

## Recent developments in conspicuity issues in truck accident litigation

By **J. Kent Emison, Esq., and Mark Emison, Esq.**  
*Langdon & Emison*

Drivers cannot avoid lurking dangers in the dark that they cannot perceive. At night, if a tractor-trailer is not properly illuminated, even vigilant drivers do not realize they are coming upon a tractor-trailer until it is too late.

These crashes are referred to as “conspicuity-related collisions.”

“Conspicuity” refers to a motorist’s ability to perceive, identify, and appreciate a truck’s position and speed in the roadway, particularly at night. Conspicuity-related collisions are especially deadly because rear and side collisions into tractor-trailers often result in underride, which occurs when a car submarines underneath a trailer.

The trailer can act like a guillotine and shear the car’s roof off, frequently leading to devastating head and upper torso injuries.

Studies over the past several decades have repeatedly shown that inexpensive retro-reflective tape prevents conspicuity-related collisions. In the early 1990s, the federal government adopted conspicuity requirements for commercial vehicles.

Conspicuity collisions continue to frequently occur, however.

Some motor carriers simply do not adhere to conspicuity requirements, others allow dirt and mud to accumulate on the reflective material that diminishes its effectiveness. Finally, some operators use corrosive chemicals to wash the reflective tape, causing it to fade, wear and lose its reflectivity.

### STUDIES SHOW INCREASING NIGHTTIME VISIBILITY SAVES LIVES

A 1977 study by the University of Michigan Highway Safety Research Institute found that a large portion of fatal rear and side crashes involving cars and semi-trucks occur at night because drivers did not perceive the presence of the tractor-trailer in time to avoid the collision.<sup>1</sup>

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A 1979 study by the same organization found that nighttime collisions involving tractor-trailers were overrepresented, despite less nighttime traffic.<sup>2</sup>

Both studies concluded that improvements to the nighttime visibility of semi-trucks



would reduce the frequency and severity of crashes.

In the 1980s, the National Highway Traffic Safety Administration conducted a three-phase study that came to similar results. Phase I concluded that rear and side collisions involving tractor trailers were more severe at night because drivers following tractor-trailers did not see the truck at all, misjudged the distance of the truck or perceived the truck’s location too late.<sup>3</sup>

Phase II identified that reflective stripes with alternating colors outlining the side and rear perimeters of trailers was the most effective approach to make tractor-trailers more visible.

Phase III concluded that reflective tape reduced conspicuity-related side crashes by 15 percent and reduced rear collisions by 25 percent.<sup>4</sup>

In 2001 NHTSA conducted a study that confirmed that retro-reflective tape and other conspicuity materials save lives. The study analyzed over 10,000 crashes that occurred in Florida and Pennsylvania from 1997 to 1999. The study estimated that retro-reflective tape reduces rear impacts by 29 percent. It concluded that fully implemented visibility requirements for heavy trailers will prevent 7,800 crashes, 191 to 350 fatalities, and 3100 to 5000 injuries per year.<sup>5</sup>



**J. Kent Emison** (L) of **Langdon & Emison** has represented numerous individuals and families who were injured or lost a loved one in a trucking accident, winning several seven- and eight-figure verdicts. A fellow in the International Academy of Trial Lawyers, he can be reached at kemison@langdonemison.com. **Mark Emison** (R) is a graduate of the University of Chicago Law School, board member of the Midwest Innocence Project and member of successful trial teams in trucking accident cases. He can be reached at memison@langdonemison.com.

## CONSPICUITY REGULATIONS

In the early 1990s the federal government, through the Federal Motor Carrier Safety Regulations, adopted conspicuity requirements for commercial vehicles and trailers manufactured after Dec. 1, 1993, in order to reduce side and rear collisions that occur due to limited visibility in dark conditions.

In 1999 the FMCSRs extended these requirements to trailers manufactured prior to Dec. 1, 1993, that meet certain height and weight requirements.<sup>6</sup>

Federal requirements allow tractor-trailers to use either reflex reflectors or red and white reflective tape.<sup>7</sup> Manufacturers of the reflectors and reflective tape must be in compliance with Federal Motor Vehicle Safety Standard 108.<sup>8</sup>

The regulations codify requirements for placement and the size of lamps and reflectors.<sup>9</sup> Reflective tape must cover the length of the rear of trailers. In addition it must be included on all sides of the trailer, as close to the front and rear as practicable.<sup>10</sup>

Tape on the sides do not have to be continuous along the entire length of the trailer, but in total, reflective material must span half of the trailer.<sup>11</sup> The upper corners of the trailer must also have reflective tape.<sup>12</sup>

The tape on the lower edge of the rear and sides of the trailer must be no higher than 60 inches above the roadway. If the tape is higher than 60 inches, there is a risk that motorists' headlight beams will not be high enough to reach the reflective materials — leaving motorists unable to perceive the location of the tractor trailer.

## CONSPICUITY ISSUES STILL CAUSE NUMEROUS INJURIES AND DEATHS

Despite regulations that require conspicuity materials, conspicuity-related collisions continue to occur frequently across the country. Some trucking companies simply do not follow regulations and fail to apply reflective tape on their trailers.<sup>13</sup>

For example, the defendant in *Baldwin v. Golden Hawk Transportation Co.*, 160 Ohio App. 3d 399, 408 (Ohio Ct. App. 2005), blocked both lanes of a roadway as he backed his trailer perpendicular to oncoming traffic. The trailer did not have reflective tape, and a car collided into the side of the trailer and became trapped underneath. The plaintiff survived and stated that she did not see the trailer prior to colliding into it.

Collisions also occur because trailers do not have functioning lights.

For example, the plaintiff in *Quay v. Crawford*, 788 So. 2d 76, 84 (Miss. Ct. App. 2001), collided into a tractor-trailer when the trailer's rear lights did not illuminate. The Mississippi Court of Appeals held that the issue of the defendant's negligence was for the jury to decide.<sup>14</sup>

Tractor-trailers encounter harsh conditions during all seasons and weather conditions. The accumulation of dirt and grime also diminish reflective materials' effectiveness and lead to conspicuity-related collisions.

A 1981 study concluded that dirt and grime reduce reflected light on commercial trucks by 30 percent.<sup>15</sup>

The University of Michigan conducted a more extensive study in 1992 that compared regularly washed trailers with trailers that were not regularly washed. The study measured the reflectiveness by the reflective tape's specific intensity per unit area, or SIA, and found that dirt and grime greatly reduced reflectiveness — particularly in the rear.

The study made its conclusions based on the 85th percentile of trailers in the study

and prevented the plaintiff from perceiving the truck until it was too late to avoid the collision. The court denied the defendant's motion for summary judgment and held it was an issue for the jury.

Reflective materials should be kept clean, but unfortunately many motor carriers use harmful materials that are counterproductive. Corrosive chemicals in cleaning supplies can diminish the conspicuity materials' reflectivity. Reputable reflective tape manufacturers instruct that the tape be flushed with water, then washed with a mild detergent solution and soft bristle brush or sponge.

The manufacturers warn users not to use solvents to clean the sheeting surface. However, many trucking companies and commercial operators do not follow these warnings. As a result, the solvents diminish the illumination of the reflective tape and the tractor-trailers become hidden dangers to motorists driving in the dark.

## CONCLUSION

Conspicuity-related issues cause numerous injuries and deaths each year. Trailers either do not have proper reflective materials or dirt, grime and the use of corrosive chemicals

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### Improvements to the nighttime visibility of semi-trucks would reduce the frequency and severity of crashes.

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— the SIA of the lowest 15 percent of the total trailers. It found that washed trailers lost 60 percent of reflectiveness on their rear, while the less-frequently washed trailers lost 90 percent of reflectivity.

The results were even more drastic in the winter, when the washed trailers lost 70 percent of reflectivity on the rear while the less regularly washed trailers lost 95 percent of reflectivity.

NHTSA's 2001 study also supports that dirt and grime significantly diminish conspicuity materials' effectiveness.<sup>16</sup>

About 30 percent of the 10,000 trailers considered in the study were "somewhat dirty."<sup>17</sup> While clean tape reduces rear-impact collisions by up to 53 percent, dirty tape only reduces collisions by 27 percent.<sup>18</sup>

A real-world example where dirt and grime contributed to a conspicuity-related collision occurred in *Comer v. Smith & Pilgrim's Pride Corp.*, 2007 WL 1112683 (W.D. Va. 2007).

Among the plaintiff's allegations was that the defendant's tractor-trailer was dirty

cause conspicuity materials to lose reflective materials' effectiveness.

Many of these collisions and deaths can be prevented.

Studies repeatedly show that inexpensive reflective tape and conspicuity materials save lives. Conspicuity-related issues should be investigated in any rear or side tractor-trailer collision that occurs in dark conditions. **WJ**

## NOTES

<sup>1</sup> Daniel J. Minahan & James O'Day, *Car-Truck Fatal Accidents in Michigan & Texas*, Univ. of Mich. Highway Safety Research Inst., Report No. UM-HSRI-77-49, Ann Arbor, Mich. (1977).

<sup>2</sup> Paul Green et al., *Accidents & the Nighttime Conspicuity of Trucks*, Univ. of Mich. Highway Safety Research Inst., Report No. UM-HSRI-79-92, Ann Arbor, Mich. (1979).

<sup>3</sup> William J. Burger et al., *Improved Commercial Vehicle Conspicuity & Signalling Systems, Task 1- Accident Analysis & Functional Requirements*, NHTSA Report No. DOT HS 806 100, Washington 1981).

<sup>4</sup> Preliminary Regulatory Evaluation – Proposed Amendment to FMVSS No. 108 to Require