TRACTOR-TRAILER ACCIDENTS ON INTERSTATE 40 ON THE CUMBERLAND PLATEAU IN TENNESSEE — NECESSITIES FOR EARLY INVESTIGATION

Interstate 40 between **Knoxville** and **Nashville** in the state of **Tennessee** runs through the **Cumberland Plateau near Crossville and Cookeville Tennessee**. The Cumberland Plateau is 1,000 to 2,000 feet higher in elevation than Nashville or Knoxville. For this reason, as a result of weather conditions, the roads tend to ice quicker, have more snow and are extremely hazardous during the winter months.

As a result of these conditions, there are many tractor- trailer accidents where the operator of the tractor-trailer simply does not have his vehicle under proper control.

All tractor-trailer operators are required to comply with the CDL (Commercial Driver's License manual). This requires operators to match their speed to the road surface conditions. The Commercial Driver's License manual has been adopted by the law in the state of Tennessee as in most other states.

The manual covers stopping distance, which means: Perception Distance + Reaction Distance + Braking Distance = Total Stopping Distance. Section 2.6.1, pages 2-14 and 2-15, provides this as follows:

> **Perception distance:** The distance your vehicle travels, kn ideal conditions; from the time you eyes see a hazard until your brain recognizes it. Keep in mind certain mental and physical conditions can affect your perception distance. It can be affected greatly depending on visibility and the hazard itself. The average perception time for an alert driver is $1^{3/4}$ seconds. At 55 mph this accounts for 142 feet traveled.

Reaction distance: The distance you will continue to travel, in ideal conditions; before you physically hit the brakes, in response to a hazard seen ahead. The average driver has a reaction time of 3/4 second to 1 second. At 55 mph this accounts for 61 feet.

Braking distance: The distance your vehicle will travel, in ideal conditions; while you are braking. At 55 mph on dry pavement with good brakes, it can take about 216 feet.

Total stopping distance: The total minimum distance your vehicle has traveled, in ideal conditions; with everything considered, including perception distance, reaction distance and braking distance, until you can bring your vehicle to a complete stop. At 55 mph, your vehicle will travel a minimum of 419 feet.

The Effect of Speed on Stopping Distance: The faster you drive, the greater the impact or striking power of you vehicle. When you double your speed from 20 to 40 mph the impact is 4 times greater. The braking distance is also 4 times longer. Triple the speed from 20 to 60 mph and the impact and braking distance is 9 times greater. At 60 mph, your stopping distance is greater than that of a football field. Increase the speed to 80 mph and the impact and braking distance are 16 times greater than at 20 mph. High speeds greatly increase the severity of crashed and stopping distances. By slowing down, you can reduce braking distance.

Section 2.6.2 of the Commercial Driver's License manual requires the operator to match the speed to road surface conditions:

Slippery Surfaces: It will take longer to stop, and it will be harder to turn without skidding, when the road is slippery. Wet roads can double stipping distance. You myst drive slower to be able to stop in the same distance as on a dry road. Reduce speed by about one-third (e.g., slow from 55 to about 35 mph) on a wet road. On packed snow,

reduce speed by a half, or more. If the surface is icy, reduce speed to a crawl and stop driving as soon as you can safely do so.

Identifying Slippery Surfaces: Sometimes it's hard to know if the road is slippery. Here are some signs of slippery roads:

- **Shaded Areas**: Shady parts of the road will remain icy and slippery long after open areas have melted. Bridges: When the temperature drops, bridges will freeze before the road will. Be especially careful when the temperature is close to 32 degrees Fahrenheit.
- **Melting Ice:** Slight melting will make ice wet. Wet ice is much more slippery than ice that is now wet.
- **Black Ice:** Black ice is a thin layer that is clear enough that you can see the road underneath it. It makes the road look wet. Any time the temperature is below freezing and the road looks wet, watch out for black ice.
- **Vehicle Icing:** An easy way to check for ice is to open the window and feel the front of the mirror, mirror support, or antenna. If there's ice on these, the road surface is probably starting to ice up.
- **Just After Rain Begins:** Right after it starts to rain, the water mixes with oil left on the road by vehicles. This makes the road very slippery. If the rain continues, it will wash the oil away.
- **Hydroplaning:** In some weather, water or slush collects on the road. When this happens, your vehicle can hydroplane. It's like water skiing – the tires lose their contact with the road and have little or no traction. You

> may not be able to steer or brake. You can regain control by releasing the accelerator and pushing in the clutch. This will slow you vehicle and let the wheels turn freely. If the vehicle is hydroplaning, do not use the brakes to slow down. If the drive wheels start to skid, push in the clutch to let them turn freely. It does not take a lot of water to cause hydroplaning. Hydroplaning can occur at speeds as low as 30 mph if there is a lot of water. Hydroplaning is more likely if tire pressure is low, or tread is worn. (The grooves in a tire carry away the water; if they aren't deep, they don't work well.) Road surfaces where water can collect can create conditions that causes a vehicle to hydroplane. Watch for clear reflections, tire splashes, and raindrops on the road. These are indications of standing water.

Section 2.6.4 of the Commercial Driver's License manual — Speed and Distance Ahead states as follows:

You should always be able to stop within the distance you can see ahead. Fog, rain, or other conditions may require that you slow down to be able to stop in the distance you can see. At night, you can't see as far with low beams as you can with high beams. When you must use lows beams, slow down.

Once an accident occurs, a major trucking company has the following requirements for the operator:

1. Driver's must report all accidents immediately. Giving their locations and other details concerning the accident.
2. Sit out flags and reflectors 100 to the front and rear of the vehicle.

3. Call immediately and report the accident to the risk management department in the claims department which is available 24 hours 7 days a week.

4. Fill out your accident report on the scene.

5. Try to get the other parties to sign the exoneration card if they are at fault.

6. Try to get all occupants of the car to sign the non-injury form in your accident packet.

7. Admit nothing, promise nothing, do not argue in regards to the circumstances. Be polite.

8. Get all the necessary information such as position of vehicle, skid marks, etc.

9. Always carry a camera and take pictures of the accident scene.

10. All accident should be reported on your daily log sheet.

11. Make a mental note of your location - survey the surroundings of the accident site. Take a lot of pictures and get a lot of names, addresses, and phone numbers. Get the insurance information from everyone involved.

12. Obtain witness information.

Usually, all of the above investigation is being done while the injured people are either on their way to the hospital or already in the hospital.

It is important that the injured people retain counsel or at least an investigator in sufficient time to do a thorough analysis of the tractor-trailer in question. The tractor-trailer should probably be impounded before any parts are removed from the vehicle. If the tractor was manufactured after 1996, there should be an onboard computer system known as, and Electronic Control Modular, i.e. “The Black Box”. Any information contained in the box can be obtained by downloading it from the tractors onboard computer onto a laptop computer with the correct

software. There are two sides of information to be analyzed:

A) Diagnostic side:

1. What speed the trucks governor is set to run.

2. The high speed it ran and the date it happened.

3. Percentage of speed as illustrated below:

a) 5-10 percent of the time it has been running at 5-10 mph.

b) 10-20 percent of the time it has been running at 20-30 mph.

c) How often was it running and at what speed.

B) Hard-Braking Side:

It will record the last three hard brakes. This is defined as a truck reducing it's speed no more than 7 mph in one second.

An inspection should be done of the tractor-trailer's braking system. It is necessary to have a qualified expert to do the brake inspection. In order to do a proper brake inspection the trailer should be attached to the tractor at the time the test is performed. In addition, during the proper course of inspection of the tractor-trailer, there must be qualified photographer there to document through date and time, stamped photographs the damage that has been done to the tractor-trailer before the vehicle is removed or repaired.

It should be remember that under the Federal Motor Carrier's Safety Act, Section 395.8 (K) that the driver's logs books and records of duty status and supporting documents, only have to be retained by the company for a period of **6 months** from the date of receipt. It is therefore vital that this information be obtained or the company be demanded to retain the information before six months from the accident.

It will be necessary for a proper investigation to help determine the cause of the accident, driver fatigue, driving in excess of the required hours, chemical impairments to the physical body, sleep deprivation, and other health conditions. Under the Federal Motor Carrier's regulations the company's are required to maintain records of cargo being transported, rooster travel, pick-up and delivery time, shipper's, receivers and other person or organizations, dispatch records, all records and other written or electronic records indicating communications between the company and driver in reference to the movement of the rig, pre-trip inspections, complete maintenance file on the tractor-trailer involved and on dispatch and communication records between the dispatch and the driver for a period of six months before the collision (this includes satellite tracking or position history of the tractor for each trip), all onboard data recorders and electronic data printouts and analysis of the information from such devices, drug test of the operator, log books and trip documents. The importance that the injured parties representatives must be diligent in pursuant of the all relevant documents.

In the area of the Cumberland Plateau between Nashville and Knoxville, Tennessee and more specifically Crossville and Cookeville, most accidents are the result of a combination of weather conditions, speed on the part of the vehicle, and inability of the driver to react and stop his vehicle in time to avoid accidents. These combination of events all require a diligent and early investigation on the part of the injured party or their representatives.

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