

**THE STATE OF SOUTH CAROLINA  
In The Supreme Court**

5 Star, Inc., Petitioner,

v.

Ford Motor Company, Respondent.

Appellate Case No. 2012-206187

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**ON WRIT OF CERTIORARI TO THE COURT OF APPEALS**

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Appeal from Charleston County  
Kristi Lea Harrington, Circuit Court Judge

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Opinion No. 27398  
Heard January 23, 2014 – Filed June 11, 2014

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**REVERSED AND REMANDED**

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Thomas R. Goldstein, of Belk Cobb Infinger &  
Goldstein, PA, of North Charleston, for Petitioner.

C. Mitchell Brown, William C. Wood, Jr., and Michael J.  
Anzelmo, of Nelson Mullins Riley & Scarborough, LLP,  
of Columbia; and Carmelo B. Sammataro and David C.  
Marshall, of Turner Padgett Graham & Laney, PA, of  
Columbia, for Respondent.

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**JUSTICE KITTREDGE:** The court of appeals reversed a jury verdict awarding \$41,000 in actual damages in a negligent design products liability action based on

the failure of the trial court to grant a directed verdict. *5 Star, Inc. v. Ford Motor Co.*, 395 S.C. 392, 397, 718 S.E.2d 220, 223 (Ct. App. 2011). We granted certiorari and now reverse.

## I.

Petitioner 5 Star, Inc. is a lawn maintenance and pressure washing company owned by Stan Shelby. In February 2005, 5 Star purchased a used 1996 Ford F-250 pickup truck. Several months later, Shelby parked the truck for the weekend in 5 Star's North Charleston warehouse. Two days later, Shelby returned to the warehouse and discovered that a fire had occurred. The truck was destroyed, and the warehouse was severely damaged. Benjamin Norris, the Chief Fire Investigator for the North Charleston Fire Department, performed an investigation and observed that the truck was located in the middle of the warehouse, where the most extensive damage occurred. Chief Norris noted the engine compartment of the truck was the likely origin of the fire.

5 Star filed a products liability action against Ford Motor Co. for negligent design of the speed control deactivation switch (deactivation switch), seeking actual and punitive damages. In support of its claim, 5 Star relied on the testimony of Leonard Greene, an expert in electrical engineering and fire origin and cause. Greene testified the fire originated in the engine compartment and, due to numerous problems with the design of the deactivation switch, he further opined that the fire was caused by a malfunction in the deactivation switch.<sup>1</sup> Specifically, in terms of the flawed design, Greene stated it was "very foreseeable" that the thin membrane separating the electrical component, which is constantly energized, from the flammable brake fluid, would leak and create a significant risk for an engine fire.

Ford moved for a directed verdict at the close of 5 Star's case and renewed the motion at the close of all of the evidence, claiming that 5 Star failed to prove the essential elements of a negligent design defect claim. The trial court denied both

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<sup>1</sup> The deactivation switch "serves as a mechanism to deactivate the cruise control when the driver presses the brake pedal." *5 Star*, 395 S.C. at 398, 718 S.E.2d at 223. "The [deactivation] switch is wired into the brake light circuit, which, for safety reasons, must remain energized at all times." *Id.* The electrical component of the deactivation switch is separated from flammable brake fluid by a thin membrane.

motions. The jury found Ford liable for the negligent design of the deactivation switch and awarded 5 Star \$41,000 in actual damages.

On appeal, the court of appeals reversed, finding the trial court erred by refusing to direct a verdict in favor of Ford because 5 Star offered no evidence that Ford's conduct in designing the deactivation switch was negligent.<sup>2</sup> *5 Star, Inc.*, 395 S.C. at 397–99, 718 S.E.2d at 222–24. We issued a writ of certiorari to review the court of appeals' decision.

## II.

"When reviewing a ruling on a motion for a directed verdict, we must view the evidence and all reasonable inferences in the light most favorable to the nonmoving party." *Hurd v. Williamsburg Cnty.*, 363 S.C. 421, 426, 611 S.E.2d 488, 491 (2005) (citing *F & D Elec. Contractors, Inc. v. Powder Coaters, Inc.*, 350 S.C. 454, 458, 567 S.E.2d 842, 843 (2002)). "If the evidence as a whole is susceptible of more than one reasonable inference, the trial judge must submit the case to the jury." *Id.* (citing *Quesinberry v. Rouppasong*, 331 S.C. 589, 594, 503 S.E.2d 717, 720 (1998)).

## III.

In a products liability action based on a negligent design theory, the plaintiff must establish, among other things, that the defendant failed to exercise due care in designing the product.<sup>3</sup> *Branham v. Ford Motor Co.*, 390 S.C. 203, 210, 701

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<sup>2</sup> The court of appeals did not reach the merits of Ford's remaining assignments of error regarding spoliation of evidence, improper measure of damages for lost profits, the denial of Ford's motion for a mistrial, and Ford's claim that the truck was not in essentially the same condition as when it left Ford's control. *5 Star*, 395 S.C. at 394 n.2, 718 S.E.2d at 221 n.2 (citing *Futch v. McAllister Towing of Georgetown, Inc.*, 335 S.C. 598, 613, 518 S.E.2d 591, 598 (1999)).

<sup>3</sup> A plaintiff must also prove: "(1) that he was injured by the product; (2) that the product, at the time of the accident, was in essentially the same condition as when it left the hands of the defendant; and (3) that the injury occurred because the product was in a defective condition unreasonably dangerous to the user." *Madden v. Cox*, 284 S.C. 574, 579, 328 S.E.2d 108, 112 (Ct. App. 1985) (citing W. Prosser, *Law of Torts* 671–72 (4th ed. 1970)). Additionally, a plaintiff has the burden of presenting evidence of a reasonable alternative design. *Branham v. Ford Motor*

S.E.2d 5, 9 (2010) (citing *Bragg v. Hi-Ranger, Inc.*, 319 S.C. 531, 539, 462 S.E.2d 321, 326 (Ct. App. 1995)). On appeal to the court of appeals, one of Ford's contentions was that 5 Star failed to show that Ford was negligent in designing the deactivation switch. The court of appeals agreed and held that Greene was not qualified to offer an opinion as to whether Ford breached its duty to exercise due care in designing the deactivation switch. *5 Star*, 395 S.C. at 397, 718 S.E.2d at 223. Thus, in the absence of Greene's testimony, the court of appeals found that 5 Star failed to present any evidence that Ford's conduct was negligent, and the trial court erred by not directing a verdict for Ford. *Id.* We granted certiorari to review the court of appeals' holding that Greene was not qualified to offer expert testimony as to whether Ford exercised due care in designing the deactivation switch.<sup>4</sup>

### A.

The trial court qualified Greene as an expert in electrical engineering and fire origin and cause. The court of appeals, however, found that Greene was not "qualified as an expert in automotive design or any other area of expertise that would enable [him] to offer opinions as to whether Ford's conduct was negligent." *5 Star*, 395 S.C. at 397, 718 S.E.2d at 223. 5 Star claims that the court of appeals erred and that Greene's extensive qualifications in electrical engineering related to automobiles were sufficient to enable him to testify regarding Ford's exercise of due care. We agree.

Greene is a licensed electrical engineer in South Carolina who earned a Bachelor of Science degree in Electrical Engineering from the Georgia Institute of Technology. He is a member of a number of professional associations, including the National Fire Protection Association, the Society of Automotive Engineers, the National Academy of Forensic Engineers, and the International Association of Arson Investigators. He has been qualified as an expert in fire origin and cause, electrical engineering, and defective products and has testified between 50 and 100 times, serving as an expert for both plaintiffs and defendants. Greene testified that

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*Co.*, 390 S.C. 203, 225, 701 S.E.2d 5, 16 (2010). 5 Star presented evidence of a reasonable alternative design, which Ford has not challenged in these appellate proceedings.

<sup>4</sup> Ford claims that 5 Star did not properly preserve the issue of Greene's qualifications for our review. We reject Ford's issue preservation argument as meritless.

he has conducted investigations on an electrical component as a possible cause of fire many times during his career.

While Greene has never worked directly for an automotive manufacturer, he has a vast amount of experience related to automotive engineering and has designed many component parts that were used in vehicles and other products. For example, he worked for companies that designed component parts—such as integrated circuits and timers—for use in vehicles. Additionally, component manufacturers have hired Greene to determine the cause and origin of fires in boats, buses, and other large commercial vehicles. Moreover, Greene has investigated a number of fires caused by the deactivation switch in Ford vehicles, including reviewing the relevant scientific literature.

We find that Greene was properly qualified by the trial court as an expert to render an opinion as to whether Ford breached its engineering standard of care in designing the deactivation switch. *Compare Duncan v. Ford Motor Co.*, 385 S.C. 119, 133, 682 S.E.2d 877, 884 (Ct. App. 2009) (finding that plaintiffs' mechanical engineering expert in a deactivation switch design defect case was qualified to "give his opinion as to whether Ford breached its engineering standard of care"), *with Watson v. Ford Motor Co.*, 389 S.C. 434, 699 S.E.2d 169 (2010) (finding that an electrical engineer with no experience in the automobile industry who employed an unreliable theory that was uniformly rejected in the scientific community was not qualified to testify about an alleged design defect in a Ford automobile). Accordingly, we hold that the court of appeals erred in finding Greene unqualified as an expert to testify as to whether Ford was negligent in designing the deactivation switch. We turn now to the merits of whether Greene's testimony relating to Ford's exercise of due care was sufficient to create a question of fact for the jury.

## B.

When addressing the element of due care in a negligence action,<sup>5</sup> "the focus is on the conduct of the seller or manufacturer, and liability is determined according to

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<sup>5</sup> Unlike a negligence claim, the focus in a strict liability action "is on the condition of the product, without regard to the action of the seller or manufacturer." *Bragg*, 319 S.C. at 540, 462 S.E.2d 326 (citing *Reed v. Tiffin Motor Homes, Inc.*, 697 F.2d 1192, 1196 (4th Cir. 1982)). Although strict liability and negligence claims may co-exist, we emphasize that our focus is on Ford's conduct in designing the

fault.'" *Branham*, 390 S.C. at 210, 701 S.E.2d at 9 (quoting *Bragg*, 319 S.C. at 539, 462 S.E.2d at 326). "[T]he judgment and ultimate decision of the manufacturer must be evaluated based on what was known or 'reasonably attainable' at the time of manufacture." *Id.* at 227, 701 S.E.2d at 17–18 (quoting Restatement (Third) of Torts: Products Liability § 2, cmt. a (1998)). In evaluating a negligence claim, the focus may be either on the presence of conduct or the absence of conduct. *See Caprara v. Chrysler Corp.*, 417 N.E.2d 545, 549 (N.Y. 1981) (stating that, in a products liability claim predicated on negligence, the central inquiry is whether there is "affirmative conduct in creating a dangerous condition or a failure to perceive a foreseeable risk and take reasonable steps to avert its consequences"); 72A C.J.S. *Products Liability* § 22 ("The duty of ordinary care owed by a manufacturer of a product embraces such questions as whether . . . the manufacturer knew, *or* should have known, that its design was defective . . . ." (emphasis added)).

Relying on foundational scientific principles known at least since the invention of the combustion engine, Greene testified that the deactivation switch design was defective in three ways. First, Greene testified that the deactivation switch was designed to be constantly energized, and "[i]t would have been inherently safer to have designed it so that it only had power on it when the ignition was on." Second, Greene testified that the deactivation switch, rated for two amperes, was protected only by a fifteen-ampere fuse, which allowed the deactivation switch to "overheat and start a fire before the 15-ampere fuse would ever blow." Finally, Greene testified that the deactivation switch was designed to have an electrical component next to flammable hydraulic brake fluid, separated only by a thin membrane. This makes it "very foreseeable that this thin membrane will leak eventually, because when you apply the brakes on the vehicle, brake pressure increases dramatically and pushes against this membrane." When flammable brake fluid leaks into a constantly energized, overheated electrical circuit, a fire is a foreseeable result. Greene testified that this obvious risk could have been avoided by installing a \$2 fuse in series with the deactivation switch in order to limit the current to one or two amperes.

During cross-examination, Ford's counsel asked Greene whether Ford "should have called [him] and got[ten] [his] input on how to design the switch." Greene responded, "No. [Ford] should have had some internal review that would have caught the fact that there [were] some serious potential failure issues with this

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deactivation switch. *See Branham*, 390 S.C. at 211, 701 S.E.2d at 9 (noting that negligence and strict liability may co-exist).

switch." 5 Star claims that the court of appeals erred by not finding that this opinion testimony, coupled with Greene's testimony that it was "very foreseeable" that the deactivation switch would fail, is sufficient to create a jury question as to whether Ford failed to exercise due care in designing the deactivation switch. We agree.

Ford postulates a false premise, that is, the absence of direct evidence of Ford acknowledging a design flaw at the time this 1996 pickup truck was manufactured precludes a negligence claim. We hold that the absence of direct evidence that Ford knew of the design defect in the deactivation is not dispositive of a negligence claim. As the above-cited law makes clear, a negligence claim may be established, as here, by circumstantial evidence showing that, through the exercise of reasonable diligence, Ford should have known of the design flaw in the deactivation switch. *See Sunvillas Homeowners Ass'n., Inc. v. Square D Co.*, 301 S.C. 330, 334, 391 S.E.2d 868, 870 (Ct. App. 1990) ("[N]egligence may be proved by circumstantial evidence."). To require an admission of a design defect by a manufacturer as a prerequisite for a negligence claim is not only contrary to law, but also is at odds with the policy of encouraging manufacturers to design products safely based on well-understood principles of safety and science. The design defect concerning the deactivation switch is grounded in basic science, which, according to Ford's expert, is known to high school science students and, we think, should have been known to Ford engineers. A manufacturer may not avoid negligence liability by turning a blind-eye to the obvious.

In sum, we believe that Greene was properly qualified as an expert witness and that his testimony provided a sufficient basis to deny Ford's directed verdict motion and submit the case to the jury.

#### IV.

We reverse and remand the case to the court of appeals for resolution of the remaining issues that Ford raised in its appeal.

**REVERSED AND REMANDED.**

**TOAL, C.J., PLEICONES, BEATTY and HEARN, JJ., concur.**