What's in a Defect?

by Leslie Mitchell Kroeger, Diana L. Martin and Poorad Razavi

The title of this section of the *Journal* is Products Liability. Each month, various types of defective products and corresponding litigation are described in hopes of educating you and warning you about what's literally in your backyard. But regardless of your legal acumen or experience level, it's often good to take a step back and rethink the basics.

Black's Law Dictionary (11th ed. 2019) defines products liability as: "1. A manufacturer's or seller's tort liability for any damages or injuries suffered by a buyer, user, or bystander as a result of a defective product. Products liability can be based on a theory of negligence, strict liability, or breach of warranty. 2. The legal theory by which liability is imposed on the manufacturer or seller of a defective product. 3. The field of law dealing with this theory. — Also termed *product liability*; (specif.) *manufacturer's liability.* See LIABILITY; 402A ACTION. —products-liability, *adj.*"

Seems simple enough. A company makes and sells a product. Your client uses it. Your client gets hurt. There must be a defect. Well, maybe — let's look a little closer.

Products don't just magically appear on store shelves or in Amazon's inventory; they start in someone's imagination. Often that someone is working in a marketing department and looking for something new to sell to make more profit for themselves or their company. Regardless of where a product starts, at every step in the process, from imagination, design, testing, and manufacture, through sale, there is a duty to act with reasonable care toward the end user.

So, what's in a design? Glad you asked. Google, Bing, Yahoo!, and even YouTube will give you a ton of ideas about various ways to design a product, should one choose to go that route. The preferred choice, however, involves highly educated personnel trained in engineering theories of design, testing, production, and, most importantly, Failure Mode and Effects Analysis (FMEA). When taking an idea and reducing it to paper and then to production, it's vital to know every way in which that product can fail. And should it fail, what would be the ultimate result to the end user? Knowing how a product fails allows engineers to improve the design and hopefully design out that particular failure mode. If the product cannot be redesigned to eliminate that failure, then the exercise of reasonable care requires that an adequate warning be provided to consumers in order to allow users of the product to fully understand the risk.

What happens when a known failure isn't designed out? A classic example that comes to mind is the Ford Pinto. When the Pinto was being designed in the late 1960s, there was a marketing need for smaller vehicles. The Pinto was "not to weigh an ounce over 2,000 pounds and not cost a cent over $2,000."[1] Unfortunately, when crash tests were run during the design and production phase, the gas tank ruptured in crashes over 25 mph. The rupture of a fuel tank was a known failure that would lead to risks of fires, injuries, and deaths. The redesign involved placing a rubber bladder in the gas tank. This would not have stopped the tank from rupturing, but it would have prevented the fuel from leaking and a fire starting. The cost of the bladder would have been $5.08. It wasn't added. The failure mode and risks still existed. So, what warning did Ford release? Was it:

"Danger! Fuel tank will rupture if hit from rear. Fuel tank rupture could lead to fire, injury, or death."

Clearly that would not have been a good selling point and so, of course, no warning was given. Pintos were sold. Crashes took place. Fuel tanks ruptured, and the aftermath of injuries and deaths was not only horrific, but entirely preventable.

Wasn't anyone paying attention? Fortunately, our federal government has established safety standards for products sold in the United States. Unfortunately, those standards are *minimum* safety standards that allow the companies to self-authenticate their test-

ing, choose what information they submit to the government for approval, and frankly just don't keep up with new design technology and safety issues.

For instance, when the Pinto was designed, the Federal Motor Vehicle Safety Standard (FMVSS) for fuel integrity only required a front barrier crash. The 1971-1976 Pintos had no rear crash testing of the fuel tank, and Ford claimed that "the Pinto had met all applicable safety standards for fuel system integrity."[2] No apparent challenges were made to Ford's claim until the fires, injuries, and deaths began occurring.

What Happens After the Design?

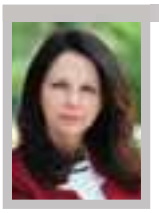
Even with the best design possible there can still be problems. How? Well, the product still has to be physically produced. Whether that's through machinery, by hand, or some combination of both, mistakes or intentional acts can cause a defect. While there are manufacturing plants located within the United States, there are many more products whose production is outsourced, or which originate from foreign countries. Differences in quality can become apparent based upon the origin of production. Regardless of where production happens, miscommunication in production instructions and fine details can lead to serious errors. Lack of training of employees can lead to steps being missed or disregarded as unimportant. Overworked employees trying to meet quotas can result in defects.

One would think that as production facilities become more automated, fewer manufacturing errors would take place. That depends upon the programming of machinery, the quality control implemented, and the few remaining human beings making sure all goes well. Examples can be found within the tire manufacturing process. Tires have many different parts which can lead to a multitude of problems during the production process. There are beads, belts, ply, sidewalls, tread, and specific blends of chemicals and rubber dependent upon the individual manufacturer. Ingredients are blended, cooled, milled, coated, constructed, and cured.[3] Lots of moving parts, lots of processes, and lots of room for error. Misplacement of a ply layer, improper blending of chemicals, or water or other foreign substance, e.g., sweat, can wreak havoc on the quality of the production process and the tire itself. This may not be what you want to hear as you and your family are relying upon a tire to maintain its integrity at 75 mph, but it's a very real concern that can lead to a classic tread separation defect and tragedy on the roadway.

Who is Responsible?

If a company is involved in the process anywhere from initial design to the ultimate sale, it could be held accountable for a defect. It's important to look at every stage and at every entity, including component part developers. Prime example: Takata airbags. Vehicle manufacturers contracted with Takata for the design and manufacturing of airbags to be placed in hundreds of thousands of cars and trucks. When the airbags began exploding, spraying shrapnel as they did, Takata was included as a responsible party. Ultimately, it was determined that Takata provided NHTSA and its manufacturing customers with "selective, incomplete or inaccurate data,"[4] exposing itself to liability for damages caused by the defective airbags.

To recap, a product is potentially defective because it was improperly designed, improperly manufactured, and/or came with inadequate warnings of the dangers associated with it. All companies, beginning with the entity designing the product through the process of testing, production, supplying, and selling, are potentially liable for their individual or collective failures leading to the defect and the injury caused by it. If questions arise as you're working your way through a potential products liability case, don't be afraid to use a lifeline and call a friend. You're blessed with some wonderful attorneys within our membership who are happy to guide you through this journey! ■



LESLIE MITCHELL KROEGER
is a partner at Cohen Milstein and co-chair of the firm's Complex Tort Litigation practice group. Kroeger began her career as an assistant public defender and later became an assistant state attorney in Miami-Dade County. She now focuses on complex, high-profile product liability, wrongful death, and managed care abuse litigation in Florida and nationwide. Kroeger will be appointed Florida Justice Association's president-elect in June 2018; she is also the past chair of FJA's Women's Caucus. She served on Florida Bar Association's Professional Ethics Committee, and is past president of the Martin County Chapter of the Florida Association for Women Lawyers. She is AV-rated by Martindale-Hubbell and is consistently recognized by *Best Lawyers*, *Florida Super Lawyers*, and *Florida Trend*'s Legal Elite. Kroeger is a recipient of the *Daily Business Review*'s 2018 Distinguished Leader award.

DIANA L. MARTIN
is of counsel at Cohen Milstein, and a member of the firm's complex tort litigation and consumer protection practice groups. Martin's practice focuses on appellate litigation involving complex product liability, consumer class, mass tort, and managed care litigation. Martin began her career as a clerk for the Honorable Martha C. Warner in Florida's Fourth District Court of Appeal. She has written numerous legal articles for various publications, including *Trial Magazine*, *The Florida Bar Journal*, and the Florida Justice Association® *Journal*. Martin also co-authors *Florida Insurance Law and Practice*, an annual publication by Thomson/West. Outside of private practice, Martin serves as Audit Committee chair of Families First of Palm Beach County.

POORAD RAZAVI
is an attorney at Cohen Milstein, and a member of the firm's Catastrophic Injury & Wrongful Death, and Unsafe & Defective Products practice areas. Razavi's practice focuses on products liability, vehicle defects, roadway design and maintenance defects, vehicle accidents, chemical exposure, and negligent security. He received his J.D. from the University of Cincinnati College of Law. Razavi is a member of the Palm Beach County Bar Association and the Palm Beach County Justice Association. He has been named a "Rising Star" by *Florida Super Lawyers* and a "Legal Elite Up and Comer" by *Florida Trend Magazine*.

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[1] Ford Pinto, www.engineering.com/Blogs/tabid/3207/ArticleID/166/Ford-Pinto.aspx
[2] Ford Pinto Fuel Tank, www.autosafety.org/ford-pinto-fuel-tank/
[3] How Tires Are Made, www.goodyear.com.ph/learn/targetText=The%20beads%20are%20made%20from,the%20rim%20of%20the%20wheel.&targetText=Steel%20belts%20are%20placed%20around,that%20are%20coated%20in%20rubber.
[4] Fact Sheet: NHTSA Consent Order Issued to Takata, November 3, 2015, www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/factsheet-nhtsa-consentorder-takata.pdf