

ILLINOIS OFFICIAL REPORTS
Appellate Court

<i>Baley v. Federal Signal Corp., 2012 IL App (1st) 093312</i>

Appellate Court Caption	THOMAS E. BALEY, EARL E. BYBEE, EDWARD J. DOHERTY, DONALD J. FREZA, THOMAS J. HOSTY, ROBERT J. O'TOOLE, RICHARD J. REIMER, MAURICIO RODRIGUEZ, and JAMES P. VORIS, Plaintiffs-Appellees, v. FEDERAL SIGNAL CORPORATION, Defendant-Appellant.
District & No.	First District, Fourth Division Docket Nos. 1-09-3312, 1-09-3313, 1-09-3314, 1-09-3315, 1-09-3316, 1-09-3317, 1-09-3318, 1-09-3319, 1-09-3320 cons.
Filed	September 13, 2012
Rehearing denied	February 7, 2013
Held <i>(Note: This syllabus constitutes no part of the opinion of the court but has been prepared by the Reporter of Decisions for the convenience of the reader.)</i>	In a strict product liability design-defect action alleging that the sirens defendant manufactured for emergency vehicles exposed plaintiff firefighters to excessive noise, plaintiffs were not required to present proof of a feasible alternative design before defendant's sirens could be deemed unreasonably dangerous.
Decision Under Review	Appeal from the Circuit Court of Cook County, Nos. 00-L-6486, 00-L- 6487, 00-L-6488, 00-L-6490, 00-L-6494; the Hon. William Haddad, Judge, presiding.
Judgment	Affirmed.

Counsel on Appeal Bartlit, Beck, Herman, Palenchar & Scott, LLP, of Chicago (Philip S. Beck, Jeffrey A. Hall, Sean W. Gallagher, Elizabeth L. Thompson, Carolyn J. Frantz, and Vincent S.J. Buccola, of counsel), for appellant.

Torshen, Slobig, Genden, Dragutinovich & Axel, Ltd. (James K. Genden, of counsel), and Margolis Firm, PC (Jordan Margolis, Todd D. Carcelli, and Ray Lang, of counsel), both of Chicago, for appellees.

Panel JUSTICE PUCINSKI delivered the judgment of the court, with opinion.
Justice Sterba specially concurred, with opinion.
Presiding Justice Lavin dissented, with opinion.

OPINION

¶ 1 The plaintiffs-appellees are nine Chicago firefighters who brought action against the defendant-appellant, Federal Signal Corporation (Federal Signal), claiming that the Federal Signal sirens on Chicago Fire Department trucks are unreasonably dangerous and defective because the sirens exposed the firefighters to excessive noise. Federal Signal supplies sirens to emergency vehicle manufacturers who make and sell vehicles that are designed to meet the Chicago Fire Department specifications and standards. After a two-week trial, the jury returned a verdict for the plaintiffs for a total amount of \$445,000. Federal Signal's motion for judgment notwithstanding the verdict was denied and Federal Signal appealed. Federal Signal argues that the jury's strict product liability verdict cannot stand because: (1) plaintiffs failed to prove a feasible alternative design; (2) the trial court abused its discretion in allowing the testimony of plaintiffs' expert where his opinion about a feasible alternative design was speculative; and (3) the trial court abused its discretion in excluding evidence of the firefighters' ability to avoid the danger, namely, the use of hearing protection in other fire departments outside the city of Chicago.

¶ 2 We affirm the circuit court's denial of defendant's motion for judgment notwithstanding the verdict because we hold that a feasible alternative design is one factor to consider in a strict product liability design-defect case, and there is no rule that public safety devices require proof of a feasible alternative design to be deemed unreasonably dangerous under a strict liability theory. We also hold that the trial court did not abuse its discretion in allowing the testimony of plaintiffs' expert where the expert was qualified and his opinion was regarding a feasible alternative design was based on Federal Signal's own data and there is no requirement that the feasible alternative design actually be built. We further hold that the trial court did not abuse its discretion in excluding evidence of the use of hearing protection in other fire departments, as the court allowed testimony concerning the use of hearing protection within the Chicago Fire Department to demonstrate ability to avoid the danger,

and ultimately Federal Signal had a nondelegable duty to manufacture a product that was not unreasonably dangerous.

¶ 3

BACKGROUND

¶ 4

I. Union Grievance

¶ 5

In 1998, prior to the current litigation, the issue of hearing protection was raised by the firefighters' union in the joint occupational health and safety committee. Afterwards, the Chicago Fire Department asked the Illinois Department of Labor to conduct a study and analyze the Department's noise exposure. The Illinois Department of Labor study determined that the noise exposure was within with the decibel limits required. On April 27, 1999, a letter from the firefighters' union informed its members that it was conducting an investigation into the relationship between noise exposure on the job and subsequent hearing loss. On November 4, 1999, a grievance was filed by the Chicago firefighters union citing that the city of Chicago was not complying with the National Fire Protection Agency (NFPA) 1500 standard, article 7, section 12.2. The grievance cited the city for failure to provide hearing protection, stating that the city is required to "make reasonable provisions in compliance with such laws and regulations for the safety and health of its employees." Specifically, the NFPA 1500 standard requires that a fire department must provide hearing protection for all firefighters on apparatus who are subjected to noise levels above 90 decibels (dB or dBA). The Chicago Fire Department denied the grievance. The firefighters' union did not pursue an arbitration with the Chicago Fire Department regarding the denial of the grievance.

¶ 6

II. Procedural History and Litigation

¶ 7

On April 29, 1999, 27 firefighters filed a complaint against Federal Signal. The initial plaintiffs included Christine Rago, Roger J. Farrell, Michael K. Jazwiec, John F. Nolan, Robert J. Robertson, John W. Schmit, Richard W. Bueschel, Louis W. Aumann, George Bailey, Arnold C. Gacki, Ronald L. Foster, Jose J. Moreno, Henry Jacinto, Jeff Stuecklen, William G. Olson, Jeffrey M. Denis, John G. McGarry, James R. Buckley, Michael L. Bunyon, Richard Ternes, Thomas Fehsel, James Sutera and Donald E. Prazuch.

¶ 8

Plaintiffs' complaint alleged four counts, strict liability, negligence, breach of warranty and class action. In count I, plaintiffs alleged that the sirens were manufactured, marketed distributed and/or sold by Federal Signal in a defective condition that was unreasonably dangerous to the plaintiffs. In count II, plaintiffs alleged that Federal Signal was under a duty to manufacture, market, promote, distribute, sell and install its sirens with ordinary care to avoid inflicting physical harm or injury to the consumers or end users of its products, and that it breached that duty and the damages that resulted were caused by Federal Signal's negligence. In count III, plaintiffs alleged that Federal Signal Corporation warranted that its sirens were without defect and that the plaintiffs relied on said warranty and as a result of Federal Signal Corporation's breach of the implied warranty, the plaintiffs were harmed. In count IV, plaintiffs alleged that class action status was appropriate because the class of persons affected was too numerous, that there were questions of both fact and law common

to the class, that the named plaintiffs and attorneys would adequately protect the interest of the class, that class actions were the most just manner in which to adjudicate the claims and that the prosecution of separate actions by individual members of the plaintiff class would create a risk of inconsistent or varying adjudications. The plaintiffs requested money damages in an amount in excess of \$50,000 for each plaintiff in each substantive count of the complaint. Plaintiffs voluntarily withdrew count IV seeking class certification.

¶ 9 We take notice that Federal Signal has been involved in significant litigation regarding its sirens. See *Sundance Homes, Inc. v. County of Du Page*, 195 Ill. 2d 257, 275 (2001) (noting that “a court of review may take judicial notice of prior litigation”). Currently, there are several hundred firefighters in Illinois and in other states claiming hearing loss as a result of their exposure to Federal Signal’s sirens.

¶ 10 In addition to the cases pending in Illinois, firefighters in New York brought a claim against Federal Signal for permanent hearing damage while employed by the fire department of the City of New York due to repeated exposure to sirens manufactured by Federal Signal Corporation. *Fitzgerald v. Federal Signal Corp.*, 883 N.Y.S.2d 67, 68 (N.Y. App. Div. 2009). In that case the Superior Court Appellate Division affirmed dismissal in favor of Federal Signal, holding that the lower court was correct in its determination that “[t]here is no duty to warn of an open and obvious danger of which the product user is actually aware or should be aware as a result of ordinary observation or as a matter of common sense.” (Internal quotation marks omitted.) *Id.* at 69. In Philadelphia, a jury ruled in favor of a firefighter, finding that Federal Signal was negligent in its design and construction of its sirens. Amaris Elliot-Engel, *Jury Awards Damages in First Firefighter Hearing Loss Trial*, The Legal Intelligencer, Mar. 4, 2010. Other firefighter claims have been dismissed by Philadelphia judges. *Id.*

¶ 11 Due to the amount of filed actions in the circuit court of Cook County related to Federal Signal and its sirens, in 2004 the cases were consolidated for discovery and assigned for trial to the Honorable William Haddad. At the outset of litigation of the initial complaint, there were 2,400 plaintiffs who had filed actions against Federal Signal. On February 25, 2004, these cases were consolidated for discovery before the Honorable Joseph N. Casciato, of which over 600 were Cook County/Chicago firefighter plaintiffs. These cases were: *Rago v. Federal Signal Corp.*, No. 99 L 4752; *Lamb v. Federal Signal Corp.*, No. 00 L 6485; *North v. Federal Signal Corp.*, No. 00 L 6486; the instant case, *Polo v. Federal Signal Corp.*, No. 00 L 6487; *Rice v. Federal Signal Corp.*, No. 00 L 6488; *Fisher v. Federal Signal Corp.*, No. 00 L 6489; *Wood v. Federal Signal Corp.*, No. 00 L 6490; *Moran v. Federal Signal Corp.*, No. 00 L 6491; *Price v. Federal Signal Corp.*, No. 00 L 6493; *Payne v. Federal Signal Corp.*, No. 00 L 6495.

¶ 12 In June of 2007, the consolidated cases were assigned for trial to Honorable William H. Haddad. Judge Haddad identified these firefighter plaintiffs and placed them in an initial trial pool in which plaintiffs would be selected together to pursue trials. From the initial trial pool, 30 plaintiffs were selected as “Track 1” cases, case number 99 L 004752, and 27 of them were tried to a verdict rendered on April 24, 2008. In the “Track 1” cases, plaintiffs asserted arguments based on Federal Signal Corporation’s negligence and failure to warn. The jury returned a verdict in favor of Federal Signal.

- ¶ 13 On May 2, 2008, 40 more plaintiffs were selected from the initial trial pool as “Track 2” plaintiffs, case number 00 L 6485, with a trial date of September 8, 2008. On July 14, 2008, the “Track 2” plaintiffs moved to voluntarily dismiss all 40 cases and a voluntary dismissal was entered on July 23, 2008.
- ¶ 14 On July 23, 2008, the trial court entered its “Track 3” case management order, ordering the plaintiffs to select 40 “Track 3” plaintiffs from the initial trial pool to certify for trial on January 5, 2009. Initially, on July 31, 2008, plaintiffs identified its “Track 3” plaintiffs as: Ronald A. Malone, Robert O’Toole, Terrence J. O’Brien, Frank J. Paukert, Donald Freza, George T. Grogan, Jeffrey Hoshell, Richard G. Groves, Michael Horist, Thomas Hosty, Timothy Hynes, Lawrence M. Lempa, Thomas Baley, Richard A Bieschke, Earl Bybee, Benjamin L. Chira, Robert S. Cimarolli, Daniel A. Cunningham, Edward J. Doherty, Bruce Faber, John Farrow, James E. Fitzgibbon, John Franco, Robert Gahagan, Dominic Gibson, Patrick Gillespie, Michael J. Veller, James P. Voris, James A. Waitkus, William H. Heenan, Richard A. Koffski, Micahel Scudieri, Richard Reimer, Mauricio Rodriguez, Donald B. Salzman, Steven Schulz, James R. Skawski, John Steinmetz, John C. Stitz, and Edward H. Eismueller. The “Track 3” case eventually went to trial with nine firefighter plaintiffs: Thomas E. Baley; Earl E. Bybee; Edward J. Doherty; Donald J. Freza; Thomas J. Hosty; Robert J. O’Toole; Richard J. Reimer; Mauricio Rodriguez; and James P. Voris.
- ¶ 15 On December 1, 2008, pursuant to order by the court, the plaintiffs filed an amended trial complaint detailing the theory plaintiffs would pursue at trial. In the amended complaint, plaintiffs alleged a single count of strict liability against Federal Signal, claiming that Federal Signal manufactured, marketed, distributed, and/or sold sirens that were defectively designed and unreasonably dangerous. Plaintiffs requested damages in excess of \$50,000 for each plaintiff joined in the case. Plaintiffs proceeded to trial on the amended complaint where their sole theory of liability was strict liability as defined by section 402A of the Restatement (Second) of Torts. Restatement (Second) of Torts § 402A (1965). The jury returned a verdict for the plaintiffs for a total amount of \$445,000. The instant case is the appeal of this “Track 3” trial.

¶ 16 III. Trial

- ¶ 17 Plaintiffs Baley, Bybee, Doherty, Freza, Hosty, O’Toole, Reimer, Rodriguez and Voris testified they were veteran firefighters of the Chicago Fire Department (CFD). Captain Mauricio Rodriguez joined the CFD in 1986 and had served as a fireman for 22 years.
- ¶ 18 In 1999, Captain Rodriguez had his hearing tested and subsequently became a plaintiff in this lawsuit in 2000.
- ¶ 19 Earl Bybee joined the CFD in 1978. In 1999, Bybee had his hearing tested and subsequently became a plaintiff in this lawsuit in 2000.
- ¶ 20 Richard Reimer joined the CFD in 1980 and worked as a firefighter and was promoted to engineer in 1989. Reimer testified to the fact that in 2000, he had hearing loss that had negatively impacted his life.
- ¶ 21 Thomas Hosty joined the CFD in 1969 and worked as a firefighter for approximately 34 years. Hosty testified that in 2000, while he did not notice hearing problem, his family did

notice he had a problem and he had his hearing tested.

¶ 22 After serving in the Navy, James Voris eventually joined the CFD in 1976. Between 1998 and 2000, Voris noticed that he was unable to hear a portable phone when it rang.

¶ 23 Thomas Baley joined the CFD as a paramedic in 1980. In 2000, prior to this lawsuit, Baley had his hearing tested. Baley had his hearing tested because his wife complained that he seemed to be losing his hearing.

¶ 24 Captain Donald Freza joined the CFD as a firefighter in February of 1980. Prior to June 2000, Captain Freza began to notice a degradation in his hearing. Captain Freza got his hearing tested around 1996-97 and was told that his hearing was poor and he should get hearing aids.

¶ 25 Edward Doherty joined the CFD as a firefighter in December of 1988. Doherty noticed hearing problems such as difficulty hearing when there was background noise present, and had his hearing tested in 1999.

¶ 26 Robert O'Toole joined the CFD in 1983. O'Toole began noticing problems with his left ear and had difficulty communicating because he could not hear that well. Prior to becoming a plaintiff, O'Toole had an audiogram in 1999 to diagnose his problem.

¶ 27 At trial, the plaintiffs' expert, Dr. Donald Henderson, testified. Dr. Henderson received his bachelor's degree in psychology and received his Ph.D. in experimental psychology and sensory psychology. Dr. Henderson's qualifications include holding several positions in the field of otolaryngology and working for the Central Institute for the Deaf in St. Louis and conducted studies in how the ear responds to high-level noise. Dr. Henderson has also been published approximately 200 times in peer-reviewed journals. Dr. Henderson testified that based on an Illinois Department of Labor (IDOL) study that cited Chicago firefighters as routinely exposed to 109.8 dB, based on a 10-minute-per-day average level of exposure to this noise, the firefighters' exposure would range about 556% of the permissible dose of acceptable noise exposure. Dr. Henderson reviewed the audiograms of each plaintiff and testified that they were "consistent with noise induced hearing loss from sirens."

¶ 28 To support their claim that the Federal Signal Corporation sirens were defectively designed, plaintiffs presented Dr. Earl R. Geddes as an expert witness. Dr. Geddes was found to be a qualified expert as he had a Ph.D. in acoustics, had extensive work history in noise control, had published articles and books on noise-related issues, was a member of numerous professional societies and held various patents in noise control designs. In ruling that Dr. Geddes was qualified to give expert testimony, the court reviewed Dr. Geddes' report, his *curriculum vitae*, discovery deposition and 213 opinions and found Dr. Geddes "to be a highly educated acoustical design engineer." The court detailed Dr. Geddes' expertise stating, "[h]is expertise includes the measurement of sound pressure and noise levels, acoustical product design, which included the actual process of making the design and the making of the products and he holds dozens of patents for acoustical products as well as peer reviewed articles." Furthermore, the court found that Dr. Geddes reviewed thousands of pages of available documentation from Federal Signal and the Chicago Fire Department relating to siren speaker designs and formulated his opinion based on those documents and the test he conducted.

- ¶ 29 Dr. Geddes testified that it was his opinion that the sirens produced by Federal Signal were unreasonably dangerous. Specifically, Dr. Geddes testified that it would be “[p]erfectly reasonable to have made sirens that would not have emitted sound in the rearward direction to the point where they would be dangerous.” Dr. Geddes discussed that sources of sound have directional characteristics and the main issue was to design a system that minimized backward sound while the sound emitted in a forward direction is maximized. After pointing out this problem, Dr. Geddes testified that he investigated what it would take to make a siren that minimized sound in the rearward direction.
- ¶ 30 In forming his opinion, Dr. Geddes reviewed documents from Federal Signal Corporation, including documents with scientific data, manuals and reports by other companies. Dr. Geddes stated that his opinion was based on the fact that while there was a requirement for the sound in the forward direction, there was no requirement for how much sound is produced rearward and that there was no evidence that Federal Signal Corporation was doing anything to minimize the rearward noise. Dr. Geddes ultimately opined that the sirens were defectively designed and unreasonably dangerous because the sirens did not adequately reduce the sound rearward into the area occupied by the firefighters.
- ¶ 31 Additionally, Dr. Geddes testified that he could create an alternative design that would minimize the rearward sound. Dr. Geddes tested his opinion using a computer program to create a computer model and designs that he thought would minimize the sound. Dr. Geddes testified regarding plaintiff’s exhibit number 25, which was a sheet from a program called “Mathcad” that defines the variables involved in and the calculations performed to get the results. These calculations were used to produce a directivity plot. Dr. Geddes testified that the plot based on his calculations demonstrated that at 2,000 hertz, the design would emit 25 decibels in the rearward direction; at 3,000 hertz, the design would emit 28 decibels; and at 3 kilohertz, the rearward noise would be 40 decibels. Dr. Geddes explained this design could be implemented by Federal Signal Corporation with a device called a horn. Dr. Geddes described the horn as a megaphone-like device that tends to direct sound in the forward direction and minimize the sound in a rearward direction.
- ¶ 32 Dr. Geddes testified that such computer programs are used in “the very early stages of engineering design” because in engineering, “[y]ou always start with a paper design, a computer model, so to speak. And then the next stage is, you build a prototype, and then you test that. And based upon what you learn from that prototype, you might go back to the model and manipulate it.” Dr. Geddes testified that plaintiff’s exhibit number 26 would meet the criteria of a device that would match his calculations and inhibit rearward sound. He stated that at this point, a prototype would be built and that might have to be tweaked, depending on the actual results. Dr. Geddes testified that the model, plaintiff’s exhibit number 26 would meet the criteria of a device that would match his calculations and inhibit rearward sound.
- ¶ 33 On cross-examination, Dr. Geddes testified that before this case he had never designed a siren in his career, never studied emergency vehicle sirens and never studied what makes vehicle sirens effective. When asked if he was certain that if someone were to create a siren out of the model he had developed, that siren could meet the Society of Automotive Engineers (SAE) J1849 standards required by the city for its sirens and still provide

protection from rearward noise, Dr. Geddes testified, “I can’t tell you for certainty that I could design one, but I have pretty good confidence that I could.”

¶ 34 Federal Signal sought to admit evidence showing that plaintiff firefighters were able to take appropriate precautions by using hearing protection. This evidence consisted of the testimony of Dr. Tyler Kress, Chicago Fire Department Safety Director Chief Flynn, and plaintiff Edward J. Doherty. Federal Signal also sought to admit evidence of a Chicago firefighters’ union grievance in November 1999 alleging that the city was not complying with NFPA 1500 standard for hearing protection and demanding hearing protection, and evidence of the International Fire Service Training Association (IFSTA) “Essentials of Firefighting” manual.

¶ 35 Federal Signal offered the testimony of Dr. Tyler Kress, who testified in the “Track 1” Federal Signal Corporation trial. The initial study that Dr. Kress performed was barred in the first case because the court found that the manner in which he conducted his survey was improper and did not rise to the level of a science. In this case, Federal Signal sought to introduce a second survey conducted by Dr. Kress that used information gathered through Freedom of Information Act (5 ILCS 140/1 *et seq.* (West 1998)) requests of 48 fire departments. Plaintiffs brought a motion *in limine* to bar Dr. Kress’s testimony. Dr. Kress’s testimony would rely on that survey and Federal Signal proffered that Dr. Kress would have testified that 44 of 45 Chicago area fire departments provided hearing protection. Additionally, Dr. Kress would testify concerning industry standards and knowledge and awareness of the risks of hearing loss from loud noises among the general population and among firefighters, in particular fire departments.

¶ 36 Initially, Judge Haddad reserved the motion *in limine*. Prior to trial, Judge Haddad had ruled that Dr. Kress’s testimony was inadmissible. Judge Haddad found that such testimony’s probative value did not overcome its prejudicial effect of confusing the jury as to the issues in this case.

¶ 37 Federal Signal also sought to elicit testimony from Chicago Fire Department Safety Director Chief Flynn regarding hearing protection use in other fire departments and about the union grievance concerning hearing protection. Federal Signal made an offer of proof regarding his testimony in chambers. Federal Signal’s offer of proof regarding Chief Flynn’s testimony was that he would also testify regarding the Chicago firefighters’ union grievance filed on November 4, 1999, which cited the Chicago Fire Department’s noncompliance with NFPA standard 1500/15-11, which provided, “[h]earing protection shall be provided for and used by all members operating or riding on fire apparatus when subject to noise in excess of 90 dBA.” However, according to Flynn, the Chicago Fire Department was bound only by the Occupational and Safety Health Administration (OSHA) guidelines and not by the NFPA standard, as Illinois is “not an NFPA state.” The city did not change its policy because it determined that it was already in compliance with the OSHA guidelines. The grievance was denied and the firefighters’ union did not appeal.

¶ 38 Plaintiffs brought a motion *in limine* regarding the firefighters’ union grievance. Judge Haddad denied plaintiffs’ motion *in limine* stating such testimony “would come[] in as notice to the Chicago Fire Department, who is a player in the sole proximate cause issue and

also to Federal Signal as part of the plaintiff's theory." The court provided the caveat, however, that "we should limit some of this conversation testimony and evidence as to the union that is extraneous to the issues of this case and I'm going to be vigilant about this in this trial." At trial, the court barred questioning of Flynn regarding the union grievance, ruling "[t]he union's unnecessary ***. Why bring in this prejudicial information about the existence of the union?"

¶ 39 At trial, the court ruled that it would allow Federal Signal to question Chief Flynn regarding his own observations of hearing protection use at the Chicago Fire Department "so far under the risk utility standards, this evidence could go in." However, the court barred Federal Signal from eliciting testimony from Chief Flynn regarding the use of hearing protection in other fire departments, specifically stating:

"We're not getting into what other folks are doing. I don't know where the relevancy of that is. I understand that the risk utility allows that analysis as to benefits and risk involved an [*sic*] specifications can be part of the scenario ... but what other folks are doing or not doing, I believe, is not relevant enough and it could create a strong prejudice here that I think belongs outside the case."

¶ 40 At trial, Federal Signal was allowed to question Flynn regarding his observations of hearing protection use at the Chicago Fire Department, O'Hare and Midway by workers on his crew, and Flynn admitted he observed the use of such hearing protection by some firefighters. The court also allowed questioning of Flynn regarding NFPA standard 1500/15-11, which stated that hearing protection "shall" be provided. Counsel for Federal Signal further questioned Flynn regarding a "hearing protection device," which Flynn knew was available.

¶ 41 On cross-examination by plaintiffs' attorney, Flynn testified that Chicago Fire Department firefighters were not able to wear anything they wanted but, rather, had to wear gear that was provided and hearing protection was not provided. Also, plaintiffs' attorney questioned Flynn about the "hearing protection device," and Flynn testified that the device was not just for hearing protection but was a two-way communication headset, and the headset would have to be attached to a radio so that firefighters could hear the radio. The firefighters could not simply put on these headsets, as they would have to be able to hear the radio.

¶ 42 Federal Signal sought to elicit testimony from plaintiff Edward J. Doherty, who stated in his deposition that he knew firefighters in the Chicago area used hearing protection on the job. During trial, Federal Signal asked Doherty "if based on his personal knowledge if he had seen firefighters in some suburbs wear hearing protection." Plaintiffs' counsel objected and the court sustained the objection stating, "[t]he jury will disregard what other departments do or don't do. It's not an issue. It's not relevant."

¶ 43 Finally, the court barred the admission into evidence of the "Essentials of Firefighting," a training manual used by the Chicago Fire Department which states that firefighters are exposed to loud noises and warns that "exposure to these sounds or a combination of sounds can produce permanent hearing loss." The manual recommends hearing protection as 1 of 10 recommended pieces of fire safety equipment. Federal Signal sought to introduce the

manual to establish that plaintiffs assumed the risk. Plaintiffs argued that their complaint only sounded in strict product liability and such a training manual would mislead the jury. Defendant argued that the manual was relevant as witnesses would testify that the manual discusses the use of hearing protection. The court denied the admission of the manual in a pretrial order, but provided that this material can only be used “if it can be shown that plaintiffs attended these training classes, as this may infer actual knowledge of the risk.”

¶ 44 Federal Signal presented the testimony of Commander Raymond Kolasa, who wrote specifications for the Chicago Fire Department. Kolasa testified that the fire department specified that all vehicles were “to be purchased with Federal Signal sirens.” The requirements for the component parts of the vehicles were a subset of the vehicle specifications. The city solicited bids for delivery of a complete vehicle according to its specifications. The bid was not from Federal Signal directly but, rather, from a contractor who would build the vehicle and put the sirens on it.

¶ 45 The city’s specifications required Federal Signal sirens on the trucks and that the sirens meet the requirements of the SAE J1849 standard. The SAE J1849 standard requires that sirens meet certain specifications, including producing sound loud enough to measure 118 dB directly in front of the siren and 111dB at angles up to 50 degrees to the side of the siren. The SAE standards also specify the required range for siren frequency, which should be between 650 hertz to 2000 hertz. The SAE standard does not *require* a certain decibel range for rearward, but instead merely states a *recommendation* of a maximum sound pressure level of 85 dB in the passenger area. The SAE standard puts the sole responsibility for testing the volume of sound directed rearward in the passenger area on emergency vehicle manufacturers and users. The city’s specifications put the responsibility for testing of the sound inside the vehicle on the vehicle manufacturer.

¶ 46 Federal Signal also presented testimony from its expert, Joe Bader, the vice president of engineering for Federal Signal. Bader had worked on the design of Federal Signal’s sirens for 23 to 25 years, including designing sirens for emergency vehicles. Bader disagreed with Dr. Geddes, testifying that Dr. Geddes’ alternative siren design could not be built to match the SAE J1849 specifications that were required by law.

¶ 47 Bader had two main issues: the actual feasibility due to the conical horn design and performance feasibility. Bader testified that the use of a conical horn design postulated by Dr. Geddes would greatly reduce the lifespan of the compression drive in the horn. The reason for this is because there would be no path for dirt and other debris to be filtered out and that those materials would get into the compression driver, reducing its effectiveness. Bader opined that Dr. Geddes’ design would not be feasible with the conical horn design because it would not project adequate sound to the sides of the fire engines and therefore would not meet the Chicago Fire Department standards. Specifically, Bader testified that Dr. Geddes based his range of frequencies from 2,000 hertz to 4,000 hertz and that such a range would not meet the SAE J1849 standard. Bader was a member of the SAE committee that drafted the standards, and became the committee’s chairman in 2007. Bader testified that 650 hertz to 2,000 hertz frequencies are the required ranges for the SAE J1849 standard. At the 2,000 to 4,000 hertz frequency range, the dispersion beam pattern of the sound would not have enough sound to meet the outer edges of the SAE specification.

¶ 48 Bader testified that the National Institute of Occupational Safety and Health (NIOSH) specifies an exposure limit to high noise levels at 1/30 of an hour (2 minutes per hour) at 110 dB.¹ The SAE J1849 standard is equivalent to the NIOSH standard regarding the duration of exposure to the specified noise levels. Bader also testified that the IDOL study indicated that Federal Signal Corporation sirens created a peak exposure of 109.8 dB. Bader conceded that Federal Signal's sirens produced sounds greater than 110 dB and that an exposure at this level would "exceed the daily dose." Bader, however, maintained on direct examination by Federal Signal that Dr. Geddes' design was not an improvement on the Federal Signal siren and that he had not shown that it would reduce the loudness of sirens where firefighters or ambulance drivers sit.

¶ 49 On cross-examination, Bader at first testified that there is no standard that governs how loud the siren should be rearward into the cabin. However, upon further questioning, he quoted the SAE J1849 standard:

" 'To minimize potential hearing loss, it is recommended that a maximum sound pressure level of 85 dBA be present in the passenger area when the vehicle is in motion with the siren operating. Manufacturers and users of emergency vehicles should measure the actual sound pressure levels per SAE J336 at each riding position.' "

Bader admitted that in his 23 years at Federal Signal he had never tested the effect of the sound of the sirens on firefighters. Bader considered the "end user" to be the customer and not the firefighters. Federal Signal only tested its sirens to comply with the forward and sideways sound level requirements of the SAE J1849 standard.

¶ 50 After a two-week trial, the jury returned a verdict for the plaintiffs for a total amount of \$445,000. Federal Signal filed a motion for judgment notwithstanding the verdict or, in the alternative, a new trial. On November 6, 2009, the court entered an order denying the motion for reasons stated in court on the record. The record reveals that the court found that the jury had sufficient evidence due to the expert testimony to find for the plaintiffs. On December 7, 2009, Federal Signal filed its notices of appeal and appealed the denial of its motions for judgment notwithstanding the verdict and for a new trial. Specifically, Federal Signal argues that the court erred in denying its motions for judgment notwithstanding the verdict because: (1) plaintiffs were required to show a feasible alternative design to establish that Federal Signal's sirens were unreasonably dangerous; (2) Dr. Geddes' testimony should have been barred as speculative; and (3) evidence of the availability of hearing protection should have been admitted. For the reasons that follow, we affirm.

¹Compliance with OSHA standards has been held not to be a defense to a state tort or criminal liability. See *International Union, United Automobile, Aerospace & Agricultural Implement Workers of America v. Johnson Controls, Inc.*, 499 U.S. 187, 214 (1991) (White, J., concurring in part and concurring in the judgment, joined by Rehnquist, C.J., and Kennedy, J.) (citing *National Solid Wastes Management Ass'n v. Killian*, 918 F.2d 671, 680 n.9 (7th Cir. 1990), and 29 U.S.C. § 653(b)(4)).

ANALYSIS

¶ 51

¶ 52

Federal Signal argues that the trial court erred in denying its motion for judgment notwithstanding the verdict or, in the alternative, a new trial. “[V]erdicts ought to be directed and judgments *n.o.v.* entered only in those cases in which all of the evidence, when viewed in its aspect most favorable to the opponent, so overwhelmingly favors movant that no contrary verdict based on that evidence could ever stand.’” *Jablonski v. Ford Motor Co.*, 2011 IL 110096, ¶ 88 (quoting *Pedrick v. Peoria & Eastern R.R. Co.*, 37 Ill. 2d 494, 510 (1967)). In other words, a motion for judgment notwithstanding the verdict presents “ ‘ “a question of law as to whether, when all of the evidence is considered, together with all reasonable inferences from it in its aspect most favorable to the plaintiffs, there is a total failure or lack of evidence to prove any necessary element of the [plaintiff’s] case.” ’ ” *Id.* (quoting *York v. Rush-Presbyterian-St. Luke’s Medical Center*, 222 Ill. 2d 147, 178 (2006), quoting *Merlo v. Public Service Co. of Northern Illinois*, 381 Ill. 300, 311 (1942)). We review *de novo* a trial court’s decision denying a motion for judgment notwithstanding the verdict. *Id.* (citing *Lazenby v. Mark’s Construction, Inc.*, 236 Ill. 2d 83, 100 (2010)).

¶ 53

Federal Signal argues that the trial court erred in denying its motion for judgment notwithstanding the verdict for the following reasons: (1) plaintiffs did not establish a feasible alternative design; (2) the trial court erred in admitting the testimony of plaintiffs’ expert; and (3) the trial court erred in barring evidence of hearing protection used in other departments.

¶ 54

I. Strict Liability Based on Defective Design

¶ 55

Plaintiffs’ cause of action is grounded on design-defect strict liability. In 1965, the Illinois Supreme Court adopted strict liability as set forth under the Restatement (Second) of Torts, section 402A. *Suvada v. White Motor Co.*, 32 Ill. 2d 612, 622-23 (1965). Strict liability is imposed upon a seller of “any product in a defective condition unreasonably dangerous to the user or consumer or to his property.” Restatement (Second) of Torts § 402A (1965). A plaintiff must plead and prove the following elements to prevail in a strict liability action: (1) that the injury complained of resulted from a condition of the product; (2) that the condition was unreasonably dangerous; and (3) that it existed at the time the product left the manufacturer’s control. *Mikolajczyk v. Ford Motor Co.*, 231 Ill. 2d 516, 525 (2008) (citing *Sollami v. Eaton*, 201 Ill. 2d 1, 7 (2002)). A product maybe found to be unreasonably dangerous based on proof of any one of three conditions: (1) a manufacturing defect; (2) a design-defect; or (3) inadequate warnings. *Mikolajczyk*, 231 Ill. 2d at 532. Plaintiffs here brought their strict liability claim based on design-defect.

¶ 56

In strict liability cases based on design-defect, the proper inquiry belongs with the product and not the conduct of the manufacturer. *Rucker v. Norfolk & Western Ry. Co.*, 77 Ill. 2d 434, 439 (1979) (holding that in strict liability based on design-defect, the product should be looked at and not the conduct of the manufacturer); *Blue v. Environmental Engineering, Inc.*, 215 Ill. 2d 78, 95 (2005) (holding that “[i]n a negligence defective design case, the focus is on the conduct of the defendant, but in a strict liability defective design case, the focus is on the product”).

¶ 57 Under a design-defect theory of strict products liability, to determine whether the product is unreasonably dangerous Illinois courts apply the consumer-expectation test as well as the risk-utility test. *Salerno v. Innovative Surveillance Technology, Inc.*, 402 Ill. App. 3d 490 (2010). “Under the consumer expectation test, a plaintiff succeeds by proving that ‘the product failed to perform as an ordinary consumer would expect when used in an intended or reasonably foreseeable manner.’ ” *Duffy v. Togher*, 382 Ill. App. 3d 1, 14 (2008) (quoting *Calles v. Scripto-Tokai Corp.*, 224 Ill. 2d 247, 256 (2007)). “Under the risk utility test, a plaintiff succeeds by proving that ‘the magnitude of the danger outweighs the utility of the product, as designed.’ ” *Duffy*, 382 Ill. App. 3d at 14 (quoting *Calles*, 224 Ill. 2d at 259). The consumer-expectation test and the risk-utility test “are not *theories of liability*; they are *methods of proof* by which a plaintiff ‘may demonstrate’ that the element of unreasonable dangerousness is met.” (Emphases in original.) *Mikolajczyk v. Ford Motor Co.*, 231 Ill. 2d 516, 548 (2008) (quoting *Heastie v. Roberts*, 226 Ill. 2d 515, 542 (2007)).

¶ 58 A. The Consumer-Expectation Test

¶ 59 Restatement section 402A sets forth the consumer-expectation test and provides that “a product is ‘unreasonably dangerous’ when it is ‘dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics.’ ” *Calles v. Scripto-Tokai Corp.*, 224 Ill. 2d 247, 254 (2007) (quoting Restatement (Second) of Torts § 402A cmt. i (1965)). Under this test, “a plaintiff must establish what an ordinary consumer purchasing the product would expect about the product and its safety.” *Calles*, 224 Ill. 2d at 254. “This is an objective standard based on the average, normal, or ordinary expectations of the reasonable person; it is not dependent upon the subjective expectation of a particular consumer or user.” *Id.*

¶ 60 As our supreme court explained, “[t]he consumer-expectation test was originally applied to manufacturing defects, but soon came to be applied to design-defect issues as well.” *Id.* at 254-55. “Over time, the applicability of the consumer-expectation test to design-defect cases was questioned, primarily because it became apparent that consumers might not be aware of what to expect regarding the safety of certain products.” *Id.* at 255. Accordingly, in *Lamkin v. Towner*, 138 Ill. 2d 510, 528 (1990), the Illinois Supreme Court adopted a second alternative test for design-defect cases known as the risk-utility test.

¶ 61 B. Risk-Utility Test

¶ 62 In *Lamkin*, the Illinois Supreme Court held that a consumer may prove a design-defect by either the consumer-expectations test or the risk-utility test. *Id.* at 529. Under the risk-utility test, for a plaintiff to prevail under a design-defect claim sounding in strict liability, “he or she [must] demonstrate[] that the magnitude of the danger outweighs the utility of the product, as designed.” *Calles*, 224 Ill. 2d at 259. Although not exhaustive, the supreme court has provided factors in balancing the risk against the utility of a product, including: (1) the availability and feasibility of alternate designs at the time of the product’s manufacture; (2) that the design used did not conform to the design standards in the industry, design

guidelines provided by an authoritative voluntary organization, or design criteria set by legislation or governmental regulation; (3) the utility of the product to the user and to the public as a whole; (4) the safety aspects of the product, including the likelihood that it will cause injury and the probable seriousness of the injury; and (5) the manufacturer's ability to eliminate the unsafe character of the product without impairing its usefulness or making it too expensive to maintain its utility. *Jablonski v. Ford Motor Co.*, 2011 IL 110096, ¶ 85; see also *Calles*, 224 Ill. 2d at 264-66 (listing additional factors). In *Mikolajczyk*, the Illinois Supreme Court adopted an integrated risk-utility test that includes the consumer-expectation test as a factor if the evidence provided supports the application of an integrated test. *Mikolajczyk*, 231 Ill. 2d at 555.

¶ 63

C. Feasible Alternative Design

¶ 64

Federal Signal maintains that, under plaintiffs' risk-utility theory of the case, plaintiffs were required to prove a feasible alternative design and that plaintiffs failed to meet this requirement. In analyzing whether a product is defectively designed, the Illinois Supreme Court has held that, "a plaintiff *may* demonstrate that a product is unreasonably dangerous because of a design-defect by presenting evidence of an alternative design that would have prevented the injury and was feasible in terms of cost, practicality and technological possibility." (Emphasis added.) *Hansen v. Baxter Healthcare Corp.*, 198 Ill. 2d 420, 436 (2002). In *Mikolajczyk*, the Illinois Supreme Court held that, "the existence of a feasible alternative design and the balancing of risks and benefits are relevant considerations in a strict product liability design-defect case, but they are not elements of the claim that the plaintiff is required to plead and prove in every case." *Mikolajczyk*, 231 Ill. 2d at 546.

¶ 65

In 1998, the American Law Institute (ALI) published the Restatement (Third) of Torts: Products Liability, giving the products liability doctrine its very own Restatement and adopting the requirement that plaintiffs must prove the existence of an alternative feasible design (or warning) to establish that a product is defective in its design. See Restatement (Third) of Torts: Products Liability § 2(b) (1998).

¶ 66

However, our own supreme court has explicitly declined to adopt the Restatement (Third) of Torts: Products Liability. Our supreme court made clear in *Mikolajczyk* that it would *not* adopt section 2(b) of the Products Liability Restatement changing products liability law to require proof of a feasible alternative. See *Mikolajczyk*, 231 Ill. 2d at 543-44. The court recounted that this requirement was briefly a part of Illinois law under the so-called "Tort Reform Act," Public Act 89-7, eff. March 9, 1995, which provided that in strict product liability actions, the design of a product is " 'presumed to be reasonably safe,' unless the plaintiff proves that, 'at the time the product left the control of the manufacturer, a practical and technically feasible alternative design was available that would have prevented the harm without significantly impairing the usefulness, desirability, or marketability of the product.' " *Id.* (quoting 735 ILCS 5/2-2104 (West 1996) (declared unconstitutional)). However, the court declared Public Act 89-7 unconstitutional in its entirety in *Best v. Taylor Machine Works*, 179 Ill. 2d 367, 467 (1997), and the legislature has not reenacted the provision. *Mikolajczyk*, 231 Ill. 2d at 544. Thus, the court held, it would not "make a change that would so

fundamentally alter the law of product liability” and that “[s]uch a change, if it is to be made, is a matter of public policy, better suited to legislative action than judicial decisionmaking.” *Id.*

¶ 67 Nevertheless, Federal Signal contends that plaintiffs are *required* to prove a feasible alternative design in order to state a claim in strict liability in this case simply because the product is a siren used on fire trucks, which relates to public safety. Federal Signal cites to no authority for this proposition, which essentially creates a new rule in products liability law. We reiterate the holding of our supreme court that a feasible alternative design is not a required element but merely one of the factors to consider, and that, based on the testimony adduced at trial, there was sufficient evidence to establish a *prima facie* products liability case. In this case, there was ample evidence of the unreasonably dangerous nature of the siren. Dr. Geddes provided evidence to demonstrate a feasible alternative design. He reviewed Federal Signal documents, including scientific data, manuals and reports by other companies. Dr. Geddes opined that the Federal Signal Corporation sirens were defectively designed and unreasonably dangerous to the firefighters because the sound of the sirens directed rearward into the area occupied by the firefighters was excessive. Dr. Geddes developed a computer model which showed that the rearward noise of the sirens could feasibly be reduced by 10 dB to 35 dB.

¶ 68 Additionally, Dr. Henderson testified that based on the IDOL study that cited Chicago firefighters as routinely exposed to 109.8 dB, based on a 10-minute-per-day average level of exposure to this noise, the firefighters’ exposure was about 556% of the permissible dose of acceptable noise exposure. Dr. Henderson reviewed the audiograms of each plaintiff and testified that they were “consistent with noise induced hearing loss from sirens.”

¶ 69 Federal Signal concedes that a feasible alternative design is not required but argues that an exception should be recognized in this case based on the public safety benefits that the siren produces. We note that the Illinois Vehicle Code’s provisions address the sound of the sirens for the public safety in general, but have no requirement or restriction regarding the projection of sound rearward into the cabin of emergency vehicles. See 625 ILCS 5/12-601(b) (West 1998) (“Any authorized emergency vehicle or organ transport vehicle as defined in Chapter 1 of this Act may be equipped with a siren, whistle, or bell, capable of emitting sound audible under normal conditions from a distance of not less than 500 feet ***.”); 625 ILCS 5/11-1421(a)(2) (West 1998) (“The ambulance or rescue vehicle shall be equipped with a siren producing an audible signal of an intensity of 100 decibels at a distance of 50 feet from the siren ***.”).

¶ 70 The Illinois Supreme Court has recognized that the imposition of strict liability is a question of policy. *Greenberg v. Michael Reese Hospital*, 83 Ill. 2d 282, 291 (1980). Federal Signal asks this court to carve out a new exception in strict liability design-defect cases involving public safety devices requiring that plaintiffs must prove a feasible alternative design. To support this proposition, Federal Signal cites *Adames v. Sheahan*, 378 Ill. App. 3d 502, 527-28 (2007), *aff’d in part & rev’d in part on other grounds*, 233 Ill. 2d 276 (2009), and *DeRosa v. Remington Arms Co.*, 509 F. Supp. 762 (E.D.N.Y. 1981), arguing that courts have rejected strict liability for essential public safety equipment in the absence of an alternative design that conformed to the specifications of the responsible agency. Neither

Adames nor *DeRosa* provides relevant applicability to the present case.

¶ 71 In *Adames*, this court was concerned with whether a handgun was unreasonably dangerous because it did not have a magazine disconnect safety feature and could still fire bullets even when the magazine was unloaded. *Adames*, 378 Ill. App. 3d at 524-28. This court did not impose strict liability on Berretta U.S.A. Corporation based on either public policy or lack of a feasible alternative design. *Adames*, 378 Ill. App. 3d at 526, 528. This court undertook the consumer-expectation analysis and the risk-utility analysis in holding that the handgun was not unreasonably dangerous. *Adames*, 378 Ill. App. 3d at 524-28.

¶ 72 The Northern District noted that requiring “physical testing of an expert’s opinions before the expert is permitted to testify would mean the elimination of product liability suits by ordinary non-corporate citizens. No ordinary citizen could afford such prohibitive up front litigation costs.” *Traharne v. Wayne/Scott Fetzer Co.*, 156 F. Supp. 2d 697, 713 (N.D. Ill. 2001). We find in accordance with prior decisions that actual physical testing is not always necessary and that evidence of a feasible alternative design is not required to prove a design-defect products liability claim.

¶ 73 II. Admission of Expert Testimony

¶ 74 Next, Federal Signal Corporation contends that Dr. Geddes’ testimony should have been excluded as speculative. It is up to the “discretion of the trial court to determine whether an expert’s testimony may be properly admitted.” *People v. Safford*, 392 Ill. App. 3d 212, 221 (2009). Expert testimony is admissible if “the expert is qualified by knowledge, skill, experience, training, or education in a field that has at least a modicum of reliability, and if the testimony would aid the jury in understanding the evidence.” (Internal quotation marks omitted.) *Fronabarger v. Burns*, 385 Ill. App. 3d 560, 565 (2008). “ ‘[T]he admission of an expert’s testimony requires the proponent to lay an adequate foundation establishing that the information upon which the expert bases his opinion is reliable.’ ” *Safford*, 392 Ill. App. 3d at 221 (quoting *Hiscott v. Peters*, 324 Ill. App. 3d 114, 122 (2001), citing *Soto v. Gaytan*, 313 Ill. App. 3d 137, 146 (2000)). The trial court is required to determine if the foundational standards have been met. *Safford*, 392 Ill. App. 3d at 221. After proper foundation has been laid, “the weight to be assigned to that testimony is for the jury to determine.” *Fronabarger*, 385 Ill. App. 3d at 565.

¶ 75 This court has held that “[t]he trial court has broad discretion in determining the admissibility of expert opinion testimony [citation] and this court will not disturb such a ruling absent an abuse of that discretion.” *Volpe v. IKO Industries, Ltd.*, 327 Ill. App. 3d 567, 576 (2002) (citing *Schaffner v. Chicago & North Western Transportation Co.*, 129 Ill. 2d 1, 36 (1989)). As the proponent of the expert testimony, the plaintiff has the burden of demonstrating to the trial court that the elicited opinion should be admitted into evidence. *Id.* “[T]he offering party must demonstrate that the witness is properly qualified as an expert based on his education, training, experience, or a combination of each [citation] and that the witness’ opinion is not [to be] based on speculation or conjecture [citation].” *Id.* The opinion elicited must also be reliable and have gained general acceptance in accordance with *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923). *Id.*

¶ 76 “An expert is qualified where (1) his opinion relates to a science, profession, business, or occupation and is beyond the knowledge or experience of the average person; (2) he has sufficient skill, knowledge or experience so that his opinion will aid the trier of fact; and (3) the state of the art or scientific knowledge permits a reasonable opinion to be asserted by an expert.” *Pease v. Ace Hardware Home Center of Round Lake No. 252c*, 147 Ill. App. 3d 546, 562 (1986) (citing *Buford v. Chicago Housing Authority*, 131 Ill. App. 3d 235, 243 (1985)).

¶ 77 We find that Dr. Geddes was qualified as an expert to testify that Federal Signal’s sirens were defectively designed. Dr. Geddes testified that he had bachelor and master’s degrees in physics with a Ph.D. in acoustics. Additionally, Dr. Geddes worked at Ford Motor Company as a research scientist in acoustics working for the electronics division. During his tenure with Ford, Dr. Geddes designed audio systems and noise control in automobiles. Dr. Geddes has also been published, having authored between 40 to 50 articles and 2 books. The articles included subject matter ranging from transducer design to room acoustics, and one of the books dealt with how to convert electrical signals into acoustic signals. Dr. Geddes has various patents in active noise control designs. Finally, Dr. Geddes was a member of numerous professional societies.

¶ 78 Dr. Geddes testified that it was his opinion that the sirens produced by Federal Signal were unreasonably dangerous. Specifically, Dr. Geddes testified that it would be “[p]erfectly reasonable to have made sirens that would not have emitted sound in the rearward direction to the point where they would be dangerous.” In arriving at this opinion, Dr. Geddes reviewed Federal Signal documents, including scientific data, manuals, and reports. Dr. Geddes formed his opinion based on the fact that the sirens are required to have a certain sound level in its forward direction, but no requirement for how much sound goes toward the rearward direction toward the firefighters.

¶ 79 Dr. Geddes tested his opinion using a computer program to create a computer model and did create designs that he thought would minimize the sound. Upon further questioning by plaintiffs’ counsel, Dr. Geddes specifically testified the following regarding his opinion and feasible alternative designs:

“Q. Would you please explain that opinion to the jury.

A. Okay. That opinion is based on the fact that there’s a requirement for a siren to have a certain sound level in its forward direction, but there is no requirement for how much sound goes in the rearward direction, the rearward direction being towards the firefighters.

One has to design for a sufficient level in the forward direction, but it’s obvious that you would design for a minimum level of sound in the rearward direction.

There was no evidence that Federal Signal was doing anything to design the rearward sound to minimize it, and, in fact, it’s perfectly reasonable to have made sirens that would not have emitted sound in the rearward direction to the point where they would be dangerous.

Q. So how could that have been done by Federal Signal over the last 30 years?

A. Well, there are a number of different ways to control the directivity of a source. This is a key principle in my testimony, and that is that sources of sound have directional

characteristics. And understanding and designing for those directional characteristics is the key to the problem. You have to design the system so that the sound emitted out the back is minimized and the sound emitted in the forward direction is maximized.

* * *

You asked me as part my assignment to investigate what would it take to make a siren, what might it look like to make a siren that did, in fact, minimize the sound in the rearward direction. And I sat down with computer programs that I was very familiar with, and I played around using ID, the paper type study, the very early stages of any engineering design, and I was able to come up with examples of—of designs that, in fact, did minimize the sound in the rearward direction.

* * *

*** You always start with a paper design, a computer model, so to speak. And then the next stage is, you build a prototype, and then you test that. And based upon what you learn from that prototype, you might go back to the model and manipulate it. You might manipulate the product.

Engineering is a loop cycle of cut, try, cut, try, until you reach the end result that you're looking for, which should be manufacturable, marketable, all of those features that a manufacturer product design looks for."

¶ 80 On cross-examination regarding whether his alternative design would still be loud enough in the front and sides to provide warning, Dr. Geddes emphasized that he could build a siren with the SAE J1849 standards for loudness in the forward and side directions. Dr. Geddes specifically stated that while he had not actually built such a siren, the design based on his calculations might do that and if the prototype did not work according to theory he would iterate it, and that, "[a]s in any engineering task, you iterate the design until you achieve the required goals." He consistently stated that he had "pretty good confidence" that the design would meet or could be made to meet the necessary requirements under the SAE J1849 standards.

¶ 81 Federal Signal argues that Dr. Geddes' testimony was speculative mainly because he did not actually build a prototype to test his opinion and because its own expert, Bader, contradicted Dr. Geddes' testimony. However, we find that Dr. Geddes' testimony was not speculative, as he based his testimony on his review of Federal Signal documents including scientific data, manuals, and reports and also created a computer model based on calculations from that data. Federal Signal provides us with no authority (a) *requiring* proof of a feasible alternative design in the first place, and (b) requiring the *actual building* of the feasible alternative design in order for an opinion based on feasible alternative design to be admissible. The fact remains that in Illinois a feasible alternative design is not a required showing but instead is merely one factor for a jury to consider. Also, precedent is clear that the feasible alternative design factor does not require actually building the alternative design; the factor is called a "*feasible* alternative design" and not an "*actual* alternative design." Feasibility includes the "*technological possibilities* viewed in the present state of the art." (Emphasis added.) *Kerns v. Engelke*, 76 Ill. 2d 154, 163 (1979) (quoting *Sutkowski v. Universal Marion Corp.*, 5 Ill. App. 3d 313, 319 (1972)).

- ¶ 82 Federal Signal relies on our decision in *Volpe* for the proposition that Dr. Geddes' testimony was speculative. See *Volpe*, 327 Ill. App. 3d at 577. In *Volpe*, we held that striking the plaintiffs' expert testimony evidence was not an abuse of discretion because the expert opined that the product was defective and there was a feasible alternative design without either a model or test results. *Id.* We held that "without either a model or test results, [the expert's] opinion was unsubstantiated and speculative." *Id.* However, Dr. Geddes' testimony in this case is distinguishable from the expert's testimony in *Volpe* because here, unlike the expert in *Volpe*, Dr. Geddes ran calculations to design a model of which a prototype could be built.
- ¶ 83 The facts of the instant case are more similar to *Sobczak v. General Motors Corp.*, 373 Ill. App. 3d 910 (2007). In *Sobczak*, the trial court barred the testimony of the plaintiff's two experts, who would have established the existence of a design-defect in a vehicle's muffler and also bolstered the testimony of another expert as to design-defects in a vehicle's heat shielding and fuel management systems. *Sobczak*, 373 Ill. App. 3d at 926. In barring one expert's testimony, the trial court found the expert "doesn't have competence to testify about this particular vehicle" and "[h]e doesn't even know how big of an engine it is. He hasn't done any testing. He's never designed any systems. He has an opinion about the muffler. The muffler, he has never looked at." (Internal quotation marks omitted.) *Id.* In reversing the trial court's ruling, this court held that the trial court abused its discretion by not allowing both experts' testimony even when they did not conduct their own tests because "both experts testified that, although they did not conduct their own tests, their opinions were based on the review of the tests conducted by GM," in addition to their experience, education, and various treatises. *Id.* at 927.
- ¶ 84 Similarly here, Dr. Geddes testified that he based his calculations on the documents he reviewed from Federal Signal. The facts here are even stronger in favor of admission than in *Sobczak* because here Dr. Geddes did fashion a model of a feasible alternative design for the sirens. We find that Dr. Geddes' testimony was not speculative and that the issue of whether there was a feasible alternative design was for the jury to determine.
- ¶ 85 Regarding Federal Signal's argument that Dr. Geddes' testimony was insufficient because its own expert disagreed and "[p]laintiffs made no effort to rebut Bader's critiques of Geddes' mathematical model," we find that the battle between the experts was an issue for the jury to determine. The determination of whether a product is defective, and therefore unreasonably dangerous, is ordinarily a question of fact for the jury. *Korando v. Uniroyal Goodrich Tire Co.*, 159 Ill. 2d 335, 344 (1994) (citing *Renfro v. Allied Industrial Equipment Corp.*, 155 Ill. App. 3d 140, 155 (1987)). In making its determination, the jury resolves the credibility of the witnesses and the conflicts in the evidence. *Korando*, 159 Ill. 2d at 344.
- ¶ 86 As aptly stated by the Illinois Supreme Court:
- "This case involved a classic battle of the experts. Witnesses qualified in their fields stated their opinions and gave their reasons for those opinions. Not surprisingly, the plaintiff's experts did not agree with the defense experts. The jury needed to listen to the conflicting evidence and use its best judgment to determine where the truth could be found. *** [T]his court should not usurp the function of the jury and substitute its

judgment on questions of fact fairly submitted, tried, and determined from the evidence which did not greatly preponderate either way.” (Internal quotation marks omitted.) *Snelson v. Kamm*, 204 Ill. 2d 1, 36 (2003).

¶ 87 We conclude that the trial court did not abuse its discretion in allowing Dr. Geddes to testify. Dr. Geddes’ credentials established him as qualified to testify. His testimony was based on documents he received from Federal Signal and he determined that the design of the siren was unreasonably dangerous because it did not account for rearward directivity. Dr. Geddes then used calculations to devise a computer model that would reduce the directivity of sound rearward. The record is clear that Dr. Geddes based his opinion on Federal Signal documents including scientific data, manuals, and reports and that he made a computer model to create a feasible alternative design. As such, the trial court was well within its discretion in allowing Dr. Geddes’ testimony. We find no abuse of discretion. Thus, we affirm the trial court’s ruling in denying Federal Signal’s motion for judgment notwithstanding the verdict or, in the alternative, a new trial.

¶ 88 III. Exclusion of Evidence of Hearing Protection in Other Departments

¶ 89 Finally, Federal Signal argues that evidence of hearing protection by other fire departments was relevant to the risk-utility analysis and thus should not have been excluded. The main thrust of this argument stems from one of the factors highlighted by the Illinois Supreme Court in *Calles*, “[t]he user’s ability to avoid danger by the exercise of care in the use of the product.” (Internal quotation marks omitted.) *Calles*, 224 Ill. 2d at 264. However, “[i]t is the function of a trial court to determine the admissibility of evidence, and its rulings will not be disturbed absent an abuse of discretion.” *Piser v. State Farm Mutual Automobile Insurance Co.*, 405 Ill. App. 3d 341, 349-50 (2010). We determine the trial court did not abuse its discretion.

¶ 90 First, we note that Federal Signal overstates the breadth of the trial court’s ruling. Although the court excluded evidence regarding hearing protection used by *other* fire departments, the trial court did allow Federal Signal to question both one of the plaintiffs and Chicago Fire Department Safety Director Chief Flynn regarding the use of hearing protection within the Chicago Fire Department. Specifically, in referring to an objection regarding hearing protection in other fire departments during plaintiff Doherty’s testimony, the court ruled:

“There was an objection to Mr. Hall’s question as to whether or not this witness knew of other fire department personnel that wore hearing protection. I sustained that objection; however, based on pretrial rulings, Mr. Hall may ask the question of whether he has personally ever seen other firefighters without saying where or who they are; has he personally seen other firefighters wearing hearing protection from time to time. You may ask that question generically, but not as to other departments.”

¶ 91 Federal Signal was also allowed to question Chicago Fire Department Safety Director Chief Flynn regarding his personal observations of firefighters within the Chicago Fire Department wearing hearing protection, and Flynn testified that he indeed saw some firefighters use hearing protection at the Chicago Fire Department, O’Hare and Midway.

¶ 92 Federal Signal was also allowed to question Flynn regarding an available hearing protection device. However, plaintiffs’ counsel brought out that the device was actually for two-way communications over the radio, as hearing the radio and communicating were necessary, and that firefighters could not simply put on their own headphones for hearing protection because they would not be able to hear the radio.

¶ 93 Thus, Federal Signal was allowed to elicit testimony from the safety director of the Chicago Fire Department regarding the use of hearing protection. There was evidence before the jury that firefighters within the Chicago Fire Department in fact used hearing protection, as well as evidence as to why simple hearing protection was not worn due to the necessity for communication. From our review of the record, the issue regarding hearing protection was allowed to be sufficiently explored by Federal Signal. Federal Signal does not explain how eliciting further testimony regarding the use of hearing protection in *other* fire departments was necessary or would have added anything additional to its defense without being cumulative.

¶ 94 Second, the trial court did not abuse its discretion in barring evidence of the use of hearing protection in other fire departments because Federal Signal’s duty to manufacture a reasonably safe product is nondelegable. The Illinois Supreme Court has held that in a strict liability cause of action, “a manufacturer is under a nondelegable duty to produce a product which is reasonably safe.” *Rios v. Niagara Machine & Tool Works*, 59 Ill. 2d 79, 85 (1974). While duty is typically an element of negligence, in *Rios* the Illinois Supreme Court held:

“It has been recognized by other jurisdictions that one who markets an unreasonably dangerous product is not entitled to expect that others will make it safe. Even where he had reason to believe that others would make the product safe the manufacturer remains liable if the dangerous condition is not in fact corrected.” *Rios*, 59 Ill. 2d at 84 (citing *Vandermark v. Ford Motor Co.*, 391 P.2d 168 (Cal. 1964), and *Bexiga v. Havir Manufacturing Corp.*, 290 A.2d 281 (N.J. 1972)).

Nondelegable duty means that the manufacturer remains strictly liable for its product even if it has a “reason to believe that others would make the product safe.” *Rios*, 59 Ill. 2d at 84.

¶ 95 This court has continued to recognize that in strict liability actions, “[a] manufacturer has a duty to produce a reasonably safe product which cannot be delegated to the user or purchaser of the product.” *Dillard v. Walsh Press & Die Co.*, 224 Ill. App. 3d 269, 278 (1991) (citing *Doser v. Savage Manufacturing & Sales, Inc.*, 142 Ill. 2d 176 (1990)); *Hammond v. North American Asbestos Corp.*, 97 Ill. 2d 195, 208 (1983) (holding that the defendant that manufactured asbestos was under a nondelegable duty to produce a product that was reasonably safe and could not expect or rely on others to intervene and make its product safe); *Fuller v. Fend-All Co.*, 70 Ill. App. 3d 634, 638 (1979) (holding “the focus should be placed on the product itself and not the availability of any additional safety devices”).

¶ 96 In *Scott v. Dreis & Krump Manufacturing Co.*, 26 Ill. App. 3d 971, 976 (1975), the plaintiff was injured while operating a press brake pump manufactured by the defendant and brought an action in strict liability against the manufacturer. The jury returned a verdict in favor of the plaintiff and the defendant appealed, arguing that the trial court erred by not

allowing evidence that the owner of the machine, the plaintiff's employer, had the responsibility for selecting the appropriate safety device instead of the defendant. *Id.* at 977. In holding that the trial court correctly refused the evidence of the safety device, this court held that a manufacturer has a nondelegable duty to produce a product that is reasonably safe, and a machine may be unreasonably dangerous for failure to incorporate safety devices. "It therefore follows that a manufacturer cannot introduce evidence to show that the duty to incorporate the appropriate safety devices falls upon the purchaser of the product. To allow such evidence in circumstances where the appropriate safety devices have not been provided to the purchaser, would inject into the case an improper conclusion of law so far as the issues of strict liability are concerned." *Id.* at 988.

¶ 97 In *Kerns v. Lenox Machine Co.*, 74 Ill. App. 3d 194, 198-99 (1979), the defendant, in violation of an order *in limine*, tried to introduce evidence that demonstrated there were guards to the defendant's machine that were offered to the plaintiff's employer. In holding that the trial court did not abuse its discretion in granting the motion *in limine*, the Third District held, "[w]hen a manufacturer places into the channels of trade a finished product which should be provided with safety devices because without such it creates an unreasonable risk of harm, the fact that he expects someone else will install such [safety] devices should not give him an escape clause." *Kerns*, 74 Ill. App. 3d at 198 (quoting *Neal v. Whirl Air Flow Corp.*, 43 Ill. App. 3d 266, 272 (1976)).

¶ 98 Similar to *Scott* and *Kerns*, Federal Signal has a nondelegable duty to produce a reasonably safe product that cannot be shifted to the end user of the product, in this case the firemen of the city of Chicago. We note that the Chicago Fire Department required the purchase and installation of Federal Signal sirens on all of the city's fire trucks. Commander Raymond Kolasa, who wrote specifications for the Chicago Fire Department, testified that the fire department required all fire trucks "to be purchased with Federal Signal sirens." Whether other firemen in other fire departments were using hearing protection is irrelevant to whether the *product* was unreasonably dangerous as manufactured by Federal Signal. In this case, the firemen had no choice as consumers as to which sirens to use. They were required to perform their duties on trucks that were required to be outfitted with only Federal Signal sirens. Thus, the firemen had no choice. The product must not be unreasonably dangerous. Evidence of the union grievance demanding hearing protection for firefighters was also irrelevant. The design of the sirens manufactured by Federal Signal was at issue; Federal Signal was the party being sued, not the City of Chicago. The city's noncompliance with NFPA 1500 is also irrelevant to the issue of whether the *product* was unreasonably dangerous as manufactured by Federal Signal.

¶ 99 Also, the fact that Federal Signal was ostensibly manufacturing its sirens in compliance with the city's required adherence to the SAE J1849 standard for decibel levels² does not trump Federal Signal's duty to manufacture products that are not unreasonably dangerous.

²We note SAE J1849 also specifically recommends a maximum sound pressure level of 85 dB in the passenger area, but Federal Signal offers no explanation for its failure to follow this recommendation.

Federal Signal does not cite to any authority holding that a city's specifications for a product in its contract with a manufacturer somehow obviates the well-established tort principles of a manufacturer's strict liability for placing an unreasonably dangerous product in the stream of commerce.

¶ 100 While Federal Signal refers to the plaintiffs' "'ability to avoid danger by the exercise of care in the use of the product,'" relying on the mention of this factor in *Calles*, 224 Ill. 2d at 264, plaintiffs point out that Federal Signal cites no authority construing this particular factor under the risk-utility test as requiring the use of extraneous safety devices. The factor concerns the "'exercise of care *in the use of the product*'" (emphasis added) (*Calles*, 224 Ill. 2d at 264), and not to the use of safety devices extrinsic to the product in order to compensate for the product's unreasonably dangerous design. To establish a strict liability claim, plaintiffs are "required to present some evidence concerning the *absence of abnormal use* and the condition of the product when it left the defendant's control and/or *fault of the defendant in producing an unreasonably dangerous product*." (Emphases added.) *Phillips v. United States Waco Corp.*, 163 Ill. App. 3d 410, 416-17 (1987) (affirming grant of summary judgment in favor of the defendant (citing *Genus v. Pride Container Corp.*, 141 Ill. App. 3d 947 (1986), and *Ralston v. Casanova*, 129 Ill. App. 3d 1050, 1059-60 (1984))). Here there was no evidence of abnormal use of the sirens. Federal Signal cites to no evidence in the record that would establish plaintiffs did not exercise care.

¶ 101 Federal Signal also argues that it should have been allowed to introduce evidence of hearing protection in other departments in this trial because it was allowed to introduce such evidence in the "Track 1" trial, where it prevailed. While we may take judicial notice of other litigation, Federal Signal's reference to the admission of hearing protection evidence in the "Track 1" trial and the fact that in that case the jury returned a verdict in its favor are irrelevant to our review of the instant appeal. The "Track 1" case asserted different claims based on failure to warn and negligence, whereas the present case is an action based on strict liability for defective design. Federal Signal cites to no authority whereby our determination of this issue in the instant appeal would, or should, be impacted by the outcome in another case in which it was sued by different parties and on different claims.

¶ 102 Finally, even assuming *arguendo* the evidence of the use of hearing protection in other fire departments was relevant and probative, the trial court's ruling was not an abuse of discretion due to the danger of confusion and prejudice. As we stated in *Estate of Parks v. O'Young*, 289 Ill. App. 3d 976, 980-81 (1997):

"The admission of evidence is within the sound discretion of the trial court, and a reviewing court will not reverse the trial court unless that discretion is abused. [Citation.] Evidence, though relevant, may be excluded if its probative value is substantially outweighed by such factors as prejudice, confusion, or potential to mislead the jury. [Citation.] It is within the trial court's discretion to balance the probative value of evidence against its prejudicial impact or tendency to create confusion and to decide whether the evidence should be admitted." *Estate of Parks*, 289 Ill. App. 3d at 980-81.

¶ 103 Here, the trial court determined that any probative value of the evidence was substantially outweighed by the danger of confusion and prejudice. In its ruling barring Chief Flynn's

testimony regarding whether hearing protection was used in other fire departments, the court stated:

“Well, we’re not getting into that, Mr. Hall. We’re not getting into what other folks are doing. I don’t know where the relevancy of that is.

I understand as to benefits and risks involved and specifications can be part of the scenario and the standards in—in following the standards, but what other folks are doing or not doing, I believe, is not relevant enough and it could create a strong prejudice here that I think belongs outside the case.”

The court further found any evidence regarding the union grievance would be prejudicial.

¶ 104 We find the trial court’s determination was not an abuse of its discretion. The trial court did not abuse its discretion in barring evidence of hearing protection in other fire departments because Federal Signal has a nondelegable duty to make its product in a manner that is not unreasonably dangerous. The law does not place a duty on another party to make the product itself safer, whether it is the city or the firemen themselves.

¶ 105 We emphasize that our standard of review regarding evidentiary rulings is abuse of discretion. “An abuse of discretion occurs only when no reasonable person would rule as the trial court did.” *Blount v. Stroud*, 395 Ill. App. 3d 8, 31 (2009). Here, reasonable minds can disagree whether or not evidence of hearing protection in *other* fire departments should have been admitted under the risk utility test, especially where evidence was allowed regarding the use of hearing protection within the Chicago Fire Department, which was the employer of the plaintiffs in this case. Thus, we determine the trial court did not abuse its discretion in making this evidentiary ruling. We affirm the court’s denial of Federal Signal’s motion for judgment notwithstanding the verdict or, in the alternative, for a new trial.

¶ 106 CONCLUSION

¶ 107 We hold that to maintain an action in strict liability for design-defect, it is not a requirement for plaintiffs to prove a feasible alternative design; rather, a feasible alternative design is merely one of the factors to consider in determining whether a product is unreasonably dangerous. There is no exception that public safety devices require proof of a feasible alternative design to be deemed unreasonably dangerous under a strict liability theory. We also hold the trial court did not abuse its discretion in allowing Dr. Geddes’ testimony, as he was qualified and his opinion was not speculative. We further hold there is no requirement that an expert must have actually built an alternative design to establish a showing regarding a reasonable alternative design. Finally, we find that the trial court did not abuse its discretion in barring the testimony and evidence of hearing protection in other fire departments, as Federal Signal had a nondelegable duty to manufacture a product that is not unreasonably dangerous. Therefore, we affirm the trial court’s order denying Federal Signal’s motion for judgment notwithstanding the verdict or, in the alternative, a new trial.

¶ 108 Affirmed.

¶ 109 JUSTICE STERBA, specially concurring.

¶ 110 Although I concur in the result, I do not agree with the lead opinion’s reliance on the non-delegable duty principle in affirming the trial court’s evidentiary rulings and would affirm those rulings on other grounds, focusing primarily on the relevant factors under the risk-utility test and an analysis of the trial court’s actual rulings on the evidence in question.

¶ 111 As the lead opinion indicates, under the risk-utility test, a plaintiff must demonstrate that the danger of the product as designed outweighs its utility. *Supra* ¶ 62 (citing *Calles*, 224 Ill. 2d at 259). Although the risk-utility test requires consideration of numerous factors, the two factors for consideration enumerated in *Calles* that are relevant to Federal Signal’s arguments regarding the trial court’s evidentiary rulings are the factors that relate to the users of the product. First, as noted in the lead opinion, evidence regarding “[t]he user’s ability to avoid danger by the exercise of care in the use of the product” is relevant under the risk-utility test. (Internal quotation marks omitted.) *Supra* ¶ 89 (quoting *Calles*, 224 Ill. 2d at 264). The second relevant factor is “[t]he user’s anticipated awareness of the dangers inherent in the product and their [avoidability³], because of general public knowledge of the obvious condition of the product, or of the existence of suitable warnings or instructions.” (Internal quotation marks omitted.) *Calles*, 224 Ill. 2d at 264.

¶ 112 The dissent embraces Federal Signal’s arguments that the trial court improperly excluded evidence related to: (1) firefighter use of hearing protection; (2) a grievance filed by the union demanding hearing protection; and (3) training materials containing hearing protection recommendations. *Infra* ¶ 132 (Lavin, P.J., dissenting). However, a careful review of the offers of proof, the context in which the evidence was introduced, and the trial court’s specific rulings on the evidence in question demonstrates that Federal Signal’s arguments are not supported by the record.

¶ 113 First, Federal Signal sought to introduce evidence that many firefighters use hearing protection through the testimony of Dr. Kress, Flynn, and Doherty. Federal Signal contends that the trial court excluded all of this evidence. Federal Signal wanted to introduce testimony through Dr. Kress regarding a survey showing that 44 out of 45 Chicago-area fire departments use hearing protection. In a pretrial ruling on a motion to bar Dr. Kress’ testimony, the trial court noted that the survey could be relevant to the risk-utility test. However, the trial court said that it was a stretch to show the user’s awareness of the risk by a survey of the practices of other departments, and that if the survey had any probative value at all, it may not be enough to overcome the prejudicial effect of confusing the jury. The trial court further stated that Federal Signal could show awareness in other ways, so the survey was cumulative and confusing. At trial, Federal Signal argued that to counter plaintiffs’ assertion that the firefighters would not be able to do their jobs while wearing earplugs, it wanted to introduce evidence that other firefighters were able to do their jobs while using hearing protection. The trial court stated that the issue of practices of other departments may be relevant to both the risk-utility test and Federal Signal’s assumption of the risk defense, but the danger of introducing the survey through Dr. Kress was that it could lead to an

³The *Calles* opinion contains the word “availability” here, a typographical error.

inference that the practice of other fire departments could show what the Chicago Fire Department should have done. The trial court therefore asked what exactly Dr. Kress would say. Federal Signal stated that it was not sure it was even going to call Dr. Kress, and proceeded to present arguments related to other evidence it planned to introduce on this issue. Federal Signal never returned to the issue, and never attempted to introduce the testimony of Dr. Kress or the survey. Federal Signal abandoned the issue and thus, having waived it, cannot now complain that the trial court improperly excluded the evidence where it never pursued a definitive ruling on the issue. Moreover, the trial court appropriately expressed concern regarding the potential prejudicial effect of the evidence, considering the various theories pursued by Federal Signal, including its sole proximate cause defense, and correctly noted that Federal Signal could introduce evidence of the user's anticipated awareness for purposes of the risk-utility test in other ways.

¶ 114 After abandoning the issue of the introduction of the survey, Federal Signal stated that it planned to introduce evidence through the testimony of two plaintiffs that firefighters could do their jobs while using hearing protection. The trial court asked for offers of proof. Federal Signal said that Rodriguez would testify that he had seen a suburban fire company drive by and the firefighters were wearing earmuffs similar to what Rodriguez would wear when he would go to the shooting range. Federal Signal said that Doherty would testify that he was somewhat familiar with the practices of suburban fire companies and that he knew that firefighters at O'Hare airport used Clark headsets for hearing protection. Although the trial court's verbal ruling following the offers of proof was somewhat confusing, the trial court clearly stated that the issue of the plaintiffs' knowledge of what other departments do could be relevant to Federal Signal's assumption of risk theory and the risk-utility test. The trial court went on to explain that relevant evidence of assumption of risk is subjective, not objective. The court did not mention the risk-utility test again in this discussion. Following a recess, the trial court proposed an admonition to address the relevance of the conduct of other fire departments, but the parties could not agree on the wording of such an admonition and no admonition was given.

¶ 115 During the testimony of Rodriguez, Federal Signal made no attempt to introduce evidence of the use of hearing protection by other fire departments or within the Chicago Fire Department. In contrast, Doherty was asked about his knowledge of the use of hearing protection in other departments. As noted in the lead opinion, the trial court made it clear that Doherty could testify regarding whether or not he had personally seen other firefighters wearing hearing protection; he just could not say where those firefighters worked. *Supra* ¶ 90. The trial court correctly noted that the department for which the firefighters worked was not relevant to the general issue of whether or not Doherty had observed the use of hearing protection by other firefighters. Moreover, for purposes of the risk-utility test, Doherty's testimony of what he personally had observed carried minimal relevance where the risk-utility test focuses on the objective analysis of the awareness of the user in general, not the subjective awareness of a particular firefighter. To the extent that Doherty's testimony was relevant to the objective risk-utility factors at all, it could only have been through an inference that if a particular firefighter observed others wearing hearing protection, perhaps hearing protection was commonly used and the average firefighter would have been aware

of hearing protection use. Thus, the trial court did not abuse its discretion in allowing testimony that Doherty had observed other firefighters wearing hearing protection, while barring testimony regarding which departments those firefighters worked for as irrelevant.

¶ 116 Finally, prior to Flynn’s testimony, Federal Signal argued that Flynn should be allowed to testify that he had seen firefighters using hearing protection and had allowed workers on his crew to use hearing protection. The trial court initially stated that the evidence went to assumption of risk, a subjective inquiry. However, after considering Federal Signal’s response, the trial court agreed that the evidence could be admitted because it was relevant to the risk-utility test. Flynn then testified that the Chicago Fire Department issued hearing protection to firefighters at both O’Hare and Midway airports. He stated that he recalled men on his crews who used hearing protection and that he never told them not to do it. Thus, as explained in the lead opinion, Flynn’s testimony regarding the use of hearing protection by firefighters was in fact heard by the jury. *Supra* ¶¶ 91-93.

¶ 117 Federal Signal next contends that the trial court improperly excluded evidence of the union grievance. Prior to trial, the plaintiffs’ motion to bar evidence of the union grievance was denied. At the “Track 1” trial, Flynn testified that he was a member of the safety and health committee and that the firefighters’ union had raised a grievance with the committee regarding hearing protection. Flynn further testified that because the Chicago Fire Department had the results of a previous study conducted by the Illinois Department of Labor (IDOL study) showing that the sirens complied with the relevant standards, the committee sent the union a letter with the test results, concluding that the Chicago Fire Department did not have a problem with hearing protection. In the case *sub judice*, another of the trial court’s pretrial rulings involved the admission of evidence relating to the union grievance. Federal Signal argued for the admission of this evidence under its sole proximate cause theory. The trial court stated that its primary concern was that the mention of the union could prejudice the jury where the union was not a party to the suit, unless Federal Signal could show that the union played a role in the intervening causation under its sole proximate cause theory. Prior to Flynn’s testimony at trial, Federal Signal again argued that Flynn should be allowed to testify regarding the union grievance under its sole proximate cause theory. The trial court ruled that there would be no mention of the union because of the risk of prejudice, but said it would allow testimony related to both the IDOL study and standards and specifications because that evidence was relevant to the risk-utility factors. Flynn then testified that an IDOL study was conducted as a result of a safety meeting at which concerns were raised regarding hearing problems.

¶ 118 In my view, the trial court did not err in allowing this evidence to come in while barring any mention that the concerns regarding hearing protection had been raised by the union. The trial court was faced with multiple theories and various reasons for the introduction of the evidence and reasonably balanced the probative value of the evidence against its prejudicial effect while weighing these competing theories. Notably, Federal Signal never argued for admission of this evidence at trial under the risk-utility factors, and it was the trial court that noted that portions of this evidence could be relevant to the risk-utility test. Federal Signal could have questioned Flynn further regarding the knowledge of the average firefighter of both the concerns raised at the safety committee meeting and the IDOL study without

mentioning the union, to show awareness under the risk-utility factors. However, Federal Signal chose not to do so and focused instead on its sole proximate cause theory. Moreover, because the IDOL study showed that the Chicago Fire Department did not have a hearing protection issue, questioning along these lines would have demonstrated the opposite of what Federal Signal is claiming on appeal, because it would have been evidence that the average firefighter might have believed that he did not need hearing protection.

¶ 119 Federal Signal’s final argument regarding the trial court’s evidentiary rulings relates to its attempted introduction of the International Fire Service Training Association (IFSTA) training materials. A careful review of the record discloses that Federal Signal has waived this argument. In pretrial discussions on the IFSTA training manual, Federal Signal argued that the evidence was relevant to both its assumption of risk and sole proximate cause theories. It did not mention the risk-utility factors. The trial court’s written order on the plaintiffs’ motion to bar evidence of warnings and standards, including the IFSTA training materials, focused exclusively on the assumption of risk and sole proximate cause theories. The order noted that, based on offers of proof at pretrial hearings, there was little proof that purported warnings and industry standards were ever disseminated to rank and file employees. However, the court noted that the IFSTA materials could be used to demonstrate actual knowledge by the plaintiffs; again, focusing on the subjective assumption of risk theory. At trial, Federal Signal attempted to introduce a version of the IFSTA training manual through the testimony of Rodriguez under its assumption of risk theory. The trial court noted that the assumption of risk theory requires subjective knowledge and ruled that the authentication for a later version of the manual that Rodriguez had not seen was too weak for admission. Federal Signal later attempted to introduce the IFSTA manual through the testimony of Flynn, arguing that it could establish the proper foundation for the evidence with Flynn that it was unable to establish through individual plaintiffs. Accordingly, the trial court reserved ruling on the issue, stating that it needed to review its previous written order on the issue first. Federal Signal never attempted to revisit the issue during Flynn’s testimony and rested without asking for a final ruling from the trial court. Therefore, this issue has been waived.

¶ 120 As noted in the lead opinion, a trial court’s evidentiary rulings are reviewed for an abuse of discretion. *Supra* ¶ 89 (citing *Piser*, 405 Ill. App. 3d at 350). An abuse of discretion is found only where the decision is “arbitrary, fanciful or unreasonable” (internal quotation marks omitted) (*People v. Illgen*, 145 Ill. 2d 353, 364 (1991)) or “where no reasonable person would agree with the position adopted by the trial court” (*Schwartz v. Cortelloni*, 177 Ill. 2d 166, 176 (1997)). A determination that the probative value of the evidence is outweighed by its prejudicial effect is a matter left to the sound discretion of the trial court. *Illgen*, 145 Ill. 2d at 375. As demonstrated, the majority of the evidence Federal Signal complains about either was not properly submitted to the trial court for admission or Federal Signal abandoned any attempt to introduce it at trial. In some cases, the evidence was actually admitted. The trial court did not abuse its discretion in restricting the mention of specific departments during Doherty’s testimony, which had limited probative value under the risk-utility test in any event. Nor did the trial court abuse its discretion in allowing evidence of the hearing protection complaint raised with the safety committee without

allowing evidence that the firefighters' union actually filed the complaint. On these grounds, I would affirm the trial court's evidentiary rulings.

¶ 121 PRESIDING JUSTICE LAVIN, dissenting.

¶ 122 I respectfully dissent because I believe plaintiffs' expert was in no way qualified to render an opinion that the sirens in question were unreasonably dangerous. His testimony also demonstrably failed to establish that he could come up with a feasible, alternative design of a siren that would comply with the existing standards while still offering protection to firefighters. Furthermore, I believe the trial court committed reversible error in limiting competent evidence that tended to show that firefighters could ameliorate the risk of exposure to sirens by use of hearing protection.

¶ 123 Nearly 50 years ago, our supreme court joined many other jurisdictions by accepting the doctrine of strict liability in tort which held that a manufacturer may be liable if it was demonstrated that its product was unreasonably dangerous. *Suvada v. White Motor Co.*, 32 Ill. 2d 612, 621 (1965), *overruled on other grounds by Frazer v. A.F. Munsterman, Inc.*, 123 Ill. 2d 245 (1988). Since that time, our supreme court has determined that a product may be unreasonably dangerous if the product is "dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics," or if the magnitude of the product's danger outweighs its utility. (Internal quotation marks omitted.) *Calles v. Scripto-Tokai Corp.*, 224 Ill. 2d 247, 254, 259 (2007); Illinois Pattern Jury Instructions, Civil, Nos. 400.06, 400.06A (2011). The cases interpreting the potential liability of manufacturers in the decades since *Suvada* are legion, but all of them essentially revolve around the understanding that many products have inherent dangers and that consumers should not be expected to bear the loss resulting from their exposure to unreasonable peril. The main purpose of strict liability is to place the loss to the public caused by defective products upon those entities that create the risk and reap the profit from depositing a defective product into the stream of commerce. *Liberty Mutual Insurance Co. v. Williams Machine & Tool Co.*, 62 Ill. 2d 77, 82 (1975).

¶ 124 Here, the trial court's evidentiary rulings do not further these policies. Several factors are at play. First, plaintiffs' liability expert's testimony demonstrates that his alleged expertise did not enable him to render a reliable opinion concerning whether the sirens were unreasonably dangerous or whether a feasible, alternative design could be manufactured. In addition, there can be little doubt of the public's general knowledge of the obvious, blaring loudness of fire truck sirens. All one has to do is stand at the corner of State and Madison and watch as pedestrians stop and cover their ears when a fire truck goes by, lights flashing and siren blaring. Next, one does not need an advanced degree to observe that people repeatedly exposed to loud noises often use hearing protection, so it follows that professional firefighters can, and often do, take steps to minimize the effect of loud sirens to which they are exposed on a daily basis by using some form of hearing protection. Finally, the manufacturer of the fire truck can take steps to better soundproof the cab to protect the hearing of firefighters who are regularly exposed to its siren.

¶ 125 Very few people would argue with the proposition that an emergency siren on a fire truck

is an important public safety product. Fewer still would dispute that fire truck sirens are, by necessity, loud. There are many reasonable explanations that justify the blaring nature of fire truck sirens, of course. They are designed to be loud to alert motorists and pedestrians ahead of the fire truck of its oncoming presence. Drivers and pedestrians who might approach a fire truck with activated emergency equipment from the side are also in need of visual and audible evidence of the oncoming fire truck, for their protection, the protection of those aboard the fire truck and for the protection of those in potential or active peril at the scene of the emergency that prompted the call. For these reasons, fire truck sirens are required by state law to be very loud in a forward direction to help ensure that the firemen will get to the scene of the emergency that impelled its operator to activate the emergency equipment in the first place. 625 ILCS 5/11-1421(a), 12-601(b) (West 2004). Furthermore, testimony in this case showed that all fire trucks sold to the Chicago Fire Department (CFD) must include sirens complying with industry standards promulgated by the Society of Automotive Engineers (SAE), including SAE J1849, which requires that sirens emit blaring sound at angles to the side, to minimize the risk of a collision with motorists coming toward the truck from the side.

¶ 126 It is uncontradicted that defendant's sirens complied with all of these statutory, industry and contractual requirements. In order to prove their *prima facie* case that the sirens were unreasonably dangerous, plaintiffs produced an acoustics expert who had never worked with sirens in his professional career. He was also to testify about his "design" of a siren that would protect the firefighters and still comply with these regulations and statutes. A careful reading of the vague, hypothetical and rather meager opinions of this expert, Dr. Geddes, shows that the trial court should have struck his testimony and granted defendant's motion for a directed verdict, as Dr. Geddes' testimony was the only evidence presented by plaintiffs suggesting that defendant's product was unreasonably dangerous.⁴

¶ 127 The proponent of expert testimony has the burden of establishing that the proffered opinion is entitled to admission into evidence. *Volpe v. IKO Industries, Ltd.*, 327 Ill. App. 3d 567, 577 (2002). In addition, the trial court must look beyond an expert's conclusion to assess the adequacy of its foundation, as an expert's opinion is only as valid as the reasons and bases for his opinion. *Soto v. Gaytan*, 313 Ill. App. 3d 137, 146 (2000). Scrutiny of expert opinion is necessary because such opinion evidence bears an aura of trustworthiness and reliability. *Id.* "When an expert testifies simply that plaintiff should win but is unable to support that conclusion with reasoned analysis, the expert's testimony is worthless, provides no assistance to the jury, and should be stricken." *Kleiss v. Cassida*, 297 Ill. App. 3d 165, 174 (1998).

¶ 128 Here, Geddes' testimony was devoid of any merit. Although Geddes was educated in physics and specialized in acoustics, he had absolutely no experience with sirens until

⁴At oral argument, defendant made clear that it is not claiming that plaintiffs had any legal duty to supply evidence of a feasible, alternative design, but rather, is suggesting that plaintiffs had demonstrably failed to make a *prima facie* case that the sirens were unreasonably dangerous in the way claimed because of a failure to measure up to the risk-utility analysis required under Illinois case law.

approached by plaintiffs' attorney. After Geddes testified, it was abundantly clear that his acoustics expertise was no substitute for expertise in siren design. Geddes testified that he had patents with respect to noise control but did not offer a clue of how his knowledge with respect to those devices extended to the siren at issue here. Indeed, Geddes acknowledged that "noise control can take on a number of different flavors." Geddes concluded that "it's perfectly reasonable to have made sirens that would not have emitted sound in the rearward direction to the point where they would be dangerous," but effectively provided no basis for that opinion.

¶ 129 Remarkably enough, he admitted that he was unaware of the existence of standards about side deflection of siren sounds until he was spoon-fed the applicable standard by plaintiffs' attorney the day before his deposition. When asked whether either his calculations would meet the requirements for loudness off to the side, he responded, "I'm saying that based upon my experience and in my professional opinion, I *could* design a siren that would meet those criteria" (emphasis added), not that he had. Specifically, he testified that he had not built such a siren and that the design he currently had *may* accomplish that. See also *Volpe*, 327 Ill. App. 3d at 572, 575-77 (the trial court properly struck expert testimony that the defendant's product was defective where the expert had no experience with the particular product, had not made a specific design for the alternative device, had never seen such a device, provided no model or test results, and acknowledged that another expert would be needed to assess the feasibility of designing such a device). He also admitted, however, that "most of the time," after creating a model, the devices he builds based on models do not quite work as expected. The testimony of an expert in this case would be appropriate because the subject matter could be properly described as being "beyond the ken" of the average juror. In truth, the subject matter was not entirely "within the ken" of this witness and his testimony should have been stricken.

¶ 130 In the long history of this Illinois litigation, plaintiffs have never offered evidence of a commercially available siren that would comply with the various requirements while still offering the protection that plaintiffs allege can be provided. Similarly, plaintiffs have not produced a prototype of such a siren. This is particularly problematic where, as here, Geddes' testimony suggests only that he is confident that he could design a siren that met the requirements regarding sound to the side of the fire truck, not that he had done so as of yet, and his testimony suggests that he would be unable to do so without testing a prototype. Any modicum of foundation for Geddes' opinion was vitiated on cross-examination. The risk of prejudice from Geddes' speculation far outweighed any probative value given that his testimony did not accomplish the purpose for which it was presented, to demonstrate that a reasonably feasible alternative design existed and thus, defendant's product was unreasonably dangerous. Absent Geddes' testimony, plaintiffs had no remaining evidence indicating that defendant's product was unreasonably dangerous.

¶ 131 Even were one to assume the trial court properly permitted the jury to consider Dr. Geddes' testimony, the trial court unfairly restricted the evidence that defendant put forward on the issue of the ability of firefighters to minimize any potential risk from siren exposure by utilizing hearing protection. This jury should have heard the evidence offered by the manufacturer on this critical subject because it was quite probative on the issue of whether

the sirens were unreasonably dangerous when viewed under the risk-utility test, which, as stated, is the appropriate legal standard in our state for this sort of product liability case. *Calles*, 224 Ill. 2d at 259. The nonexhaustive factors to be considered in this standard include the *user's ability to avoid any danger through the exercise of care* when using the product, as well as the user's anticipated awareness of the product's inherent dangers *because of the public's general knowledge as to the product's obvious condition*. *Id.* at 264-66.

¶ 132 Here, defendant sought the admission of evidence indicating that (1) many firefighters wear hearing protection; (2) Chicago firefighters had previously filed a union grievance with the CFD requesting hearing protection in compliance with industry standards; and (3) the International Fire Service Training Association (IFSTA), which develops fire service training materials, recommends the use of hearing protection. Such evidence, in the form of the union grievance and the IFSTA manual, as well as testimony by Dr. Tyler Kress, CFD Safety Director Chief Flynn and plaintiff Doherty, was clearly relevant to both of the aforementioned factors. In addition, the trial court's determination that the manual was relevant only if these particular plaintiffs may have seen the manual mistakenly transformed the risk-utility analysis into a subjective inquiry, rather than an objective one. Furthermore, the trial court's refusal to admit evidence regarding other firefighters' use of safety devices, finding "what other folks are doing" to be irrelevant, was at odds with the trial court instructing the jury to consider whether an ordinary firefighter would appreciate the risk of hearing loss from being exposed to loud sirens. Thus, the court abused its discretion by barring the proffered evidence as being irrelevant to the risk-utility test. Evidence regarding hearing protection was relevant to the jury's assessment of whether defendant's product was unreasonably dangerous. This court should not speculate as to whether the addition of such evidence would have nonetheless led to the same verdict or, similar to the related trials, the jury would have found in favor of defendant. The prejudice in this case is all the more apparent from plaintiff's theory submitted to the jury that firefighters were incapable of wearing hearing protection while still properly performing their professional duties.

¶ 133 The majority opinion goes to some length to diminish the potential significance of the barred evidence about hearing protection, primarily relying on the principle that a manufacturer has a nondelegable duty to produce a product which is not unreasonably dangerous, as stated in *Rios v. Niagara Machine & Tool Works*, 59 Ill. 2d 79, 85 (1974) (citing *Bexiga v. Havir Manufacturing Corp.*, 290 A.2d 281, 285 (N.J. 1972)). Although the majority correctly states the aforementioned rule, it does not apply the rule in a manner consistent with other important principles and policies concerning product liability. It bears noting that the nature of a defendant's nondelegable duty presents a separate issue from whether a product is unreasonably dangerous. Thus, even pursuant to the rule relied on, a manufacturer may have complied with its nondelegable duty to ensure that a product is not unreasonably dangerous if an ordinary user could avoid danger through the exercise of care when using the product in question, *i.e.*, using hearing protection.

¶ 134 The majority also notes that defendant failed to cite any case law applying the exercise of care factor to an extrinsic, freestanding safety device such as hearing protection. Although our own research reveals none, we find no meaningful reason to exclude the use of extrinsic devices from this factor. Stating the obvious, one can avoid danger posed by loud noises

through the use of hearing protection. Although the jury is entitled to determine whether the ordinary firefighter would know that the loud noise was so dangerous as to require hearing protection, that speaks to the factor concerning the user's anticipated awareness of the inherent danger, not the factor concerning whether the exercise of proper care will alleviate the danger. Thus, these two factors considered together permit a jury to balance the risk and utility of the product. Even assuming that no previously enumerated factor includes the ordinary user's ability to use extrinsic safety devices, the factors under the risk-utility test are nonexhaustive. Because the ability of an ordinary user to protect himself with extrinsic devices reduces risk, a jury should be able to consider such evidence under the risk-utility test.

¶ 135 Not only is there good reason to consider the availability of extrinsic safety devices, but considering such evidence does not run afoul of existing Illinois case law. The cases relied on by the majority for the proposition that a manufacturer cannot rely upon an end user to make its product more safe involved situations where the manufacturer wrongfully expected another party to make modifications to the product itself. See *Dillard v. Walsh Press & Die Co.*, 224 Ill. App. 3d 269, 278-79 (1991) (a manufacturer cannot expect someone else to modify a finished product by installing safety devices on the product itself); *Kerns v. Lenox Machine Co.*, 74 Ill. App. 3d 194, 197-98 (1979) (same); *Scott v. Dreis & Krump Manufacturing Co.*, 26 Ill. App. 3d 971, 988 (1975) (a manufacturer cannot introduce evidence to demonstrate that the purchaser of the product had the duty to install safety devices to the product). The hearing protection at issue is a far cry from a product that requires after-market modifications like pinch-point guarding on a punch press or other type of machine. Limiting evidence of hearing protection in the case *sub judice* is akin to barring a manufacturer of a welding torch from presenting evidence of the availability of protective clothing and eye protection and the custom and practice in the industry for their use.

¶ 136 Hearing protection aside, it is beyond argument that there is comforting logic to be found in cases relying on the aforementioned nondelegable duty, because it would be frightful public policy indeed if the law were to allow a manufacturer of a punch press, for example, to assume that the factory owner who purchased machinery would faithfully install and assemble all necessary safety equipment to protect those who operate the press in the workplace. As applied by the majority, however, this logic falters in the case of the manufacturer of a product like a fire siren, which is but a component in the fire truck itself. As stated, in *Rios*, our supreme court relied on the Supreme Court of New Jersey's decision in *Bexiga* in determining that a manufacturer has a nondelegable duty to produce a product which is not reasonably dangerous. Subsequently, however, in *Zaza v. Marquess & Nell, Inc.*, 675 A.2d 620, 629 (N.J. 1996), the same court acknowledged the *Bexiga* decision as well as the hardship that would be placed on a component manufacturer by requiring that manufacturer to scrutinize the final product, despite that the component manufacturer had no role in developing the final product and lacked sophistication as to the final product. The court also stated, "[t]he majority of courts from other jurisdictions have held that a manufacturer of a component part, which is not dangerous until it is integrated by the owner into a larger system, cannot be held strictly liable to an injured employee for the failure of the owner and/or assembler to install safety devices, so long as the specifications provided

are not so obviously dangerous that it would be unreasonable to follow them.” *Id.* (cases compiled therein). The policies addressed in these cases find further support in Illinois.

¶ 137 In *Suvada*, our supreme court held that lack of privity is not a defense in a tort action against a manufacturer and that the manufacturer of a component part may be held liable. *Suvada*, 32 Ill. 2d at 617. In doing so, the court adopted section 402A of the Restatement (Second) of Torts (*Suvada*, 32 Ill. 2d at 621), which essentially states that a party who sells a product in a defective condition unreasonably dangerous to the consumer is liable for harm caused by the product if the seller is in the business of selling such products and the product “is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.” Restatement (Second) of Torts § 402A (1965). Section 402A further specifies that the lack of contractual relationship with the seller is irrelevant. This section also contains, however, a caveat stating that “[t]he Institute expresses no opinion as to whether the rules stated in this Section may not apply to *** the seller of a component part of a product to be assembled.” *Id.* In addition, comment q adds that the question is whether responsibility is shifted to the assembler.

¶ 138 In *Suvada*, the brake system manufactured by the defendant, and later incorporated into a vehicle, failed. The supreme court rejected the suggestion that the defendant manufacturer of the component part should not be held strictly liable where the brake system had not been altered but, rather, had been merely installed. *Suvada*, 32 Ill. 2d at 614, 623. Unlike the siren here, which may have become unreasonably dangerous only upon assembly into the fire truck, it appears that in *Suvada*, the component part itself was clearly defective, as it did not act as expected.

¶ 139 In *Thomas v. Kaiser Agricultural Chemicals*, 81 Ill. 2d 206, 216 (1980), the supreme court rejected the argument made by the defendant manufacturer of a component part that the defendant should be relieved of liability because there was testimony that the component part itself was in an unreasonably dangerous condition. Specifically, there was testimony that an *existing feature* of the component part was unreasonably dangerous. *Id.* at 213, 216. In contrast, here, plaintiffs complain of the absence of a feature. Furthermore, the supreme court reiterated in *Pasquale v. Speed Products Engineering*, 166 Ill. 2d 337, 351 (1995), that “a component part manufacturer can be held strictly liable where the assembler made no substantial change in the part and the injury is directly attributable to a defect in the component part.”

¶ 140 Although never expressly adopted by our supreme court, following *Pasquale*, section 5 of the Restatement (Third) of Torts: Products Liability was issued and specifically addresses component parts.

“One engaged in the business of selling or otherwise distributing product components who sells or distributes a component is subject to liability for harm to persons or property caused by a product into which the component is integrated if:

(a) the component is defective in itself, as defined in this Chapter, and the defect causes the harm; or

(b)(1) the seller or distributor of the component substantially participates in the integration of the component into the design of the product; and

(2) the integration of the component causes the product to be defective, as defined in this Chapter; and

(3) the defect in the product causes the harm.” Restatement (Third) of Torts: Products Liability § 5 (1998).

Furthermore, a line of Illinois Appellate Court decisions has addressed component parts in a similar manner.

¶ 141 “The law in Illinois is clear that the obligation that gives rise to a duty to avoid reasonably foreseeable injury to another does not extend to the anticipation of how manufactured components, not themselves inherently dangerous or defective, can become potentially dangerous when integrated into a unit designed, assembled, installed, and sold by another.” *Rotzoll v. Overhead Door Corp.*, 289 Ill. App. 3d 410, 414 (1997). Because the manufacturer of a component part has no control over the component after it has been sold and has no control over its use in the assembly of a final product, that manufacturer has no obligation to anticipate how the component will become unreasonably dangerous as used in the assembly of the final product. *Depre v. Power Climber, Inc.*, 263 Ill. App. 3d 116, 118 (1994); *Loos v. American Energy Savers, Inc.*, 168 Ill. App. 3d 558, 563 (1988). In addition, the defendant component part manufacturer has no duty to inquire as to the nature of the use and assembly of the final product. See *Rotzoll*, 289 Ill. App. 3d at 417; see *Curry v. Louis Allis Co.*, 100 Ill. App. 3d 910, 915 (1981) (“Thus it would be absurd to hold the maker of some component *** liable because the assembler of the total machine did not put safety guards on it.”); but see *Duffy v. Togher*, 382 Ill. App. 3d 1, 17-18, 20 (2008) (summary judgment was improper where a genuine issue of material fact existed as to whether the component part manufacturer had sufficient information to judge the appropriateness of its part, a pool liner, for the larger product, a swimming pool).

¶ 142 In *Sparacino v. Andover Controls Corp.*, 227 Ill. App. 3d 980, 985-86 (1992), the reviewing court rejected the plaintiff’s claim that the manufacturer of a component part failed to add a safety feature to its product where that manufacturer played no role in the design of the final product and was not given specifications regarding its design. In rejecting the plaintiff’s reliance on cases addressing the aforementioned nondelegable duty principle, including *Rios*, the court observed that such cases involved the assembler of the final product, which had the power to install a safety device. *Id.* at 985; *Curry*, 100 Ill. App. 3d at 915. The court found that in contrast, the manufacturer of a component part has no control over the assembly of the final product. *Sparacino*, 227 Ill. App. 3d at 985-86. As a result, the duty to avoid a reasonably foreseeable injury to another does not extend to how manufactured components that are not in themselves defective may become potentially dangerous upon integration into a unit assembled by another. *Id.* at 986; *Woods v. Graham Engineering Corp.*, 183 Ill. App. 3d 337, 341-42 (1989). In addition, the court found that the component was not inherently dangerous because it performed precisely as intended and there was no evidence that it malfunctioned or was inherently dangerous. Because the component part alone was not defective but only became dangerous as installed and programmed by another party, summary judgment in favor of the manufacturer of the component was appropriate. *Sparacino*, 227 Ill. App. 3d at 986.

- ¶ 143 Similarly, in *Ruegger v. International Harvester Co.*, 216 Ill. App. 3d 121, 123, 125-28 (1991), the reviewing court found summary judgment in favor of the manufacturer of a component part, specifically a cab-chassis, was proper where the ultimate makeup of the cab-chassis was determined after the defendant sold it. The court found that the cab-chassis did not leave defendant's control in a dangerous condition because any dangerous condition arose from the later assembly and usage of the cab-chassis, not from the manufacture by the defendant.
- ¶ 144 In this case, defendant filed an affirmative defense asserting it could not be liable because it was the manufacturer only of a component that was to be affixed to the fire trucks in question and that the level of sound to which users of the fire trucks are exposed was outside defendant's knowledge or control. Specifically, defendant argued that such exposure is determined by the placement of the siren on the apparatus, the level of insulation of the cab and other components. Defendant made the same argument before the jury. In addition, Commander Kolasa testified that he only purchased complete vehicles for the CFD. Bader also testified that defendant sold sirens to customers around the world and that the level of sound in the cab of a fire truck depended on several factors, including the cab's insulation, its windows and the metal used in the truck. Furthermore, although defendant is clearly aware that its sirens are to be assembled into fire trucks of some kind, it has not been suggested that defendant receives information concerning the specifications for every truck or ambulance into which its sirens are implemented and plaintiffs have not alleged defendant played any role in the design of trucks sold to the CFD. Thus, defendant has no meaningful way to test the sound levels inside a multitude of different cab models when those models are not within defendant's control. Furthermore, the very nature of defendant's claim, that the siren is unreasonably dangerous only in conjunction with the cab, suggests that the defect may not lie in the siren itself but, rather, in the fire truck as assembled with all components affecting sound levels in the cab. This discrete issue was squarely before the court and jury.
- ¶ 145 Although defendant has not pursued component part case law in its appellate brief, the nature of the siren as a component part assembled into a larger final product rebuts the majority's overly broad interpretation of the nondelegable duty principle and the majority's implication that this principle requires the manufacturer of a component part to be liable for any harm resulting from a final product that incorporated the component, even where other entities and parties are far better suited to anticipate and remedy the harm. The nondelegable duty principle did not render evidence regarding hearing protection inadmissible. Given that this defendant manufactured a component of the fire truck which could have been made less risky to the end user if hearing protection had been utilized, the trial court should have exercised its discretion and allowed defendant to present evidence on this subject.
- ¶ 146 The trial judge ruled that the excluded evidence was not relevant to the issues in the trial, but under these described circumstances, I believe that the rulings of our learned colleague below were an abuse of discretion that warrants reversal. Stating the obvious, if a jury is entitled to find that the public is generally aware that loud sirens are inherently dangerous, it follows that the jury should hear of the ways that professionals in the field deal with the dangers presented. It is indubitably relevant to admit this sort of evidence in a case where the jury is expected to weigh the risks and benefits of a product that is no small cog in the critical

lifesaving work of professional firefighters. In my judgment, the trial judge should have allowed defendant to fully inform the jury, rather than to merely allow some limited evidence on the subject. The barred evidence was not of a volume that would suggest that it was in any way cumulative and none of it was collateral to the issues in the trial.

¶ 147 In this trial, these plaintiffs claimed that they were unable to wear hearing protection and still do their job, even as some admitted to wearing hearing protection at various times while others testified to an unawareness of the danger to their hearing from these loud sirens. Despite these contentions, their union filed a grievance against the city, demanding provision of this sort of hearing protection and virtually every other fire department in the area required hearing protection. To say that the latter evidence would be relevant in determining the accuracy of the former evidence is the apogee of understatement. It is also clear that such evidence would tend to establish that there existed very simple and practical means available to obviate or reduce the risk from the loud sirens. In this regard, the jury was deprived of important evidence and defendant's ability to persuade the jury was compromised. In a case in which the plaintiffs' expert's theory was gossamer-thin, this evidence could have played a crucial role in the jury's deliberations.

¶ 148 Accordingly, I would reverse the jury's verdict outright and enter judgment for the defendant on the expert witness issue. If the only issue were the evidence related to hearing protection, I would remand for a new trial in which defendant would be permitted to present its evidence concerning hearing protection to the jury.