

McALONAN v. TRACY

JAMES McALONAN, Plaintiff-Appellant,

v.

MILDRED F. TRACY, TOYOTA MOTOR CORPORATION and TOYOTA MOTOR SALES, U.S.A., INC., Defendants-Respondents.

No. A-6034-07T2.

Superior Court of New Jersey, Appellate Division.

Argued December 9, 2009.

Decided March 16, 2010.

Mati Jarve argued the cause for appellant (Jarve Kaplan Granato, LLC, and Larry E. Coben (Coben & Associates) of the Arizona bar, admitted pro hac vice, attorneys; Mr. Jarve and Mr. Coben, on the brief).

Law Offices of Stephen E. Gertler, attorneys for respondent Mildred F. Tracy, join in the brief of appellant.

Robert A. Assuncao argued the cause for respondents Toyota Motor Corporation and Toyota Motor Sales, U.S.A., Inc. (Morison, Ansa, Holden, Assuncao & Prough, and Edward A. Gray (Eckert Seamans Cherin & Mellott), attorneys; Mr. Assuncao and Steven F. Gooby, on the brief).

Before Judges Axelrad, Fisher and Sapp-Peterson.

PER CURIAM

On October 24, 2004, plaintiff James McAlonan was the driver of a 2003 Toyota Echo manufactured and sold by defendants Toyota Motor Corporation and Toyota Motor Sales, U.S.A., Inc. (collectively "Toyota"), that collided with a vehicle driven by defendant Mildred F. Tracy. Tragically, plaintiff suffered permanent spinal cord injuries, which rendered him a ventilator-dependent quadriplegic.

Plaintiff filed his complaint in this action, alleging that Tracy negligently operated her vehicle and that his Toyota's airbag system was not crashworthy due to its defective design. He claimed there was a safer alternative design and that Toyota's failure to use a more powerful single-stage airbag or a dual-stage airbag system enhanced his injuries when the impact occurred.

The matter was tried to a jury over the course of eighteen days. At the close of evidence, the trial judge granted plaintiff judgment against Tracy on the negligence and proximate cause issues, but allowed the claims against Toyota to go to a verdict. The jury found in

favor of Toyota. It also awarded damages in the amount of \$30,514,352.25, but found plaintiff was thirty percent negligent because he was not wearing a seatbelt at the time of the collision; as a result, the judge molded the verdict and entered judgment in favor of plaintiff and against Tracy in the amount of \$21,360,046.65.

On appeal, plaintiff asserts that the judge erred in ruling on various in limine motions, evidentiary issues, and in instructing the jury. We find no merit in any of plaintiff's arguments and affirm.

I

The jury heard evidence that on the day in question, plaintiff was driving eastbound on Ellis Mill Road approaching the intersection with Clems Run Road in Harrison Township. He was not wearing a seatbelt. His thirteen-year-old son occupied the front passenger seat.^[1] The speed limit on Ellis Mill Road through the intersection was forty miles per hour, and the corresponding speed limit on Clems Run Road was forty-five mph. Tracy was driving a 1991 Ford Explorer southbound on Clems Run Road. At trial, Tracy admitted she did not see the stop sign at the intersection. As Tracy entered the intersection, she saw plaintiff's Echo approaching from the right and accelerated in an unsuccessful attempt to avoid a collision.

The front left of plaintiff's Echo struck the right passenger side of the Explorer. The initial impact caused the Echo to rotate approximately 270 degrees clockwise, and pushed its front running board downward. As it spun, the Echo slapped its rear corner into the side of the Explorer and eventually came to rest facing northbound on Clems Run Road. The Echo's front airbags deployed.

Plaintiff's reconstruction expert, Robert Caldwell, determined that the vehicles were traveling between thirty-five and forty mph at impact, that the Echo's principal direction of force (PDOF) was twenty to thirty degrees off a direct frontal impact, and that the crash lasted 150 milliseconds, or .15 seconds. He also determined the overall Delta V or change in velocity of plaintiff's vehicle was thirty-three to thirty-six mph.^[2] Thomas Perl, Toyota's reconstruction expert, estimated the Echo's speed at impact as forty-five mph and its initial PDOF as fifteen to thirty degrees; he calculated its Delta V as thirty-three mph. Based on the Echo's Delta V, experts for both parties agreed this was a high severity crash, which Perl compared to the speed achieved when dropping a vehicle to the ground from a height of thirty-six feet. It also was a relatively unusual occurrence because eighty percent of collisions involved a speed change at impact of between fourteen and twenty mph. According to Toyota's biomechanical engineering expert, Dennis Schneider, Ph.D., the average frontal crash has a Delta V of fifteen to sixteen mph.

Experts for both parties also agreed that the angular force of impact caused plaintiff to move forward and to the left. Plaintiff also moved upward towards high structures in the vehicle, such as the header area and A-pillar, in response to the Echo's downward motion towards the pavement due to the "underride" created by the collision. According to

Schneider, the combination of the high Delta V, the Echo's rapid rotation at impact and downward pitch, and the fact that plaintiff was not wearing his seatbelt made "this crash particularly severe and problematic for trying to protect" him.

Plaintiff struck the driver's door with his left side and hit his head on the top of the A-pillar at its juncture with the front windshield and sun visor. While the impact stopped the motion of plaintiff's head, his torso continued to move forward and left, forcing a downward compression of the neck. This torso augmentation "loading" of the cervical spine created the mechanism for the fractures in plaintiff's neck. According to defense experts Perl and Schneider, plaintiff's torso augmentation injury occurred within 150 milliseconds of the initial impact, with Perl testifying that it occurred within the first seventy to eighty milliseconds.

Plaintiff sustained serious and permanent injuries that included a linear fracture through C5, a "burst fracture" of C6, a wedge compression fracture at the C6/C7 level, and bleeding inside the spinal cord from levels C3 to C7. He also suffered a scalp laceration, rib fractures, and an abrasion on his right knee.

At the time of the accident, plaintiff was forty-one years old. The spinal injuries rendered him a ventilator-dependent quadriplegic. He lost all function of his legs and most function of his arms except for areas around the shoulder and elbow joints. Plaintiff also developed pulmonary complications, bone and bladder infections, and the permanent loss of bladder and bowel control. As a result, plaintiff was unable to perform any tasks, and required constant supervision and care. He communicated by forming words with his mouth; the ventilator prevented speech.

Plaintiff entered a nursing home in July 2006 in an unsuccessful attempt to get off the ventilator. In December 2006, he went to live with his then eighty-year-old mother who became his primary caregiver. At the time of trial, he was receiving home nursing care and regular visits from family members.

Plaintiff briefly testified at trial. Although incapable of being heard, plaintiff responded to questions by nodding his head. He did not testify about the accident or his injuries, and there was no cross-examination. A day-in-the-life video was shown to the jury.

We were advised at oral argument that plaintiff passed away during the pendency of this appeal.

II

Plaintiff's appeal for the most part seeks our review of various evidentiary rulings made by the trial judge either by way of her disposition of in limine motions or in her rulings during trial. Specifically, plaintiff contends that the judge erred: (a) by refusing to exclude evidence regarding Toyota's compliance with federal regulations and industry standards; (b) by refusing to apply the consumer expectations test; (c) by refusing to exclude a defense expert's opinions regarding allegedly contradictory information

obtained from the Toyota Echo's event data recorder (EDR); (d) by refusing to exclude evidence of Toyota's compliance with industry practices and customs; (e) by refusing to exclude evidence regarding plaintiff's comparative fault; (f) by refusing to exclude evidence regarding Toyota's conduct; (g) by refusing to exclude generalized statistics; (h) by refusing to exclude Toyota's litigation sled test; (i) by refusing to exclude cumulative testimony; (j) by refusing to exclude Toyota's response to the National Highway Traffic Safety Administration's proposed rulemaking; (k) by preventing plaintiff from showing to the jury a video of a sled test; (l) by preventing plaintiff's expert from presenting testimony and other evidence regarding the airbag system in the Honda Civic; (m) by preventing plaintiff's attorney from arguing in his closing statement about a specific percentage of increased inflation power; and (n) by allowing Toyota to elicit testimony regarding the risks and benefits of the airbag system in plaintiff's vehicle.

A. Toyota's Compliance With Federal Regulations And Industry Standards

Plaintiff argues that the judge erred by denying his motion to exclude evidence of the Echo's compliance with federal or voluntary safety standards, claiming this evidence was not relevant because the federal standards allowed Toyota to test the Echo's airbag system without recreating the actual conditions of his accident. For example, plaintiff argues that the federal standards allowed Toyota to measure the performance of the Echo's airbag system using a sled, i.e., a small portion of a vehicle, in a twenty-five mph full frontal impact with a dummy occupant in the fiftieth percentile.^[3] Plaintiff also argues that evidence of Toyota's "compliance testing" was not relevant in light of our products liability laws. We reject these arguments on both procedural and substantive grounds.

First, the record reveals that prior to trial, the judge ruled that plaintiff's in limine motion on this point was premature and could not be resolved until the issues had further developed at trial.^[4] Accordingly, the judge entered an order denying the motion without prejudice. Plaintiff does not argue on appeal that he renewed this motion at trial, thus presenting a basis for our rejection of the argument on procedural grounds.

Second, on its merits, we find no error in the admission of this evidence. All relevant evidence is admissible "[e]xcept as otherwise provided in [the court rules] or by law." N.J.R.E. 402. Relevant evidence has "a tendency in reason to prove or disprove any fact of consequence to the determination of the action." N.J.R.E. 401. As a result, the inquiry focuses on whether there is a logical connection between the proffered evidence and the issues in question. Furst v. Einstein Moomjy, Inc., 182 N.J. 1, 15 (2004); JS Props., L.L.C. v. Brown & Filson, Inc., 389 N.J. Super. 542, 554 (App. Div. 2006). A logical connection exists "when `the thing sought to be established is more logical with the evidence than without it.'" JS Props., supra, 389 N.J. Super. at 554 (quoting State v. Hutchins, 241 N.J. Super. 353, 358 (App. Div. 1990)). A court, however, may exclude relevant evidence if "its probative value is substantially outweighed by the risk of (a) undue prejudice, confusion of issues, or misleading the jury or (b) undue delay, waste of time, or needless presentation of cumulative evidence." N.J.R.E. 403. A trial court's discretion in excluding evidence pursuant to N.J.R.E. 403 is broad, and its decision will

not be overturned on appeal absent a palpable abuse of discretion that results in a manifest denial of justice. Verdicchio v. Ricca, 179 N.J. 1, 34 (2004); Green v. N.J. Mfrs. Ins. Co., 160 N.J. 480, 492 (1999); Dinter v. Sears, Roebuck & Co., 252 N.J. Super. 84, 92 (App. Div. 1991).

The National Traffic and Motor Vehicle Safety Act of 1966 (the Act), as amended, 49 U.S.C.A. §§ 30101 to 30170, authorized the Secretary of Transportation to prescribe motor vehicle safety standards, and carry out needed safety research and development. 49 U.S.C.A. § 30101. The Act defined "motor vehicle safety" as "the performance of a motor vehicle or motor vehicle equipment in a way that protects the public against unreasonable risk of accidents occurring because of the design, construction, or performance of a motor vehicle, and against unreasonable risk of death or injury in an accident." 49 U.S.C.A. § 30102(a)(8). A "motor vehicle safety standard" was the "minimum standard for motor vehicle or motor vehicle equipment performance." 49 U.S.C.A. § 30102(a)(9). The Act created the National Highway Traffic Safety Administration (NHTSA) to promulgate these standards. 49 U.S.C.A. § 30101.

When prescribing a safety standard, the Act obligates the Secretary to consider relevant available motor vehicle safety information, consult with appropriate authorities, consider whether the proposed standard was reasonable, practicable, and appropriate, and determine whether the standard met the goals of reducing traffic accidents and related deaths and injuries. 49 U.S.C.A. § 30111. The Act further required a manufacturer or distributor to certify its compliance with the applicable safety standard. 49 U.S.C.A. § 30115.

Standard No. 208, 49 C.F.R. § 571.208, sets forth the performance requirements for the protection of vehicle occupants in crashes. Its purpose is to reduce the number of deaths and severity of injuries "by specifying vehicle crashworthiness requirements in terms of forces and accelerations measured on anthropomorphic dummies in test crashes, and by specifying equipment requirements for active and passive restraint systems." 49 C.F.R. § 571.208, S2. Crashworthiness refers to "the ability of a motor vehicle to protect its passengers from enhanced injuries after a collision." Poliseno v. Gen. Motors Corp., 328 N.J. Super. 41, 51 (App. Div.), certif. denied, 165 N.J. 138 (2000).

Jeffrey Pearson, Toyota's expert in mechanical engineering, explained that Standard No. 208 initially required vehicles to undergo crash tests at thirty mph into a barrier using unbelted dummies representing fiftieth percentile adult males. These tests usually involved a prototype vehicle, and measured certain injury criteria through the placement of accelerometers in the dummy's head, chest, and femur load cells. However, because airbags that met these standards proved too aggressive and powerful, and caused unnecessary deaths, in March 1997, Standard No. 208 was modified, allowing the use of "sled" tests. The purpose of a sled test was "to allow rapid introduction of redesigned airbags" by permitting cost-effective testing to determine how occupants interacted with different airbag technologies.

Standard No. 208 required passenger vehicles manufactured on or after September 1, 1997, to comply with frontal crash protection requirements "by means of an inflatable restraint system at the driver's and right front passenger's position." 49 C.F.R. § 571.208, S4.1.5.3. To certify compliance with the occupant crash protection requirements, Standard No. 208 required frontal barrier crash tests, 49 C.F.R. § 571.208, S5, or alternative unbelted tests for certain vehicles manufactured before September 1, 2006. 49 C.F.R. § 571.208, S13. The alternative tests used vehicles mounted on a sled at a velocity change approximating thirty mph. Ibid.

In considering the impact of these federal regulations on a suit for personal injuries brought in state court, we recognize that evidence of a manufacturer's compliance with a legislative enactment or safety regulation is admissible, but not conclusive, as to the existence of a design defect. Cepeda v. Cumberland Eng'g Co., 76 N.J. 152, 193 (1978), overruled on other grounds by, Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150 (1979); Jackson v. N.J. Mfrs. Ins. Co., 166 N.J. Super. 448, 462 (App. Div.), certif. denied, 81 N.J. 330 (1979). In this context, however, only the safety standards or regulations in existence at the time of the product's manufacture are admissible. Ladner v. Mercedes-Benz of N. Am., Inc., 266 N.J. Super. 481, 500 (App. Div. 1993), certif. denied, 135 N.J. 302 (1994). "The reason for the rule is that the defect must be determined as of the date the vehicle left the defendant's control." Ibid.

Christopher Caruso, plaintiff's expert in mechanical and electrical engineering, acknowledged in his testimony that: the safety standards in effect in 1999 called for sled tests; ninety-nine percent of all vehicles manufactured in 1999 were sled-certified; the 2000 Echo went into production in 1999; and the sled tests conducted pursuant to Standard No. 208 on the Echo met all the performance criteria. Thus, the original airbag system in the Echo complied with federal safety standards in effect at the time this model first went into production. The evidence also revealed there were no changes in the Echo's single-stage airbag system during its entire production run.

Plaintiff relies on Green v. Gen. Motors Corp., 310 N.J. Super. 507 (App. Div.), certif. denied, 156 N.J. 381 (1998), to argue that evidence of Toyota's compliance with Standard No. 208 was not relevant and, therefore, not admissible. He essentially argues that our products liability laws relieve him of the burden of proving Toyota failed to exercise due care in the design of the Echo's airbag system. In Green, however, we recognized that the "neat temporal lines have been blurred over the years as we have come to realize that a claim for strict liability is akin to a negligence claim in that the central focus is upon the reasonableness of the manufacturer putting the defective product onto the market." Id. at 516.

Ultimately, after careful review, we find no error in the admission of evidence regarding Toyota's compliance with these safety standards. It certainly was relevant to the jury's determination of whether the product was defective when it left Toyota's control and its admission was subject to a discretionary standard not breached here.

B. Consumer Expectations

Plaintiff contends the judge erred by denying his in limine motion to apply the consumer expectations test in determining whether the Echo's airbag was defective. He argues that this test applied because the alleged defect was not complex, and ordinary consumers had certain reasonable expectations about the deployment of airbags in frontal collisions.

The trial judge denied plaintiff's motion to apply the consumer expectation test, but granted his motion to apply the safer design test, explaining:

It seems . . . that the consumer expectation standard would not be applicable here. This is not the type of product — a seatbelt system^[5] is not something that the ordinary consumers can form minimum safety expectations, but rather would require more. I am satisfied, however, that the case has been prepared as an alternative safer design case and that plaintiff may proceed on that basis. As indicated by [Toyota's counsel] some of the seven factors [of risk-utility analysis] are included within that as well.

We find no error in the judge's rulings on this point.

The New Jersey Products Liability Act, N.J.S.A. 2A:58C-1 to -11 (the PLA), provides in pertinent part, that

[a] manufacturer or seller of a product shall be liable in a product liability action only if the claimant proves by a preponderance of the evidence that the product causing the harm was not reasonably fit, suitable or safe for its intended purpose because it . . . was designed in a defective manner.

[N.J.S.A. 2A:58C-2.]

To determine whether a product was defectively designed, "[a] plaintiff must prove either that the product's risks outweighed its utility or that the product could have been designed in an alternative manner so as to minimize or eliminate the risk of harm." Lewis v. Am. Cyanamid Co., 155 N.J. 544, 570 (1998).

A court may at times apply the consumer expectations test to determine whether a product was defectively designed. O'Brien v. Muskin Corp., 94 N.J. 169, 182 (1983). The consumer expectations test applies where "it is self-evident that the product is not reasonably suitable and safe and fails to perform, contrary to the user's reasonable expectation that it would `safely do the jobs for which it was built.'" Suter, supra, 81 N.J. at 170-71 (citation omitted); see also O'Brien, supra, 94 N.J. at 182 (observing that the consumer expectations test "recognizes that the failure of the product to perform safely may be viewed as a violation of the reasonable expectations of the consumer"). A product's design is "self-evidently" defective "when there are no relevant considerations which make the hazard inherent in the product or reasonably necessary to its functioning." Mettinger v. W.W. Lowensten, Inc., 292 N.J. Super. 293, 309 (App. Div. 1996), aff'd as modified on other grounds, 153 N.J. 371 (1998).

Here, there is no evidence to indicate that the Echo's airbag system was self-evidently defective and that the product was unsafe for any foreseeable use. Rather, the expert

testimony reveals it was unlikely an ordinary consumer would know what to expect or how safely an airbag system could be made to perform in all foreseeable situations, including the type of collision at issue here.

C. Evidence Conflicting With the Echo's EDR

Plaintiff next argues that the judge erred by denying his in limine motion to exclude the opinions of Toyota's experts that contradicted the data obtained from the Echo's EDR, claiming these opinions were unreliable and lacked foundation. He argues that the "accident crash investigation community" generally accepted information retrieved from a vehicle's "black box," and that, in Caruso's opinion, post-crash data on the Echo's EDR printout was scientifically reliable. Plaintiff argues the trial judge erred by rejecting Caruso's opinion, excluding evidence from the EDR, and allowing Toyota's experts to introduce testimony inconsistent with the EDR's crash data on change of velocity and airbag deployment, thereby preventing him from proving the accident was not as severe as claimed and the airbag's early deployment was improper.

Prior to trial, the judge first addressed Toyota's related motion for an order precluding plaintiff from offering evidence or testimony regarding the Echo's EDR. After considering the testimony of Mark W. Jakstis, a design and technical analysis manager at Toyota Motor Sales, Caruso's deposition testimony, and an article entitled "Evaluation of Event Data Records in Full System Crash Tests," the judge granted Toyota's motion to preclude plaintiff from offering testimony regarding the EDR. She concluded that this evidence had limited significance and relevance, that it was not critical as each side had retained an accident reconstruction expert, and that the time required to put all the information on the EDR before the jury was not warranted. In reaching her decision, the trial judge relied on the article showing that in thirty-seven laboratory crash tests, none of which used a 2003 Echo, the Delta V recorded by the EDR in nearly all cases was less than the actual Delta V, and a majority of EDRs examined did not record the entire event. The judge also found that, while the laboratory tests indicated the EDRs correctly measured and recorded the driver seatbelt buckle status, the readout from the Echo's EDR did not.^[6]

An EDR contains information about specific crash events or near crash events. Jakstis downloaded the "readout" information from the Echo's EDR. He testified that this readout was the first recovered from a 2003 Echo in a real-world crash and that the readout tool used to download the data was a prototype. He also acknowledged that the data could not be verified unless independently corroborated.

In his affidavit, Jakstis explained that the readout tool had "not been validated as a reliable device to accurately convert the data contained in this EDR to the form presented in the readout report," and that the prototype readout tool report for plaintiff's vehicle contained anomalies. For example, most notably, the printout indicated that, at the time of the crash, plaintiff and his front passenger were belted, even though the parties agreed that plaintiff was unbelted.

An expert's opinion must be based on facts or data "of a type reasonably relied upon by the experts in the particular field in forming opinions or inferences upon the subject." N.J.R.E. 703. While plaintiff argues that "black box data" is generally accepted, he alludes to no evidence that the readout tool used to extract the information from the Echo's EDR was scientifically reliable. Indeed, Caruso admitted at his deposition that he never saw anything from Toyota to suggest that the readout tool was accurate and reliable or that the EDR could accurately record crash data. And he acknowledged there was some question about the readout's accuracy with regard to plaintiff's seatbelt status.

For the same essential reasons, plaintiff seeks a determination that the trial judge should have excluded defense expert opinions that were "unreliable and lacked foundation." We note that plaintiff has failed to identify the experts or opinions he believes should have been excluded. It is not our duty to search the record to substantiate an argument presented in an appellate brief. State v. Hild, 148 N.J. Super. 294, 296 (App. Div. 1977). Notwithstanding, we assume from the underlying motion papers that plaintiff specifically sought to exclude expert testimony offered by Perl and Schneider, including their testimony regarding the Delta V at the time of impact, plaintiff's movement within the vehicle, and the airbag's performance. We are satisfied from our review of the record that these experts properly offered opinions based on their analyses of reliable physical evidence.

We, thus, reject plaintiff's argument that the trial judge abused her discretion in denying plaintiff's in limine motion to exclude the opinions of Toyota's experts, which contradicted the information from the EDR, and in rejecting Caruso's testimony regarding the results obtained from the EDR.

D. Industry Practices And Custom

Plaintiff next argues that the judge erred in denying his pretrial motion to exclude evidence of Toyota's compliance with industry practices and customs. He claims the judge mistakenly permitted the jury to consider evidence that Toyota designed the Echo in a manner very similar to other vehicles at the same time, claiming such evidence was conduct-oriented and not relevant. The judge held this evidence was admissible, but subject to future consideration based upon what might be urged during the trial regarding its relevance and the application of N.J.R.E. 403. As a result, the judge denied the motion without prejudice. Plaintiff does not appear to have raised the issue again.

Putting aside this procedural barrier, we discern that plaintiff appears to argue that the state-of-the-art defense required that the manufacturer prove its product was the very safest of its type that the industry could make at the time, not just that it was built in a manner similar to other vehicles, citing Cavanaugh v. Skil Corp., 164 N.J. 1 (2000). We reject this. Unlike the manufacturer in Cavanaugh, Toyota did not challenge the technological feasibility of the alternative design. Instead, Toyota argues, through Pearson's expert testimony, that plaintiff would not have gained any benefit from a more powerful or a dual-stage airbag because his body moved to the left of the airbag's center

at the time of impact and did not load the airbag directly, resulting in a "substantial reduction" in the airbag's potential benefits.

E. Seatbelt Evidence

Plaintiff also argues that the trial judge erred in denying his pretrial motion to exclude evidence of plaintiff's failure to wear his seatbelt as it related to issues of liability and proximate cause. He argues that the judge impermissibly allowed the jury to consider this conduct by admitting "an array of evidence of seat belt design, seat belt effectiveness, seat belt and air bag effectiveness and injury causation to counter the air bag design defect claim."

The judge ruled that evidence regarding seatbelt usage was certainly admissible regarding damages and, after opening statements, also instructed the jury that seatbelt usage had relevance on design issues, although plaintiff's conduct in not wearing a seatbelt was not relevant:

The issue is whether the front protection system was defectively designed when it left the manufacturer or seller's control. You may consider seat belt and airbag evidence to determine whether a design defect existed.

[Plaintiff's] conduct in not wearing the seat belt is not relevant to the issue of defective design and you may not consider his specific non-use of the seat belt when deciding the issue of defective design. You may, however, consider testimony and evidence on seat belt and airbags, but you may not consider his specific non-use of the seat belt in determining the issue of whether the design was defective when it left the control of the manufacturer and/or seller.

Courts recognize that the use of seatbelts reduces death and injury in automobile accidents. Waterson v. Gen. Motors Corp., 111 N.J. 238, 269-70 (1988). While the failure to wear a seatbelt does not bar recovery in a strict liability action against a manufacturer for defective design, public policy and fairness dictate that a jury may reduce an injured party's damages on the basis of such evidence. Id. at 270. "If a jury finds plaintiff negligent for failure to wear a seat belt, plaintiff's recovery for injuries that could have been avoided by seat-belt use may be reduced by an amount reflecting plaintiff's comparative fault in not wearing a seat belt." Id. at 241. Thus, the trial judge properly admitted evidence of plaintiff's non-use of the seatbelt on the damages issue and correctly instructed the jury before the evidence was introduced that it could not consider plaintiff's conduct in failing to use his seatbelt when evaluating whether the airbag system was defectively designed. In addition, as Toyota correctly urges, evidence concerning seatbelt usage was relevant to inform expert testimony on accident reconstruction, plaintiff's movement inside the vehicle during the crash, the mechanism of his injury, and whether an alternatively designed airbag would have prevented his injury.

The judge did not abuse her discretion in permitting evidence of plaintiff's failure to wear his seatbelt at the time of the crash.

F. Toyota's Conduct

Plaintiff further contends that the trial judge erred in admitting evidence of Toyota's conduct in designing and testing the Echo's airbag. We find no merit in this argument.

"To succeed under a strict liability design-defect theory, a plaintiff must prove `that the product was defective, that the defect existed when the product left the defendant's control, and that the defect caused injury to a reasonably foreseeable user.'" Zaza v. Marquess & Nell, Inc., 144 N.J. 34, 49 (1996). "Generally, the emphasis in strict products liability analysis is on the safety of the product, not on the reasonableness of the manufacturer's conduct." Ibid. Whereas negligence is conduct-oriented, strict liability asks whether the product was reasonably safe for its foreseeable purposes. Beshada v. Johns-Manville Prods. Corp., 90 N.J. 191, 200-01 (1982).

Nonetheless, under the PLA and the common law, the ultimate question in a design-defect case is whether the manufacturer acted in a reasonably prudent manner in designing and fabricating a product. Zaza, supra, 144 N.J. at 49. In Feldman v. Lederle Labs., 97 N.J. 429, 451 (1984), the Court observed:

When the strict liability defect consists of an improper design or warning, reasonableness of the defendant's conduct is a factor in determining liability. . . . The question in strict liability design-defect and warning cases is whether, assuming that the manufacturer knew of the defect in the product, he acted in a reasonably prudent manner in marketing the product or in providing the warnings given. Thus, once the defendant's knowledge of the defect is imputed, strict liability analysis becomes almost identical to negligence analysis in its focus on the reasonableness of the defendant's conduct.

Thus, "reasonableness is central to determining the defendant's liability in a design-defect action." Cavanaugh, supra, 164 N.J. at 8.

Here, plaintiff sought to exclude testimony that Toyota used due care in designing and testing the Echo's airbag, and that the Echo provided a "reasonable level of occupant protection." In particular, he objected to expert testimony that "list[ed] all the outstanding activities pursued by Toyota in the design of its vehicles." That testimony, however, consisted exclusively of Pearson's opinion that the Echo's airbag system design was reasonably safe based on his examination of the vehicle's features and content, and its performance "in a broad range of crash conditions." We conclude that because Pearson's testimony addressed the safety of the product, it was relevant and admissible.

G. Statistical Evidence

During the trial, plaintiff objected to the use of statistical evidence to compare the safety performance of the Echo with other vehicles of the same class and weight, to show death rates for mini and small cars in multi-vehicle and single vehicle accidents, and to compare deceleration rates of different vehicles in crash tests. The trial judge permitted Toyota's expert, Perl, to testify about this statistical data, with the exception of the death

statistics. Following Perl's testimony, the judge admitted several exhibits containing statistical information regarding the rate of adult airbag fatalities by vehicle model and year, and the effectiveness of front airbag systems in rear-end impacts.

The judge found the statistical information admissible, but also instructed the jury that the statistical evidence was offered for "general historic information" on seatbelt and airbag restraint systems, not as evidence concerning the airbag's design. Plaintiff did not object to this limiting instruction, suggesting that counsel did not perceive any error or resulting prejudice, and thereby preventing the judge from remedying any possible or arguable confusion in a timely manner. Bradford v. Kupper Assocs., 283 N.J. Super. 556, 573-74 (App. Div. 1995), certif. denied, 144 N.J. 586 (1996). Indeed, because the record reveals that plaintiff approved of the instruction, we reject his attempt to now argue it was erroneous. See Fox v. Twp. of Parsippany-Troy-Hills, 199 N.J. Super. 82, 89 (App. Div.), certif. denied, 101 N.J. 287 (1985).

Moreover, we find no abuse of discretion in the admission of this statistical evidence. State v. Noel, 157 N.J. 141, 150 (1999). Here, that evidence was relevant and had the capacity to assist the jury in evaluating the Echo's airbag system and in assessing the reasonableness of plaintiff's proposed alternative design.

H. Evidence of Toyota's Sled Test

Plaintiff next contends the trial judge erred by denying his motion to exclude evidence of Toyota's "litigation sled test." He argues this evidence was irrelevant and prejudicial because the dynamics and airbag deployment revealed by the test were not substantially similar to his accident in that the test dummy wore a seatbelt and the sled test crash was significantly more abrupt. Because the test was done "to reproduce this accident," plaintiff argues that these discrepancies between the sled test and the event in question rendered evidence regarding the sled test inadmissible.

The judge initially reserved decision, but noted she was "virtually certain" that she was not going to allow admission of the sled test film. The judge later denied the motion without prejudice, stating it was better to wait until the evidence was offered. Ultimately, however, the judge allowed Toyota to show the jury still photographs made from the film of the sled test, to which plaintiff did not object.

The admissibility of evidence concerning the reconstruction of a particular event falls within the discretion of the trial judge, and depends on whether the experiment sufficiently duplicates the conditions and circumstances of the original event. Persely v. N.J. Transit Bus Operations, 357 N.J. Super. 1, 14 (App. Div.), certif. denied, 177 N.J. 490 (2003); Balian v. Gen. Motors, 121 N.J. Super. 118, 126 (App. Div. 1972), certif. denied, 62 N.J. 195 (1973). Such evidence may be admitted when relevant and probative, provided there is no undue prejudice. Id. at 127. In his testimony, Schneider explained that Toyota's sled test was conducted to demonstrate the benefit of using a lap and shoulder belt in a crash of the same Delta V severity as plaintiff's accident. He explained that "a portion of a Toyota Echo buck," similar in all respects to the one driven by

plaintiff, was mounted on the sled, with a dummy of approximately the same height and weight as plaintiff. The buck was "yawed" (or moved) sixteen degrees, so that the dummy's head would strike the same area inside the car as plaintiff's head, and the car was pitched about three degrees based on Perl's accident reconstruction. The sled test began with the buck stopped and then accelerated to a certain speed. Perl, who established some of the parameters for Toyota's sled test, set the Delta V at thirty-three mph. According to Schneider, the only material discrepancy from plaintiff's accident was that the test dummy was restrained in a seatbelt. However, the point of the test was to reveal the consequences had plaintiff been utilizing the seatbelt system.

There also is no basis for plaintiff to claim undue prejudice or surprise. Plaintiff's counsel did not object at trial to the admission of the still photographs of the sled test, and the sled test film was provided in discovery. Plaintiff also had ample opportunity to cross-examine Schneider on possible discrepancies between the sled test and the actual accident.

The judge did not abuse her discretion by admitting this evidence.

I. Cumulative Evidence

Plaintiff also argues that the trial judge erred in denying his motion to exclude what he refers to as the cumulative testimony offered by Toyota's expert witnesses. He argues that Pearson, Schneider, and Perl offered testimony on the same topics: plaintiff's non-use of the seatbelt; the history and purpose of airbags; vehicle testing and performance; the use of accident and injury statistics to show the severity of the crash; industry standards, customs and practices; and comparisons to "peer" vehicles. Plaintiff argues that this had the potential to mislead and confuse the jury and was, therefore, unduly prejudicial, citing N.J.R.E. 403.

We reject this argument. First, prior to trial, plaintiff withdrew his in limine motion on this point. Having failed to demonstrate on appeal that he later renewed this objection, we may view the argument as abandoned. Second, plaintiff has failed to demonstrate that the judge abused her discretion in admitting this evidence. Verdicchio, *supra*, 179 N.J. at 34.

Indeed, we are not convinced the evidence in question was cumulative. For example, Pearson, a mechanical engineer with expertise in occupant collision protection, relied upon plaintiff's failure to wear his seatbelt as support for his opinion that plaintiff did not load the airbag directly on impact, whereas Schneider, an expert on the biomechanics of impact trauma, used this fact to support his opinion that plaintiff would not have suffered his torso augmentation injury if he had been wearing the seatbelt restraint. Likewise, Pearson testified about the historical development of airbag technology, while Schneider spoke more generally about General Motors' interest over the years in investigating crashes, vehicle performance, and the risk of neck injury.

J. Toyota's Comments to NHTSA

Plaintiff contends the trial judge erred by excluding certain written comments made by Toyota in its response to a supplemental notice of proposed rulemaking for Standard No. 208. He argues that the following comments were admissible as admissions:

Toyota supports NHTSA's proposal for Alternative 1, using a full rigid barrier at a test speed of 25 mph (40 kph) for both the 50% male and 5% female dummy [sic]. In addition we recognize NHTSA's concern for airbag size, therefore we also accept the proposal for testing to be conducted at oblique angles up to and including +/- 30 degrees with the 50% male only.

....

Regarding NHTSA's proposal to return to the 30 mph unbelted test speed, Toyota continues to maintain that a return to the 30 mph unbelted test requirement will require increased inflator power levels in the airbag systems of many vehicles to ensure sufficient margins of compliance for 50% male testing. It follows that since higher test speeds will directly affect the aggressivity of the "high state" levels in dual-stage airbag systems, potentially greater injury risk to small adults and OOP [out-of-position] children will result in real-world crashes.

Plaintiff argues these comments were relevant to prove Toyota did not conduct the testing, which it told the government was required, to prove the Echo's airbag system was defective and caused his injury, and to cross-examine Pearson on his testimony that Toyota's testing methodologies dictated the design of the Echo's airbag. Plaintiff further argues that these comments were not privileged, that the Noerr-Pennington doctrine^[7] does not apply and, even if it did, these comments were admissible because they addressed the very topics at issue in this case.

Plaintiff sought to introduce Toyota's letter to NHTSA, dated December 23, 1999, during the redirect examination of Ted Zinke, plaintiff's expert in mechanical engineering. Toyota's counsel objected, arguing the letter's contents were insulated by the Noerr-Pennington doctrine. The judge barred this evidence, explaining:

I do think the comments made to proposed governmental regulations, just like internal review type of information, is such that you want to encourage them to be state of the art, to expose every possible danger, and to use it in the litigation context, I think, discourages that.

Above and beyond that, it's pretty clear from the evidence so far that everybody knew about these risks.

During Pearson's cross-examination, plaintiff again sought to introduce Toyota's letter. The trial judge again sustained Toyota's objection, stating:

I am of the belief that this type of open communication with the Government is appropriate and that what they are doing is try[ing] to establish even better standards for safety and that it would be chilled if it were to be used in a liability context.

Plaintiff initially argues that the Noerr-Pennington doctrine has no application because the case does not have antitrust implications. That is, this doctrine protects First Amendment rights by affording immunity to those who petition the government for redress. Snyder v. Am. Ass'n of Blood Banks, 144 N.J. 269, 295 (1996); Structure Bldg. Corp. v. Abella, 377 N.J. Super. 467, 471 (App. Div. 2005). Initially, the doctrine's antecedents viewed immunity as an appropriate means to protect commercial interests from antitrust liability when lobbying to influence government. Pennington, *supra*, 381 U.S. at 670, 85 S. Ct. at 1593, 14 L. Ed. 2d at 636; Noerr Motor Freight, Inc., *supra*, 365 U.S. at 135-38, 81 S. Ct. at 528-31, 5 L. Ed. 2d at 470-71; *see also* Snyder, *supra*, 144 N.J. at 295; Fraser v. Bovino, 317 N.J. Super. 23, 37 (App. Div. 1998), *certif. denied*, 160 N.J. 476 (1999). Courts, however, have extended this doctrine beyond claims of antitrust activity. *Id.* at 37-38; Vill. Supermarket, Inc. v. Mayfair Supermarkets, Inc., 269 N.J. Super. 224, 230-31 (Law Div. 1993). "[T]he purpose of Noerr-Pennington as applied in areas outside the antitrust field is the protection of the right to petition. Immunity from liability is necessary so as not to chill the exercise of that right." We, Inc. v. City of Philadelphia, Dep't of Licenses & Inspections, 174 F.3d 322, 327 (3d Cir. 1999). The Noerr-Pennington doctrine also equally applies to efforts to influence the actions of administrative agencies and courts. California Motor Transp. Co. v. Trucking Unlimited, 404 U.S. 508, 510, 92 S. Ct. 609, 611-12, 30 L. Ed. 2d 642, 646 (1972); Santana Prods., Inc. v. Bobrick Washroom Equip., Inc., 401 F.3d 123, 131 n.13 (3d Cir.), *cert. denied*, 546 U.S. 1031, 126 S. Ct. 734, 163 L. Ed. 2d 569 (2005).

We agree that Toyota's comments are protected by the First Amendment right to petition the government for the "redress of grievances." N.J. Const. art. I, para. 18; *see* Senart v. Mobay Chem. Corp., 597 F. Supp. 502, 506 (D. Minn. 1984). Toyota submitted its comments to NHTSA in response to proposed rulemaking. While supporting some of NHTSA's suggestions for testing airbags, Toyota objected to a proposal to return to the thirty mph unbelted speed test, noting it would increase inflator power levels which, in turn, would increase the risk of injury to children and small adults. Because Toyota sought to advocate its position and influence governmental rulemaking, it should be exempt from liability under the Noerr-Pennington doctrine and the First Amendment.

Plaintiff alternatively argues that even if the Noerr-Pennington doctrine applied, Toyota's comments were admissible in light of the following footnote in Pennington:

It would of course still be within the province of the trial judge to admit this evidence, if he deemed it probative and not unduly prejudicial, under the "established judicial rule of evidence that testimony of prior or subsequent transactions, which for some reason are barred from forming the basis for a suit, may nevertheless be introduced if it tends reasonably to show the purpose and character of the particular transactions under scrutiny. . . ."

[Pennington, *supra*, 381 U.S. at 670 n.3, 85 S. Ct. at 1593 n.3, 14 L. Ed. 2d at 636 n.3. (citations omitted).]

Plaintiff, however, did not seek to introduce Toyota's comments to show the "purpose and character" of the activity under scrutiny, but rather to establish Toyota's "awareness of a risk of harm."

For all these reasons, we find no error in the judge's rulings on this point.

K. Sled Test Films

Plaintiff contends the trial judge erred by excluding videotapes of sled tests prepared by his expert to illustrate the forward movement of unbelted test dummies in an Echo with its own airbag system and an Echo with the Corolla's alternatively designed dual-stage airbag system. He argues the ruling was prejudicial because it hampered his ability to persuade the jury that there was an alternative safer design that would have prevented his spinal cord injury.

In ruling against plaintiff, the judge explained that such films can be misleading. However, just as she allowed Toyota to show the jury still photographs taken from the film of its litigation sled test, the judge allowed plaintiff to show still photographs from videotapes prepared by his expert, and to introduce this evidence through expert testimony. A judge's exercise of discretion in such a matter depends on whether the test or experiment sufficiently duplicated the conditions and circumstances of the original event. Persely, *supra*, 357 N.J. Super. at 14; Balian, *supra*, 121 N.J. Super. at 126. As we explained in Persely:

Notably, the danger of undue prejudice as a result of a jury's placing inordinate weight on a motion picture is always present due to the tremendous dramatic impact of motion pictures and the fact that the presentation of a motion picture is generally cumulative to the testimony of the expert who oversaw its production.

[357 N.J. Super. at 15.]

In Persley, the plaintiff argued he was denied a fair trial, in part, because the trial court allowed the defense to show a videotaped simulation of the accident, which he claimed failed to recreate all the variables and left a prejudicial impression on the jury. Id. at 14. We affirmed, holding, among other things, that the video was substantially similar to the subject accident, and was "simple, straight-forward, and not misleading." Id. at 17-18.

In contrast, in Suarez v. Egeland, 330 N.J. Super. 190, 192 (App. Div. 2000), we held that the plaintiff was unduly prejudiced by the introduction of a video simulation of the accident. In that case, the plaintiff sued for damages after allegedly suffering a herniated disc when her vehicle was rear-ended by the defendant's slow-moving vehicle. Id. at 192-93. Liability was admitted and a jury trial was held on damages. Id. at 192. The defendant's expert believed the accident was so minor that it could not have caused the plaintiff's claimed injury, relying on the accident report, deposition testimony, medical records, photos of the defendant's car, and a short videotape played for the jury depicting a crash test showing a dummy being struck at five mph. Id. at 193. The jury found that the plaintiff did not suffer the alleged injuries, and returned a defense verdict. Id. at 192.

We reversed and remanded, holding that admission of the tape was reversible error because, among other things, there were many differences between the test depicted on the video and the actual accident, and the tape was shown only in slow motion. Id. at 193-95.

Regarding plaintiff's sled tests, Zinke testified that the films were designed to show the occupant's forward movement and interaction with the airbag and other parts of the vehicle, and that the still photographs were made from "actual video footage from cameras that were mounted in the vehicle." Zinke then testified about various still photographs taken from the tapes at different time intervals ranging from 25 to 110 milliseconds.

Because the trial judge allowed the jury to see the still photographs and hear expert testimony, anything else that may have been conveyed by the films would have been cumulative and potentially prejudicial. Persely, supra, 357 N.J. Super. at 15. In short, even though the jurors did not view the film, they were given the substance of the relevant and material information which the film contained. See Velazquez v. Jiminez, 336 N.J. Super. 10, 43 (App. Div. 2000), aff'd, 172 N.J. 240 (2002). Thus, no harm resulted from the film's exclusion.

L. Evidence Relating To The Honda Civic

Plaintiff sought to introduce testing results, film, and photographs of the Honda Civic in connection with Zinke's analysis of the performance of comparably-sized vehicles in frontal crash tests with unbelted dummies. Although Zinke did not mention the Civic in his reports, plaintiff contends Toyota had sufficient notice of this allegation because Zinke referred to the Civic at his deposition. Arguing this evidence was vital to demonstrate an alternative safer design for the Echo's airbag system, plaintiff contends its exclusion constituted reversible error. We disagree.

Zinke testified that he looked at the performance of airbag systems in several small-sized vehicles in thirty mph barrier impacts to consider injuries to test dummies. He stated that he considered the 1998 Honda Accord and the 1999 Saturn with single-stage inflation systems, and the 2003 Honda Civic with a dual-stage inflation system. He selected these vehicles because they compared favorably with the Echo in terms of their weight, exterior dimensions from the base of the A-pillars to their front-ends, distances from head to header, and distances from head to windshield. Toyota objected, claiming Zinke's reports failed to mention the Civic. After argument at sidebar, the judge expressed concern that this was Zinke's only reference to the Civic and sustained the objection, explaining:

I have attempted to allow the plaintiff to proceed with some fluidity because of my inexperience in the area and unfamiliarity with it. I think this is just a matter of basic fairness and that they were not fair nor on notice that the Civic would be one of these vehicles for the comparison.

The standard of review for the admissibility of expert testimony is abuse of discretion. Hisenaj v. Kuehner, 194 N.J. 6, 12 (2008). In exercising that discretion, a trial judge may exclude expert testimony that does not fall within the scope of an expert's report. Gaido v. Weiser, 227 N.J. Super. 175, 192 (App. Div. 1988), aff'd, 115 N.J. 310 (1989). The application of the sanction to exclude expert testimony, however, is subject to what is just and reasonable. Ibid. Factors which would "strongly urge" the trial judge to allow such testimony are: (1) the absence of a design to mislead; (2) the absence of the element of surprise if the evidence is admitted; and (3) the absence of prejudice which would result from the admission of the evidence. Ibid.

In his preliminary report, Zinke stated that "[c]ertainly there are examples of post-1997 vehicles with reduced output inflators that do not exhibit head contact with the header or windshield for the 50th percentile male crash dummies." Zinke, however, reviewed crash tests only for the 2001 Echo and 1999 Saturn. At his deposition, Zinke explained he had searched the NHTSA database for a list of 1998 through 2004 vehicles involved in thirty mph unbelted barrier crash tests. He then examined those vehicles where the unbelted dummy did not strike any interior surfaces. When asked to identify the vehicles in which a test dummy did make contact, Zinke mentioned the Civic, stating:

I think I looked at . . . the 2002 Honda Civic and that one [was] a little questionable. It may have [an] indication that the dummy is just barely starting to hit something within the interior. It's questionable, because as I remember the trace on that, there's a little bit of up-and-down movement on the head trace right towards the end of the interaction with the air bag [sic].

In response to deposition questions and requests for additional information, Zinke submitted a supplemental report, which identified several vehicles with "significantly better crash protection compared to the Echo," including the 1998 Camry, 1998 Accord, 1999 Acura RL, and 1999 Saturn SL1.

In light of these facts, we agree that Zinke did not disclose his intention to rely on evidence from the Civic crash test to support his opinions. He had ample opportunity after his deposition to address the Civic's crash test results in his supplemental report, but did not. Moreover, based on Zinke's statement at his deposition that he reviewed only those vehicles where the dummies did not strike interior surfaces, it was reasonable to conclude that he did not intend to incorporate the crash test results for the Civic where such contact was questionable.

We also find no abuse of discretion in the judge's refusal to adjourn the trial so Toyota could depose Zinke on this particular issue.

M. Caruso's Testimony Regarding Inflation Power

Plaintiff next contends the trial judge erred by ruling he could not refer in summation to Caruso's testimony that the Echo's airbag should have included twenty percent more inflation power. He argues that Caruso was qualified and competent to offer this

testimony. Toyota argues that Caruso's suggestion that a twenty percent more powerful airbag was a design alternative to the Echo was a "wholly unsupported" net opinion, presented for the first time at trial and that neither of plaintiff's airbag experts, Caruso or Zinke, mentioned the twenty-percent increase in their reports or at their depositions.

At trial, the judge sustained Toyota's objection to Zinke's testimony that a safer airbag system needed twenty percent more pressure, given his failure to previously disclose this information. The judge later sustained Toyota's objection to plaintiff's proposed use of a power point slide in his summation, which declared, among other things: "Increase in peak pressure by 20 percent and no evidence of adverse effects." The judge explained:

I think that you are not allowed to argue it. That basically you're stuck with your position that the Corolla or the Saturn or the Acura — the Accord, that their systems are suitable, acceptable. It's pretty clear the first time we ever heard that number was when Mr. Caruso was being crossed and that he does indicate that he would have to test it, that it's just based on his experience that he would estimate that that's about what it would be.

An expert's opinion must be based on "facts or data . . . perceived by or made known to the expert at or before the hearing." N.J.R.E. 703. An opinion that lacks such a foundation and consists of bare conclusions unsupported by factual evidence is inadmissible as a net opinion. Buckelew v. Grossbard, 87 N.J. 512, 524 (1981). The net opinion rule prohibits speculative testimony by requiring an expert to give the "why and wherefore" of his or her opinion, not a mere conclusion. Creanga v. Jardal, 185 N.J. 345, 360 (2005); Kaplan v. Skoloff & Wolfe, P.C., 339 N.J. Super. 97, 102 (App. Div. 2001). Thus, expert testimony in conclusory terms is insufficient to prove the existence of an alternate design. Diluzio-Gulino v. Daimler Chrysler Corp., 385 N.J. Super. 434, 438 (App. Div. 2006).

In his initial report, Caruso offered the opinion that "[t]he dangerous head impact experienced by [plaintiff] would have been significantly minimized or avoided all together [sic] by a fully powered airbag and a timely trigger time." He did not define what he meant by "fully powered," or mention a twenty-percent increase as an alternative design. In his supplemental report, Caruso opined that, if the airbag deployment had been timely, a "full powered airbag" would have provided support for plaintiff's chest and head while slowing down his motion towards the steering wheel and A-pillar/windshield header. He further opined that "[a]n alternative system design which was both financially and technologically feasible in the timeframe when [the Echo] was being developed would have been a dual-stage or multi-level airbag inflator design coupled with single or dual threshold crash sensing." Caruso did not quantify the increased pressure needed for a "full powered" airbag.

Caruso's testimony regarding a twenty-percent increase in inflation was certainly something new. At his deposition, he was unable to give specifics:

Q: [F]or this alternative dual level air bag, have you decided upon what the pressure of the bag should be in the first stage and second stage or what the rate of rise should be in either stage?

A: At this point, that's something that I probably will defer in maybe some joint conference calls with Mr. Zinke.

Q: Okay.

A. I can tell him what I'm trying to achieve. He's the guy that's going to have to tell me what kind of pressure that would be.

Q: Because you're not a bag guy?

A: I'm not specifically a bag guy when it comes to those levels of details.

As a result, when Toyota's counsel expressed concern at trial that plaintiff had not specified the pressure of the proposed "more powerful" airbag, plaintiff's counsel advised the court that Zinke would "talk specifically about the power issue," and Caruso would testify about a "systems approach," not airbag pressure. And, when asked on direct examination to address the specifications of the alternative airbag design, Caruso replied, "I have not personally reviewed the specific system that you would put in its place, but I've had experience with many different types of systems that would have provided more pressure in this type of situation." He explained that Zinke would testify about this issue.

On cross-examination, however, Caruso reiterated that a more powerful airbag would have altered the outcome for plaintiff in this accident, explaining: "I could estimate a 20 percent increase in peak pressure but I don't have any way to do that testing to verify what the optimal condition would be. That would take testing." When asked on redirect to explain the basis of his estimate, Caruso replied, "you need to test. You really can't just make a judgment. I'm estimating based on experience that it would probably take about a 20 percent increase but that would take some testing to validate that type of opinion."

While Zinke offered the opinion that a more highly pressurized airbag would have better controlled plaintiff's forward movement, he also did not quantify the airbag pressure in his expert reports. Moreover, at his deposition, Zinke stated that he could not give specific numbers for the level of pressure and rise-rate in a dual-stage airbag system that would have prevented plaintiff from striking his head on the A-pillar. Although the judge did not allow plaintiff's counsel to refer during summation to the twenty-percent testimony, she agreed to include the following question on the verdict sheet: "Has the plaintiff . . . proven by a preponderance of the evidence that the airbag system of the 2003 Echo was defective in design in that it did not possess a more powerful airbag system."

We agree with Toyota's argument that Caruso's testimony about the twenty-percent increase was not based on facts or data, or another expert's opinion. When asked to explain the basis for his opinion, Caruso admitted the figure was only an estimate and that it required testing for validation. Moreover, there is no evidence in the record that Zinke proposed the twenty-percent figure. Because this opinion lacked a sufficient foundation and was speculative, the trial judge sustained the objection to exclude any reference to it during closing arguments, but continued to permit plaintiff to argue in a more general way regarding inflation power. The judge's rulings were sound.

N. Safer Alternative Design

Plaintiff contends the judge erred by allowing Toyota to argue the benefits and risks of the Echo's airbag, when this case was a safer alternative design case. He argues that the judge erred by permitting Toyota to cross-examine his experts on the risks and benefits of more powerful airbags, on the Echo's airbag, and on airbags and seatbelts in general. These arguments have no merit.

As already noted, the judge ruled that the case could proceed to the jury on the theory of safer alternative design, noting that it included some of the factors of the risk-utility test. A risk-utility analysis is appropriate when a product functions satisfactorily under one set of circumstances, but its design presents an undue risk of injury to the user in another situation. O'Brien, supra, 94 N.J. at 181-82. It encompasses factors relevant to both the usefulness and safety of the particular product. Johansen v. Makita U.S.A., Inc., 128 N.J. 86, 96 (1992).

The assessment of a design's utility also involves consideration of available alternatives. O'Brien, supra, 94 N.J. at 184. If a safer and equally efficacious design is available, justification for using a challenged design diminishes. Ibid. Thus, under a risk-utility analysis, "[a] plaintiff must prove either that the product's risks outweighed its utility or that the product could have been designed in an alternative manner so as to minimize or eliminate the risk of harm." Lewis, supra, 155 N.J. at 570. "Plaintiffs who assert that the product could have been designed more safely must prove under a risk-utility analysis the existence of an alternative design that is both practical and feasible," and safer. Id. at 571; Diluzio-Gulino, supra, 385 N.J. Super. at 439.

To prove a safer alternative design, a plaintiff must present expert testimony, substantiated by empirical data, that "the number of lives saved (or injuries avoided) by adopting [an] alternative design[] would be greater than the corresponding number of lives lost (or injuries sustained) as a result of such adoption." Id. at 438-39 (quoting Crespo v. Chrysler Corp., 75 F. Supp. 2d 225, 299 (S.D.N.Y. 1999)). Thus, the reasonable safer design test is a limited risk-utility balancing of costs and benefits. See Model Jury Charge (Civil), supra, 5.40D-3 (comments). Given that the safer alternative design standard requires consideration of risk-utility factors, the judge did not abuse his discretion in allowing Toyota to cross-examine plaintiff's witnesses on the risks and benefits of more and less powerful airbags or on the Echo's airbag.

III

Other than his contentions regarding the judge's many evidentiary rulings, plaintiff also argues that the judge gave erroneous jury instructions.

Before addressing plaintiff's specific arguments, we must first acknowledge that a proper jury charge is essential for a fair trial. Reynolds v. Gonzalez, 172 N.J. 266, 288 (2002); Navarro v. George Koch & Sons, Inc., 211 N.J. Super. 558, 570 (App. Div.), certif. denied, 107 N.J. 48 (1986). "Jury charges 'must outline the function of the jury, set forth

the issues, correctly state the applicable law in understandable language, and plainly spell out how the jury should apply the legal principles to the facts as it may find them. . . ." Reynolds, supra, 172 N.J. at 289 (quoting Velazquez v. Portadin, 163 N.J. 677, 688 (2000)).

"When the court's charge, considered as a whole, presents the law fairly and clearly to the jury, there is no ground for reversing the judgment, though some of the expressions, when standing alone, might be regarded as erroneous." Gaido, supra, 227 N.J. Super. at 186. A court, however, commits reversible error by failing to tailor a charge to the given facts of a case where a different outcome might have prevailed if the jury had been correctly charged. Reynolds, supra, 172 N.J. at 289. In products liability cases, the court must be particularly careful to tailor the instructions to the factual situation to assist the jury in performing its function. Navarro, supra, 211 N.J. Super. at 571.

Here, plaintiff argues that the judge gave erroneous instructions regarding (a) his failure to wear a seatbelt; (b) Toyota's compliance with industry practices and customs; and (c) the reasonableness of Toyota's conduct. We reject these arguments.

A. Seatbelt Issues

Plaintiff's argument regarding the sufficiency of the jury instructions concerning his failure to wear an available seatbelt at the time of the accident essentially reprises his arguments regarding the evidence issues that related to this same fact. For the reasons previously expressed, we reject this argument. To the extent plaintiff's argument regarding the jury charge on this point is more expansive than that, we find insufficient merit in those additional arguments to warrant discussion in a written opinion. R. 2:11-3(e)(1)(E).

B. Industry Practice and Customs

Plaintiff argues that the trial judge erred in failing to advise the jury that evidence of compliance with industry practices and customs is not determinative of whether a product is defective. As with the argument addressed immediately above, plaintiff again raises the same arguments he posed in addressing the evidentiary rulings in this area. For the same reasons, we reject these arguments. These instructions, in the context of the overall charge, were entirely proper and provided accurate and sufficient guidance for the jury.

C. Toyota's Conduct

Lastly, plaintiff contends the judge erred by refusing his request to instruct the jury that it could find the product design defective even if Toyota had acted with reasonable care, and by charging the jury that it could consider the reasonableness of Toyota's conduct. He also contends the judge improperly charged the jury on the risks and benefits of the proposed alternative designs.

As relevant here, the judge instructed the jury as follows:

Specifically, here plaintiff claims that the Echo should have contained a more powerful single threshold or dual threshold airbag system. This is the proposed safer alternative design you must consider. In other words, you can't come up with some other alternative design, you must consider the one presented to you by the plaintiff.

The Toyota defendants, on the other hand, claim that the Echo airbag system as designed was reasonably safe and that the plaintiff has not produced evidence of a reasonably safe design to the Echo. You're to decide whether the benefits from altering the design as proposed by [plaintiff] were greater than the resulting costs or disbenefits [sic] costs by the proposed design, including any diminished usefulness or diminished safety.

Plaintiff's arguments revisit some of the same issues discussed in Section II of this opinion. For example, he argues that the judge erred by allowing the admission of evidence concerning "risk-benefit" and "alternative safer design" theories, and the reasonableness of Toyota's conduct and, therefore, he should not have charged the jury on these issues. To that extent, we reject plaintiff's argument regarding the jury instructions for the same reasons previously discussed.

Plaintiff also argues that the judge erred by refusing to give his requested charge on the safer design test, and instead instructed the jury to decide "whether assuming the Toyota defendants knew the dangers of the Echo they were nevertheless reasonably careful in the manner in which they designed the Echo." This instruction, however, mirrors the instruction for the "reasonable safer design" legal test contained in Model Jury Charge (Civil), supra, 5.40D-3, which uses the same "reasonably careful" language.

Plaintiff argues that the judge compounded this purported error by instructing the jury "to consider the risks and benefits of the Echo and any alternative design in deciding the defect question." As previously observed, the law recognizes that reasonable safer design cases involve some risk-utility analyses. See Diluzio-Gulino, supra, 385 N.J. Super. at 438. And, once again, the charge mirrored the Model Jury Charge (Civil), supra, 5.40D-3. We, thus, conclude that the judge properly instructed the jury to consider whether plaintiff produced evidence of a reasonably safer design, and if the benefits from altering the design as proposed by plaintiff were greater than the resulting costs or disadvantages.

IV

To the extent plaintiff made any arguments on appeal that we have not expressly addressed, we find they are of insufficient merit to warrant discussion in a written opinion. R. 2:11-3(e)(1)(E).

We lastly note that Toyota contends that the judge erred in denying its motion for judgment at the close of plaintiff's case based on plaintiff's safer alternative design theory. In light of our disposition of plaintiff's appeal we need not reach this issue. And, as a result of that disposition, we need not consider whether Toyota's failure to file a cross-appeal represents an abandonment of this contention. State v. Pescatore, 213 N.J. Super. 22, 30 (App. Div. 1986), aff'd, 105 N.J. 441 (1987).

Affirmed.