

IN THE BLINK OF AN EYE...

Understanding Driver
Response Time In Truck
Accident Cases



A white paper presented
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Elk & Elk[®]

DRIVING IS SOMETHING MOST OF US DO EVERY DAY - **BUT MOST OF US DON'T GIVE IT MUCH THOUGHT.**

The daily commute. Driving to the grocery store. Picking kids up from sports practice. These things are a part of many people's daily routines. Things many of us could do – figuratively – in our sleep.

On those familiar routes, we know where the stoplights are. We know what exit to take and where to turn. Depending on the time of day, we know approximately how much traffic will be on the roads.

Driving in an unfamiliar place is different and may require more thought and concentration. But the rules of the road are the same.



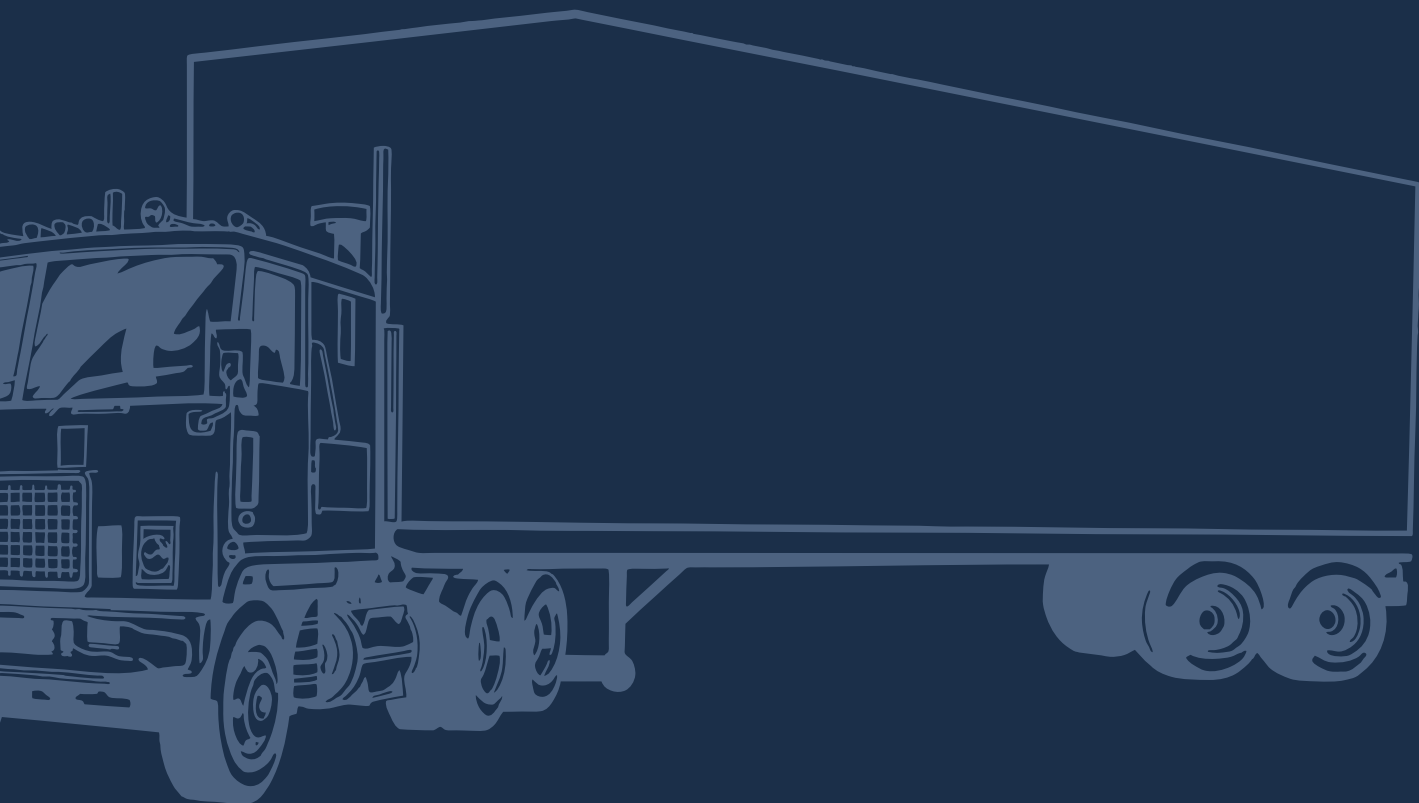
IT ISN'T UNTIL SOMETHING UNEXPECTED HAPPENS THAT **WE** **ARE JOLTED INTO ACTION.**

Heart rate increases. Adrenaline kicks in. And in many of these scenarios, we must make a split-second decision.

That unexpected thing could be a deer about to cross the road, a car that suddenly brakes or debris in the road.

Or it could be a tractor-trailer parked sideways spanning the width of the road.

Imagine you're driving home after dark. It's a clear night, and you're traveling on a familiar, albeit poorly lit road. You see something ahead, but don't know what it is. By the time you realize it is a semi truck backing into the road, it's too late.





VISIBILITY IS NOT DISCERNIBILITY:

When encountering an unexpected road hazard, a driver may see the hazard, but not recognize what it is.

UNDERSTANDING PERCEPTION-REACTION TIME

Most people are aware of the concept of perception-reaction time, although the term may not be well-known.

The concept is simple: There is a short lag time between seeing a road hazard/traffic situation and reacting to it.



**Experts believe that amount of time is
1.5 seconds on average.**

In the case of a road hazard, 1.5 seconds¹ is generally seen as the amount of time it takes for a driver, on average, to see the hazard, recognize the potential threat, decide how to respond to the threat and move his or her foot from the car's accelerator to the brake.

However, when more variables are present, perception-reaction time may increase. In unexpected situations, perception-reaction time may increase.

And there are situations where perception-reaction time may be shorter. Think a knee-jerk reaction: pulling your hand away quickly after touching a hot stovetop, for example.

In certain situations, drivers expect to react to changing road conditions – when approaching a green traffic light that is about to turn yellow, for example.

But when something unexpected occurs – when debris flies off a semi truck – **drivers must react quickly.**





Many variables affect perception-reaction time.

When encountering an unexpected hazard in the road, a driver must do many things: see the hazard, recognize it, decide how to respond and initiate the response.

ON AVERAGE, THE AMOUNT OF TIME IT TAKES TO REACT IS 1.5 SECONDS.

WHEN A VEHICLE IS GOING 60, 70, 80 MPH, THOSE SECONDS MATTER.

DO THE MATH



There are 5,280 feet in a mile, and 3,600 seconds in an hour.

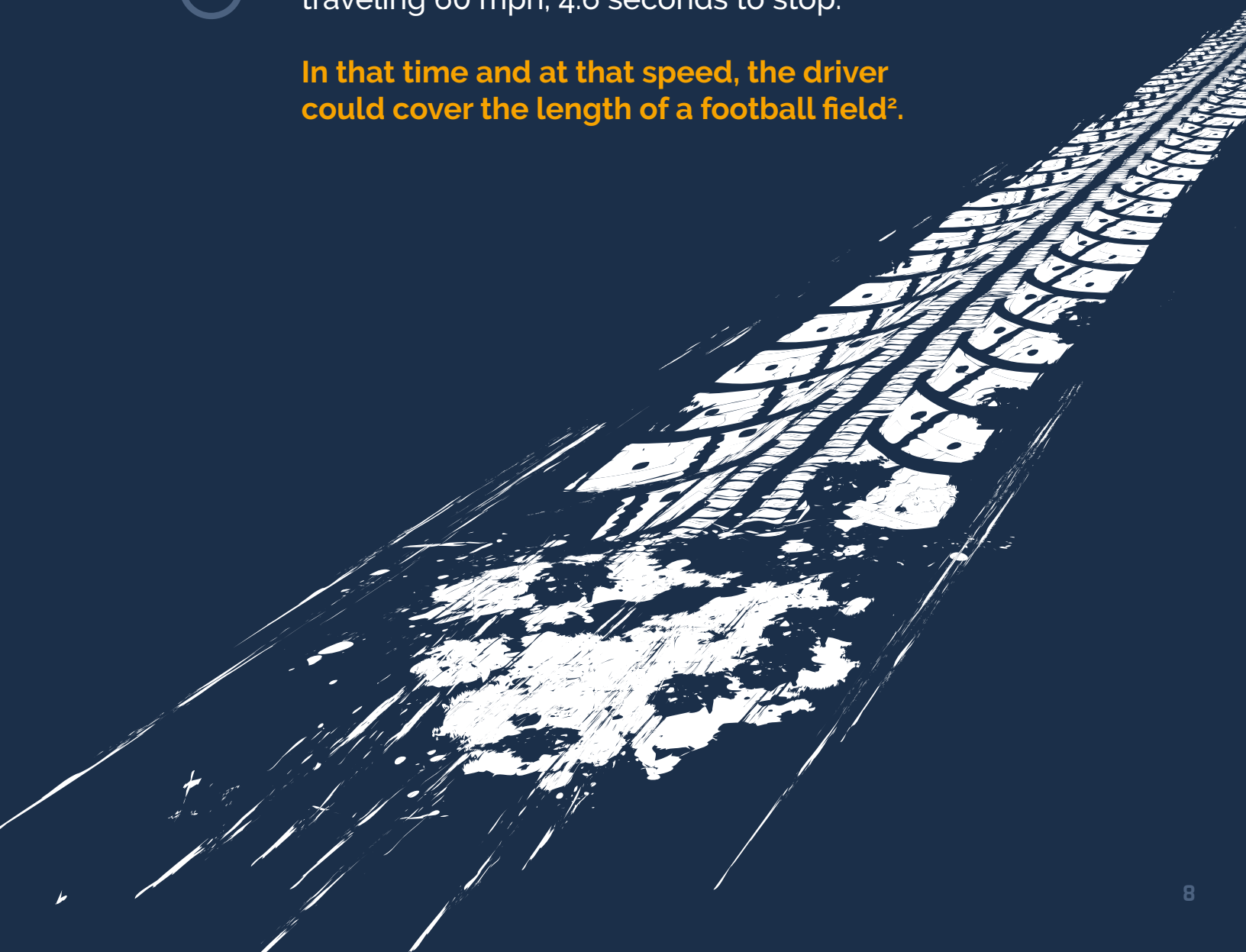


At 60 mph, a vehicle travels 132 feet in 1.5 seconds.



In normal driving conditions, it takes a vehicle traveling 60 mph, 4.6 seconds to stop.

In that time and at that speed, the driver could cover the length of a football field².



WHEN AN UNEXPECTED TRACTOR-TRAILER IS IN THE ROAD

Consider a scenario in which a tractor-trailer is stalled on a rural highway after dark.

A car traveling at 65 mph is coming up over a hill.

As the driver begins to descend the hill, he notices something amiss. Something large is obstructing the entire right lane, but it's not entirely visible – and it's definitely not discernible. The driver doesn't recognize that it's a stalled semi truck.

By the time the driver slams on the brakes, it's too late. A collision is unavoidable.



IS THE TRUCK DISCERNIBLE?

Not all traffic accidents can be avoided.

However, when it comes to semi trucks, there are things that the trucking company and truck driver are required to do to ensure that their vehicles are visible to motorists.

Ensuring that a vehicle is visible can help motorists discern the vehicle. But discernibility is not guaranteed, especially in situations where the driver is surprised.

Let's look at some of the precautions trucking companies are required to take that help ensure visibility.



CONSPICUITY MATERIALS

HELP TRUCKS BE SEEN

The U.S. Department Of Transportation's Federal Motor Carrier Safety Administration (FMCSA) sets regulations³ regarding the use of conspicuity materials.

Conspicuity materials enhance a truck's visibility on the road. This includes a variety of reflective materials that are required on specific areas on the truck.

The goal of conspicuity materials is to ensure that a truck is visible in all light conditions and to reduce rear-end and side-underride accidents involving cars.





TRUCK LIGHTING REQUIREMENTS

Proper lighting helps to ensure that a semi truck is visible.

Lighting requirements vary depending on the length, width and weight of a trailer. However, the basic equipment required⁴ on all trailers includes tail lamps, stop lamps, rear turn signal lamps, rear reflex reflectors, license plate lamps, rear side marker lamps, rear side reflex reflectors, front side marker lamps and front side reflex reflectors.

Lights should be properly installed and functioning at all times. Truck drivers and trucking companies are responsible for meeting all state and federal regulations that apply to truck lighting. When lights are not turned on or malfunctioning, a collision could occur.

ACCIDENT ANALYSIS: DETERMINING RESPONSIBILITY CAN BE DIFFICULT

One important factor in the investigation of a truck accident case is determining if the semi truck was visible. But a thorough accident investigation goes beyond visibility – it also considers discernibility.

When someone is seriously injured or killed in an accident involving a tractor-trailer, opinions from the following experts may be sought:





ACCIDENT RECONSTRUCTION EXPERTS

may investigate and analyze many physical aspects of a tractor-trailer accident to determine liability: collision speed, engine RPM, steering angles, highway design, road surface, skid marks, road debris and other physical evidence.



DISCERNIBILITY EXPERTS

look at the accident from the perspective of the driver, accounting for human factors such as perception-reaction time. A discernibility expert may ask questions such as: Was the truck with which the car collided discernible? Why was the truck jackknifed across the road? Were conspicuity materials used, ensuring that the truck was visible? What was the driver's perception-reaction time?

Because so many factors affect accident causation, these cases can be highly complex.

It is advisable for accident victims and surviving family members to seek help from a highly experienced truck accident attorney. These are rarely routine cases.

ONE THING IS CLEAR: SECONDS MATTER WHEN IT COMES TO AVOIDING AN ACCIDENT.



Those 1.5 seconds could mean the difference between narrowly avoiding an accident and suffering catastrophic or fatal injuries in a crash.



Those 1.5 seconds could mean the difference between life and death.

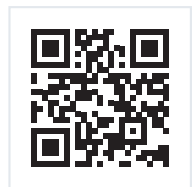


When trucking companies and truck drivers fail to take safety precautions, to meet state and federal trucking regulations, and to keep motorists' safety in mind, serious accidents can happen.

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SOURCES

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<https://www.fhwa.dot.gov/publications/research/operations/tft/chap3.pdf>

² U.S. Department Of Transportation, National Highway Traffic Safety Administration, Safety In Numbers

https://one.nhtsa.gov/nhtsa/Safety1nNum3ers/august2015/S1N_Speeding-August2015_812008.pdf

³ U.S. Department Of Transportation Federal Motor Carrier Safety Administration, FMCSA's Conspicuity Requirements for Commercial Motor Vehicles

https://one.nhtsa.gov/nhtsa/Safety1nNum3ers/august2015/S1N_Speeding-August2015_812008.pdf

⁴ National Highway Traffic Safety Administration, Trailers: Federal Lighting Equipment Location Requirements

<http://www.nhtsa.gov.edgesuite-staging.net/Vehicle-Safety/Other-Equipment/Trailers:-Federal-Lighting-Equipment-Location-requirements>