

Driver Safety – Laws of Physics

One of the most dangerous activities your organization's employees will engage in is driving to, from and for work. More than 100 people die every day in auto accidents in the US. Knowing the laws of physics on the road can help keep them safe.

Centrifugal force is the feeling of pulling to the outside when making a turn:

- This force can cause cars to roll.
- Drivers can lose control of their vehicles.
- Many roadways are built with curves at a slight slant to help drivers maintain control during higher speed turns.
- To maximize safety, be sure to reduce your speed when approaching curves and driving on curvy roads.



Friction, i.e. gripping power, also greatly influences the vehicle's behavior:

- Friction between your tires and the ground helps keep your car under control.
- Certain conditions, such as poor tires, water, mud, gravel, snow, ice, and wash-boarded roads reduce the friction that helps you maintain control.
- In order to minimize these hazards, reduce your speed and replace worn or damaged tires.

Gravity affects the vehicle's weight and dictates its reaction on slopes:

- When going downhill, gravity pulls your vehicle forward, leading to very quick acceleration and driving too fast. As needed, shifting into a lower gear and keep your eye on the speedometer and your foot over the brake. Pump the brake as opposed to keeping the brake pedal depressed to prevent brake fade.
- Gravity has the opposite effect when driving uphill. You may find your car losing momentum or struggling to maintain speed. This causes your car to work much harder, which can lead to engine overheating and other mechanical problems. To avoid this kind of complication, take hills slowly and watch your temperature. Turning off the air conditioning will also help.

The force of impact: With a little luck, and cautious driving, you can avoid experiencing this kind of force, which occurs when two objects collide. Studies involving this force teach us that hitting a stationary object at 40 miles per hour is equal to your car being dropped from 54 feet!

Remember that the effect of each of these forces becomes more dramatic with speed, so drive carefully and remember that physics never sleeps.

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This form documents that the training specified above was presented to the listed participants. By signing below, each participant acknowledges receiving this training.

Organization: _____ Date: _____

Trainer: _____ Trainer's Signature: _____

Class Participants:

Name: _____ Signature: _____

Name: _____ Signature: _____

Name: _____ Signature: _____

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