about his death.

Causation is an issue of proof. The court in Brandenburger adopted the following standard of proof for products liability cases:

The most convincing evidence is an expert's pinpointing the defect and giving his opinion on the precise cause of the accident after a thorough inspection. If an accident sufficiently destroys the product, or the crucial parts, then an expert's opinion on the probabilities that a defect caused the accident would be helpful. If no such opinion is possible, as in the present case, the user's testimony on what happened is another method of proving that the product was defective. If the user is unable to testify, as where the accident killed him or incapacitated him, no other witness was present at the time of the accident, and the product was destroyed, the fact of the accident and the probabilities are all that remain for the party seeking recovery. At this point the plaintiff can attempt to negate the user as the cause and further negate other causes not attributable to the defendant. These kinds of proof introduced alone or cumulatively are evidence which help establish the presence of a defect as the cause of the damage.

To determine whether the baseball bat was a substantial factor in Brandon's death, an expert would have to testify that the bat returned the ball to Brandon at a speed greater than what has been deemed safe in order to provide adequate reaction time. The best evidence to prove this would be a video or audio recording of the incident itself so that the time between the ball coming off the bat and the time it hit Brandon could be measured.

If this information were not available, the bat itself should be available for testing by an expert to determine the performance of the bat. Using a batter of comparable capabilities to the one that hit the ball in Brandon's case, an expert could determine whether a greater percentage of hits came off the bat at excessive speeds, thereby posing a substantially greater danger than a ball player could reasonably anticipate. The expert could then form an opinion that the defect in the bat was a substantial factor in bringing about Brandon's death.

Further, an expert in a field such as kinesiology could use the severity of injuries to determine ball speed when it struck the player’s head. In a California case similar to Brandon’s, a college pitcher was hit by a line drive off a newly designed metal bat manufactured by H&B, the Louisville Slugger Air Attack 2. In *Sanchez v. Hillerich & Bradsby Co.*, the defendant manufacturer argued that the plaintiff could not prove causation because he had no recording of the incident itself, and therefore the speed of the ball leaving the bat could not be established. The plaintiff hired a kinesiologist that relied on the injury pattern, safety criteria established by both the NCAA and the manufacturer, and eye witnesses to determine that the ball that hit Sanchez was traveling between 101 and 108 miles per hour. The appellate court reversed the trial court’s grant of summary judgment in favor of the defendants on this issue and instead held that such evidence was enough to create an issue of fact that should be presented to the jury.

**C. Defenses**

The defenses available to a defendant in a strict products liability case in Montana are misuse and assumption of the risk. The defense of misuse is available to a defendant manufacturer only if the misuse of the product was not reasonably foreseeable. In Brandon’s case, the issue of misuse should not even come up as the bat was being used as intended.

The best defense to a manufacturer of metal baseball bats is assumption of the risk, which H&B raised in *Sanchez*. The *Sanchez* court stated that “[a] risk is inherent in a sport if its elimination (1) would chill vigorous participation in the sport; and (2)
would alter the fundamental nature of the activity." It follows that there is some inherent risks in baseball, not only involving batted and thrown balls, but also in contacting other players or objects on or around the field. It also follows that any player assumes such a risk, and often signs a waiver acknowledging they are aware of risks of injury, which was the case with Sanchez. Sanchez argued, however, that the use of high powered metal baseball bats substantially increased the inherent risk of the game. The court determined this was a fact for the jury to decide.

The Montana Supreme Court discussed assumption of risk in \textit{Krueger v. General Motors Corp.} In \textit{Krueger}, the plaintiff was severely injured when he was caught under his truck as it started to roll after he had disengaged the transfer case. The product defect was that the vehicle with a transfer case like the one the truck was equipped with would roll when the drive shaft was removed. In other vehicles, the wheels would remain locked and prevent the vehicle from rolling even if the drive shaft was removed. The defendant argued that Krueger assumed a risk of being injured when he went under the truck. The court stated, "The standard to be applied is a subjective one, of what the particular plaintiff sees, knows, understands and appreciates." In applying this standard to the facts of \textit{Krueger}, the court held: "In order for GM to assert the defense, Krueger must have had subjective or actual knowledge that the truck would roll. This does not require that he have knowledge of the severity of the injuries he would suffer." In other words, Krueger would have had to know of the actual defect in the product.

Like in \textit{Sanchez}, Brandon's representatives could argue that the use of metal bats in the game would increase the inherent risk of injury, and that he could not reasonably anticipate such a risk. In applying the subjective standard for assumption of the risk, the defendant would have to prove that Brandon had subjective or actual knowledge that the ball would come back at him at a speed

\footnotesize{136. Id. (citations omitted).

137. Id. at 532.

138. Id. at 538.

139. Id.

140. 240 Mont. 266, 783 P.2d 1340 (1989).

141. Id. at 268-71, 783 P.2d at 1342-44.


143. Id. at 277, 783 P.2d at 1347.}
faster than would give him time to react. It does not matter whether Brandon knew that getting hit by a ball would injure him. Such an argument should defeat this defense.

V. CONCLUSION

The damages in Brandon's case are obvious. A young man lost his life and a family lost their son, brother and nephew. A team lost a ball player, and many people lost their friend. Americans are competitive people, demonstrated most frequently in the sports arena. Everyone wants to be the best, and every parent wants to see his or her child compete at the top. Metal and composite baseball bat manufacturers are taking advantage of the competitive spirit of Americans by selling high powered, high tech bats that increase the inherent danger already existing in baseball. Bat manufacturers are making a huge profit off metal bats because they are selling technology and glamour.144

Imposing strict liability upon manufacturers of metal and composite baseball bats in Brandon's case and others like his would demonstrate the policy reasoning for which strict liability was adopted. It would force manufacturers to finally tune down their bats rather than look for ways to make their bats more powerful. They are the only ones in the position to do so. The parents cheering on their children do not anticipate the unreasonably increased harm their children face while on the baseball field with a metal baseball bat. But manufacturers have the knowledge and ability to protect consumers from these unknown dangers by changing bat designs. Rather than making teams and leagues the middle-man in this controversy, manufacturers should step up to the plate and take responsibility for the lethal weapon they are putting on the market.

144. Senator Matthews estimated that the baseball bat industry has gone from a $70 million industry to a $300 to $400 million dollar industry. Hearing on H.R.J. Res. 19 Before the S. Comm. on State Admin., 2005 Leg. Reg. Sess. (Mont., Mar. 21, 2005).