



CRASH COUNTERMEASURES

Accident Scene

The scene of an accident constitutes a highly hazardous driving situation and is frequently the site of other accidents. Similar to construction zones, traffic in and around the scene of an accident is typically slowed, sometimes stopped, often redirected by emergency personnel or other pedestrians. It is every driver's responsibility to recognize the accident scene as a highly hazardous area, adjust their speed

accordingly, be aware of and yield to all emergency personnel and not use their mobile phone while at the controls of the vehicle in operation. Collisions while driving through an accident scene are PREVENTABLE.

The following BASIC violations as well as those under Defensive Driving technique #2 – Communication, Visibility & Other Motorists – apply to accident scene safety.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|-----------|---|-------------------------|---------------------|----------|
| 392.22(b) | Failing/improper placement of warning devices | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 392.22(a) | Failing to use hazard warning flashers | Other Driver Violations | Unsafe Driving | 1 |

Backing and Docking

The likelihood that a driver's first accident will involve a backing maneuver is very high – even for seasoned drivers with accident-free records. This is primarily because, for most drivers, backing is their least developed skill. Further complicating the backing maneuver is limited or zero visibility. Although highest in frequency, backing collisions tend to be lowest in severity, typically resulting in only minor equipment or property damage claims. But frequency breeds severity, drivers must still practice defensive driving when it comes to backing. Involving an unseen pedestrian can result in tragedy. Here are the steps to prevent a backing collision:

- 1) Do not back at all; if possible, pull into an area that allows you to pull forward when leaving.
- 2) If you must back, get the big picture; take a mental snapshot of the area before you begin.
- 3) Avoid backing towards the blind (passenger) side.
- 4) Back slowly, keep windows rolled down and radio off, check mirrors frequently.

5) Use signals, flashers, horn and a reliable guide; agree on hand signals in advance.

6) Set a G.O.A.L. before you begin to back; if uncertain "Get Out And Look!"

7) Never back on a public highway or a high traffic area without the assistance of law enforcement personnel or other qualified persons who can control traffic while you are backing.

Check all clearances above for wires, tree limbs and overhangs; underneath for changes in ground elevation, railroad tracks or loading equipment; both sides – secure both trailer doors to prevent from swinging and striking other vehicles or people while backing into or pulling away from loading docks. Leave tractor coupled during loading unless otherwise directed. Follow precautions for safe coupling/uncoupling. Ensure forklift and loading personnel are clear of the vehicle; communicate with them before pulling away from the dock. Be aware of ice in the loading area that might cause the vehicle to skid or slide.

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The #1 truck driver injury involves slips, trips and falls while on or about the vehicle. Backing and docking maneuvers typically require multiple entries/exits from the cab. Plan maneuvers to minimize the number of cab/vehicle entry/exits. Wear protective footwear with slip-resistant soles. Ensure grab rails and cab steps are free from debris, oil, grease, ice, snow or rain. Always utilize three points of contact when entering/exiting the vehicle; have at least 2 hands and 1 foot -or- 1 hand and 2 feet in contact with vehicle at all times; never jump from the cab or the trailer.

¹⁰Backing collisions are PREVENTABLE. A driver is not relieved of their responsibility to back safely when a guide is involved in the maneuver. A guide cannot control the movement of the vehicle; therefore, a driver must check all clearances themselves. A good ship captain ensures that everyone is aboard and in agreement before docking or undocking.

Although backing collisions rarely involve a DOT violation, the following BASIC descriptions are applicable for backing and docking maneuvers.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|-----------|---|-------------------------|---------------------|----------|
| 392.22(b) | Failing/improper placement of warning devices | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 392.22(a) | Failing to use hazard warning flashers | Other Driver Violations | Unsafe Driving | 1 |
| 390.20 | Failing to properly secure parked vehicle | Other Driver Violations | Unsafe Driving | 1 |

Backing in Traffic

Backing in traffic is a highly hazardous maneuver and should be avoided. If the only alternative is to back up in traffic, apply the above 7 steps that apply to Backing and Docking with the following 2 additional steps:

- 8) Never back in traffic without assuring that it is clear behind and that the area that you are backing into has been secured against encroaching traffic or pedestrians that could be jeopardized while you are backing. Such securement includes placement of triangles or flares and visual recognition that traffic behind has stopped far enough back to allow a safe back. Ideally, before backing on a public highway, obtain the assistance of the local law enforcement representatives.
- 9) If backing across traffic, obtain assistance to block traffic while the backing maneuver is completed. Typically, this will require the assistance of law enforcement or other qualified personnel.

When stopping behind another vehicle in traffic, keep enough distance between you and the vehicle ahead where you can see their rear tires touching the ground. This will allow enough room for you to pull your vehicle around them without having to back up should their vehicle become stalled or disabled. Never back up on an interstate and never use an emergency-vehicle-only crossing to turn around on an interstate. If you miss your exit, continue on to the next exit.

Backing through intersections, out of an alley, parking lot and into traffic should never be attempted without the assistance of a reliable guide to keep pedestrians and vehicles clear from your path of travel. Placement of reflective triangles and/or orange safety cones to block cross traffic is highly recommended.

Backing-in-traffic collisions are PREVENTABLE.

¹⁰ Motor Fleet Safety Supervision; Principals and Practices (NATMI)



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Cargo Securement and Handling

DOT studies show that unsecured cargo carries a high propensity to cause commercial motor vehicle crashes. Load characteristics such as size, weight and the nature of load (liquid, dry freight, bulk, vehicle in tow, passenger, over-dimensional, etc.) vary by-fleet and greatly alter and affect the vehicle handling and stability. Provide drivers with situational awareness training of how even slight loading and operational changes may affect safety. Motorists perceive and react differently to the same flatbed, drop-deck or lowboy trailer, based on whether it is loaded or unloaded. Truck and trailer stability change depending upon whether it is loaded or unloaded.

Determine the driver's ability to safely transport a specific type of cargo subjectively through means of a road test. Never rely solely on a driver's past experience to judge this critical safety factor. It is outside the scope of this manual to address every type of cargo but it is highly recommended that motor carriers provide drivers with function-specific cargo safety training and conduct periodic refresher training relative to the type of freight they transport, for Hazmat and non-Hazmat drivers.

Many overturns can be attributed to shifting cargo. A trailer in motion sets up a floor vibration of 3-5 cycles per second. This vibration can actually cause an unsecured load to "float" and move inside the trailer. Substantial movement to one side of the trailer can cause a shift in the center of gravity and cause overturns at normal speeds. Use dunnage or other securement devices to prevent load shift while the vehicle is in operation. Drivers are required to inspect the load before transporting it unless the trailer is sealed. It is the driver's responsibility to insure that the load is properly secured before leaving the dock or shipper. This responsibility includes re-securement after partial unloads. Accidents that result from load shift due to improper securement are PREVENTABLE.

With the exception of Hazardous Materials violations, cargo related BASIC severity levels count towards the motor carrier's Vehicle Maintenance score, the overall SMS rating and subsequent intervention status. Hazmat related severity levels on roadside cargo inspections are posted in SMS under the motor carrier Hazardous Materials (HM) Compliance BASIC detail screen and are a determinant in deciding which vehicles to inspect.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|--------------------|---|--------------------------------------|---------------------|----------|
| 173 | Multiple | Load Securement - HM | HM Compliance | 10 |
| 171, 173, 178 | Multiple | Package Integrity - HM | HM Compliance | 8 |
| 393 | Multiple | Improper Load Securement | Vehicle Maintenance | 7 |
| 180 | Multiple | Package Testing - HM | HM Compliance | 7 |
| 173, 177, 397 | Multiple | Fire Hazard - HM | HM Compliance | 6 |
| 171, 172, 173 | Multiple | Markings - HM | HM Compliance | 5 |
| 172, 173, 177 | Multiple | Cargo Protection - HM | HM Compliance | 4 |
| 172, 177, 385, 397 | Multiple | Documentation - HM | HM Compliance | 3 |
| 393 | Multiple | Tiedown Failure to Prevent Movement | Vehicle Maintenance | 3 |
| 171.2, 177, 397 | Multiple | HM Other | HM Compliance | 2 |
| 393 | Multiple | General Securement Securement Device | Vehicle Maintenance | 1 |
| 393.87 | Warning flag required on projecting load | Warning Flags | Vehicle Maintenance | 1 |
| 397 | Multiple | HM Route | HM Compliance | 1 |



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Coupling/Uncoupling

Coupling/Uncoupling occurrences are similar to backing/docking collisions from a high frequency, low severity standpoint, normally resulting in relatively minor physical damage. However, drivers have been injured and even killed during this maneuver. Utilize the six basic backing skills described previously (especially G.O.A.L.) as well as Three Points of Contact method for entering/exiting vehicle.



Carry a flashlight, wear Personal Protective Equipment (PPE); leather gloves, protective footwear with non-slip soles, safety glasses and high visibility reflective clothing. Use wheel chocks to prevent trailer from shifting. Visually inspect 5th wheel jaws for open position before backing underneath the trailer. After sliding fifth wheel partially under king pin plate, visually inspect to ensure proper kingpin height and alignment. After verifying proper positioning, proceed backing; upon hearing 5th wheel lock, perform a tug-test by pulling slightly

forward with trailer brakes set to ensure king pin is locked. Set tractor brakes; hook up air lines and electrical connection; raise dolly legs; remove wheel chocks. Perform previously described pre-trip inspection of all components including tires, brakes, suspension, and lighting. Use a rag to clean all retro-reflective striping, reflectors, and lights. Always use caution when;

- 1) Underneath trailer; avoid head injury.
- 2) Cranking dolly; prevent strain or sprain injury - do not overexert; be careful of pinch points.
- 3) Working on parking lots, roadway and traffic areas; communicate with others in the area to avoid being struck by other vehicles and equipment.
- 4) Walking in/around or upon equipment; watch for slip, trip and fall hazards such as grease, ice, snow, wheel chocks, other debris or holes in catwalk, trailer floor or at ground level.
- 5) Pulling away from loading dock; ensure forklifts and pedestrians are clear of vehicle; ensure trailer doors are secure and will not swing out in midst of maneuver.

Loaded trailers should never be dropped on asphalt or otherwise unless there is a skid pad that will support the weight of the load. Trailer interchange operations require accurate route planning and driver feedback mechanisms to prevent trailer drop incidents. Never drop a trailer, loaded or unloaded on private property without the authorization of the property manager.

Coupling/uncoupling incidents are PREVENTABLE. Although coupling/uncoupling events rarely involve a DOT violation, the following BASIC descriptions are applicable for backing and docking maneuvers.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|-----------|---|-------------------------|---------------------|----------|
| 393.70(b) | Defective/improper fifth wheel assemblies | Coupling Devices | Vehicle Maintenance | 3 |
| 392.22(a) | Failing to use hazard warning flashers | Other Driver Violations | Unsafe Driving | 1 |
| 390.20 | Failing to properly secure parked vehicle | Other Driver Violations | Unsafe Driving | 1 |



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Fixed Objects

Driving or backing a vehicle into a stationary object is PREVENTABLE. The good ship captain is responsible in route planning and knowledge of the vicinity at all times. If the driver makes an incorrect turn, takes the wrong exit or is in general unfamiliar with the area, they should pull over at the first safe place and recalculate their route. Making panic turnarounds or turns down unfamiliar routes frequently leads to collisions with overpasses, overhead wires, signs, poles and rail crossings and are frequently associated with inexperienced drivers. Passenger carriers should require any off route driver to stop and call back to the home office for re-routing before proceeding.



Head-on

¹¹It is extremely important to check the action of the company driver when involved in a head-on or sideswipe crash with another vehicle approaching from the other direction. Exact location of vehicles, prior to and at the point of impact, must be carefully verified. Even though an opposing vehicle enters the driver's traffic lane, it may be possible to avoid the collision. For example, if the opposing vehicle was in a passing maneuver and the driver failed to slow down, stop or move to the right to allow the vehicle to reenter their own lane, the driver has failed to take action to prevent occurrence. Head-on collisions are PREVENTABLE unless determined otherwise by means of careful collision review. To avoid head on collisions, use the "Four R's":

- 1) Read the road ahead. Try to determine why the approaching vehicle is in your lane.
- 2) Reduce your speed. This gives the other vehicle more time to recover and makes it easier and safer for you to take evasive maneuvers.

3) Ride to the right. Move to the right edge of the roadway to give more room to the approaching vehicle

4) Run off the road. In most cases, leaving the roadway is safer than being involved in a head-on collision. Remember, the forces involved are inclusive of the speeds of both vehicles. If both of you are going 50, the combined speed at impact will be 100 mph. Running off the road avoids this and allows you and the other person a greater opportunity to survive.

Never attempt to alert another driver of a hazard through the use of your high beams. If hi-beams are flashed on/off, oncoming motorists may experience temporary loss of night vision and be unable to see the hazard that they are being warned against. In addition, since they cannot see the hazard, they assume that they are being told to dim their lights, and do not perceive the flashing lights as a warning. To warn other motorists, drivers should sound their horn or quickly turn their lights off/on. Never flash your bright lights at oncoming traffic.

¹¹ Motor Fleet Safety Principals and Practices; North American Transportation Management Institute



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Intersections

At an intersection – Look Left; Look Right; then Look Left again. At an intersection – Think! Look twice for pedestrians and cyclists. Yield right-of-way to oncoming traffic and stay in the prescribed lane. Violations of these rules of safety can occur almost instantaneously. Focused attention to all circumstances pertaining to this maneuver is essential. If pulling into and through an uncontrolled intersection is the only option – do not creep out. Assure that the intersection is clear and that there is no approaching traffic that represents a hazard. After determining that it is safe to do so, accelerate and cross the intersection as quickly as possible. If there is approaching traffic, reduce speed and prepare to yield to the other person.

¹²It is the responsibility of professional drivers to approach, enter and cross intersections prepared to avoid accidents that might occur through the action of other drivers. Complex traffic movement, blind intersections, or failure of the “other driver” to conform to law or traffic control devices will not automatically discharge an accident as “not preventable.” Intersection accidents are often preventable even when the professional driver has not violated traffic regulations. Failure to take precautionary measures prior to entering the intersection is a factor to be studied in making a decision (of preventability).

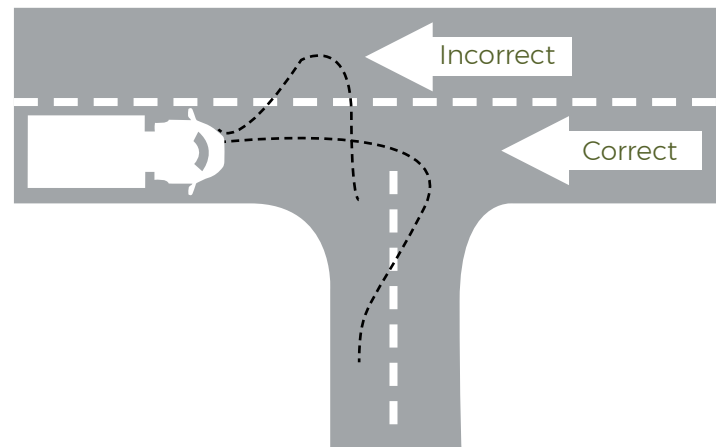
When approaching an occupied intersection, take your foot off the accelerator and poise it over the brake until you have assurance that it is clear to continue. Once you are sure that it is clear, accelerate and exit the intersection as quickly as possible. Keep in mind that there are no physical obstructions to stop conflicting traffic. When a professional driver crosses an intersection and the obvious action of the “other driver” indicates possible involvement either by reason of their excess speed, crossing lanes in turning or coming from behind a blind spot, the decision based on such entrapment should be PREVENTABLE regardless of who violated the law.

The “Stale Green Light” is a traffic signal that has been green from the time the driver first observed it. Since the driver has no idea how long it has been green, they must assume that it can turn to

yellow/red at any instant. Therefore the driver must slow and prepare to brake as they approach the intersection. Do not let the vehicle you are following dictate your decision to enter the intersection. Never “chase” other vehicles or rush into a controlled intersection. Hard brake stops at controlled or uncontrolled intersections are indications that the driver’s safety attitude and awareness levels are lacking. It’s probably time for refresher training.

Right Hand Turns

¹³Tractor-trailer combinations, buses, and longer single unit commercial vehicles require much more room to turn than automobiles. When making right turns, these larger vehicles will move either partially or entirely into the adjacent left lane before they start the turn. This maneuver is necessary to afford the driver the turning radius needed to complete the turn.



Often, when the driver moves to the left and then starts the turn, drivers of automobiles will attempt to pass on the right. These drivers often end up being struck by the trailer or colliding with the passenger side of the CMV.

The positioning of the CMV prior to and during the turn in relation to its overall length must be considered when dealing with this type of incident. If the driver was appropriately positioned to make this maneuver safely, the violation would be committed by the driver of the automobile. However, if during the turn the truck driver encroached into

¹² Motor Fleet Safety Supervision; Principals and Practices (NATMI)

¹³ Commercial Motor Vehicle Traffic Enforcement; Idaho State Police; P.O. Box 700, Meridian, Idaho



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the right-of-way of approaching traffic, a violation would be charged to the truck driver. Liability may vary depending upon where the impact occurs along the length of the truck making the turn. The further to the rear of the truck the impact is, the more likely it will be for the other vehicle to share some or greater portion of the liability. Since state laws vary, determining liability also depends upon where the collision occurs in.

When possible, remain in your lane as long as possible and only move left at the last moment as you execute a button-hook turn. Never enter into oncoming traffic lanes to accomplish a turn. If necessary, enter into the stopped traffic lane of the road that you are turning into. If it is occupied, stop far enough back to allow the traffic in front of you to move and give you room to complete the turn. Execute right turns slowly and watch for traffic that might encroach on your right side. Be prepared to stop to avoid colliding with them. Regardless of legal liability, right hand turn collisions are considered PREVENTABLE.

Left Hand Turns

Drivers need training and experience to understand when their maneuver may involve “Risk Increasing Factor” (RIF).¹⁴ Statistical analysis shows that left-hand turns across the path of oncoming traffic have propensity for being a “critical event” and can lead to severe crashes. This is especially true in poor visibility conditions that limit the response time of oncoming traffic. Drivers should use extreme caution when making this type of maneuver and look for alternate routes or seek assistance to check for traffic before proceeding.

When making left hand turns, be aware that it will take a tractor-trailer as much as 15 seconds to clear the intersection. On rural highways, speed limits are higher and approaching traffic may be traveling more than 90 feet per second. Be sure that you have enough time to safely complete the turn without causing approaching traffic to adjust to your presence.

In cities or towns, pedestrians crossing the street represent a major hazard. Before starting your turn, look to your left to make sure that no crossing pedestrians will force you to stop in the middle of your turn and block approaching traffic. When looking to the right, make sure that your mirror is not blocking your view of pedestrians that are attempting to cross the street.

In limited visibility conditions such as fog or heavy snow and rain, do not attempt to make a left turn. Motor Carrier Safety Regulations require extreme care in such situations, including the cessation of activities until the conditions improve. Never take a chance and turn across traffic if you cannot see far enough to identify approaching traffic. Left hand turn collisions are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|---------|---|-------------------|----------------|----------|
| 392.2C | Failure to obey traffic control device | Dangerous Driving | Unsafe Driving | 5 |
| 392.2T | Improper turns | Dangerous Driving | Unsafe Driving | 5 |
| 392.2Y | Failure to yield right of way | Dangerous Driving | Unsafe Driving | 5 |

¹⁴ Analysis of Crossing Path Countermeasure Systems; Wassim G. Najm, Johnathan A. Koopman; Volpe National Transportation Systems Center; David L. Smith; NHTSA



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U-Turns

U-turns are never a safe option and are particularly dangerous at night or in areas of limited visibility. Studies have shown that making a U-turn from a stop takes the average truck at least 40 seconds to complete. During that time, the trailer is blocking the travel lanes and presents a hazard to all other traffic. (60 mph traffic will travel approximately 3/4 of a mile while you are completing this maneuver) At night, the brightness of a Commercial truck's headlights will mask the marker lights on the trailer. The reflective striping on the side of the trailer is invisible until the

trailer is close to be at a 90-degree angle across the road. Combine these phenomena with the fact that a car driver sits low enough to see under the trailer and focus on lights that are farther away and you have created an invisible barrier for approaching traffic. Trailer run-unders are almost always a catastrophic event. Avoid U-turns across highways. Rather, find a safe location to turn around in and then make a normal pull-out and turn. Even then, keep in mind that the average pull-out and left turn takes as much as 17-20 seconds. Never make such a turn if traffic is close enough that it will be required to adjust to your presence. U-Turn collisions are PREVENTABLE.

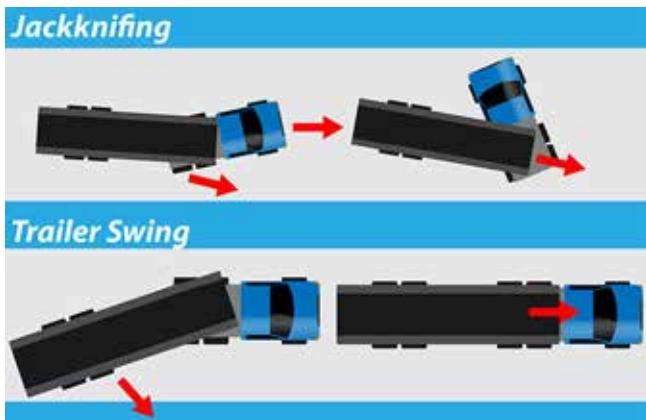
Jackknife & Skidding

Jack-knifing occurs when either the tractor loses traction and is pushed sideways by the trailer, or the trailer loses traction and begins to swing around the tractor. Most Jack-knives occur when the driver applies too much braking and causes the drive tires to slide, or when braking occurs while steering. If

the alignment between the tractor and trailer is not straight, when braking occurs, the trailer will try to push the tractor sideways. Steer, accelerate and brake gently.

Jack-knives also occur when the driver tries to steer out of the control loss and overcompensates. This causes the truck to react more violently and is even harder to control. Remember that, if the angle between your tractor and your trailer exceeds 15 degrees, it is unlikely that you will be able to recover.

When operating on limited traction surfaces reduce speed and increase your following distances. This allows greater vehicular control and prevents skids and jackknifing. The CDL manual and the NSC recommend speed reductions of 30% on wet roads, 50% on snowy surfaces, and reducing speed to a "crawl" in ice. Following distances should be increased by at least 1-2 seconds. Jackknives and skidding are PREVENTABLE. (See CFR 49, PART 392.14)



| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|---------------|--|------------------|----------------|----------|
| 392.2- SLLS4 | State/Local Laws - Speeding 15 or more miles per hour over the speed limit | Speeding 4 | Unsafe Driving | 10 |
| 392.2- SLLSWZ | State/Local Laws - Speeding work/construction zone | Speeding 4 | Unsafe Driving | 10 |
| 392.2- SLLS3 | State/Local Laws - Speeding 11-14 miles per hour over the speed limit | Speeding 3 | Unsafe Driving | 7 |
| 392.2S | Speeding | Speeding Related | Unsafe Driving | *1 |
| 392.2- SLLS2 | State/Local Laws - Speeding 6-10 miles per hour over the speed limit | Speeding 2 | Unsafe Driving | 4 |

*392.2S violations from January 1, 2011 or later will be weighted at 1. The rest are weighted 5.



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Mountain Driving

When applying brakes while descending mountain grades, the kinetic energy of the vehicle in motion is transferred to the brake drums and converted to thermal energy. To prevent brake fade due to overheated brakes, “snub braking” is recommended (as opposed to applying a light brake throughout the descent.)¹⁵ Apply the brakes just hard enough to feel a definite slowdown. When your speed has been reduced to approximately five mph below your “safe” speed, release the brakes. (This brake application should last for about three seconds.) When your speed has increased to your “safe” speed, repeat steps 1 and 2. For example, if your “safe” speed is 40 mph, you would not apply the brakes until your speed reaches 40 mph. You now apply the brakes hard enough to gradually reduce your speed to 35 mph and then release the brakes. Repeat this as often as necessary until you have reached the end of the downgrade. Drivers of modern trucks may have to use lower gears going down a hill than would be required to go up the hill. You should know what is right for your vehicle. If your vehicle is equipped with an engine brake, (commonly referred to as a “Jake brake”), use it on steep grades unless the roadway is wet or slippery.

¹⁶How to prevent Mountain Grade Crashes: The best advice for descending mountain grades may

come from the old trucker’s proverb that states, “You can descend a mountain as many times as you like too slowly, but only descend the mountain once too fast”. If a driver wishes to determine if he is descending grades too aggressively he can do so easily. This analysis is done by (1) descending the grade at a speed believed to be safe, (2) finding a safe place at the base of the grade to stop, and (3) checking the truck’s brake temperatures with an infrared thermometer (a \$30 to \$50 tool). If the truck is unable to stop, the brake temperatures are over 500 degrees, or if a brake odor is identified, the descent was too aggressive.

Additionally, paints that change color when a specified temperature is reached are commonly used on race cars’ brakes to determine how hot they are getting during a race. These paints are relatively cheap, readily available, and could be used on a truck for the same propose.

Improper brake adjustment and out of balance braking systems add to brake failure. On airbrake systems, check for properly adjusted and equally matched slack adjustors, brake chambers and pushrods on both ends of each axle before beginning a steep mountain grade descent. Mountain grade collisions are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|---------|---|--------|---------------------|----------|
| 393 | Brakes (all violations) | Brakes | Vehicle Maintenance | 4 |



¹⁵ Indiana Commercial Drivers License (CDL) Test Booklet
¹⁶ John C. Glennon, Lenexa, KS, johnjr@crashforensics.com



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Night Driving

Driving is more hazardous at night time due to restricted visibility. Reduce speed and increase following distance to compensate. Night speed should not be greater than that which will permit the vehicle to come to a stop within the forward distance illuminated by the vehicle's headlights.

When pulling out onto or across a roadway, wait until there is no traffic present and you cannot see the glow of oncoming headlights. If there is a blind curve in either direction, solicit assistance from someone who, while standing back from the berm near the blind curve, can watch for oncoming traffic before you pull out. You will probably not be able to see the guide so you will need to establish two way contact via cell phone or other unique visible or audible signal that cannot be confused with that of an oncoming motorist.

As you pull out, never flash hi-beams on/off at oncoming motorists as they may experience temporary loss of night vision and be unable to see the hazard that they are being warned against. In addition, since they cannot see the hazard, they assume that they are being told to dim their lights, and do not perceive the flashing lights as a warning. To warn other motorists, drivers should sound their horn or quickly turn their lights off/on. Never flash your bright lights at oncoming traffic.

Driving at night is also more dangerous particularly between 9 pm and 5 am due to normal human Circadian Rhythm and accumulated fatigue greatly increasing the chances of drowsy driving. Industry Best Practice would be to screen all drivers for sleep apnea and to include Fatigue Management with all training on Hours of Service. Night driving collisions are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|---------|---|------------------------------|----------------|----------|
| 392.3 | Operating a CMV while ill/fatigued | Jumping OOS/Driving Fatigued | HOS Compliance | 10 |

Parking Lots and Truck Stops

Parking lot congestion is a potential driving hazard for any commercial driver. Whether you are stopping to rest, get a bite to eat, or make a delivery, no matter how adept you are at backing and turning your vehicle with accuracy and precision, you have little, if any control over the actions of others. Inevitably either while entering or exiting a parking lot, or backing up, an adjacent driver will move at the wrong time and a collision results.

Parking lots are usually private property. Be careful to avoid striking a fixed structure, overhead wires and signs. There may also be little, if any traffic control signage or pavement markings. This can cause driver errors and indecision. Never cut through parking lots, always travel in designated traffic lanes, if applicable. Frequently other motorists and pedestrians may be rushing to get to an appointment or to simply locate their



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final destination and will act erratically. If you are in a large vehicle, be prepared for them to walk or drive directly in your path of travel, either claiming not to see you, or seeing you but assuming you will automatically stop for them.

Be ready for other drivers to pull out, start or stop unexpectedly from any direction. Exercise great caution while turning near cross walks and down parking lanes, staying constantly vigilant for pedestrians, bicycles and motorcycles. Use your turn signals or a brief tap on the steering wheel horn to alert others of your presence. If pedestrian traffic is observed, determine where the pedestrian is before moving your vehicle.

Prevent backing collisions at truck stops and parking lots by following previously described Backing and Docking, and Baking in Traffic guidelines. Park in a well-lit area so that others may better see your vehicle when maneuvering around it. Lock and secure your vehicle before leaving unattended. Before getting back in your vehicle to resume driving, inspect for any body damage, fluid leaks underneath, or any signs of broken glass on the ground around it.

Prevent security incidents. Park in well-lit and secure area; lock the vehicle and cargo area, even if unit is not loaded. Never leave a parked vehicle unlocked with a spare set of keys “under the mat”, “over the visor” or “in the ashtray” for the next driver or mechanic. Even if just going in to pay for fuel or to eat a quick lunch, always lock unattended vehicles. Dash cameras and other surveillance devices are also helpful tools in monitoring your vehicle while you are away.

Incidents involving vehicles parked improperly at unconventional locations, double-parking, failure to put out warning devices and rollaway collisions are PREVENTABLE. When leaving the vehicle unattended, the driver is responsible for locking, blocking and bracing it to prevent movement. When parked on a hill, the steering wheels should be pointed towards the curb. Wheel chocks would be advisable for this scenario.

Collisions and security incidents involving a properly parked, locked and secured vehicle are NON-PREVENTABLE.

| <i>Section</i> | <i>Violation Description - Roadside Inspection</i> | <i>Group</i> | <i>BASIC</i> | <i>Severity</i> |
|----------------|--|-------------------------|---------------------|-----------------|
| 392.22(b) | Failing/improper placement of warning devices | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 392.22(a) | Failing to use hazard warning flashers | Other Driver Violations | Unsafe Driving | 1 |
| 390.20 | Failing to properly secure parked vehicle | Other Driver Violations | Unsafe Driving | 1 |

Parking on Shoulders

¹⁷Parking on controlled access or other roadways by CMV drivers can be a significant contributing factor to injury or fatal crashes. The main reason CMVS are parked on highway shoulders and other unsafe locations is mechanical breakdown. However, drivers are often in need of rest, particularly in the early morning hours, and may not know the locations of nearby rest areas or truck stops. Also, deliveries scheduled for early morning often cause a driver to park at the city limits or near the delivery point to wait for the delivery location to open.

Many crashes involve vehicles striking trucks parked on the shoulder. Studies indicate that CMVS were involved in the major portion of these crashes and that they occurred primarily between midnight and 6 a.m. Alcohol involvement or fatigue were the two main causes noted.

Officers and company management should be aware of the potential for serious crashes associated with CMVS parking on highway shoulders. Providing assistance for disabled vehicles and informing drivers of safe parking areas will contribute to a reduction of CMV crashes.

¹⁷ Commercial Motor Vehicle Traffic Enforcement; Idaho State Police; P.O. Box 700, Meridian, Idaho



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Most states and local jurisdictions prohibit parking on the shoulder for any reason other than emergency. Being lost or sleep is not considered an emergency since there are generally multiple alternatives to stopping on the shoulder. Never park on a shoulder unless it is an emergency or you are directed to by law enforcement officials.

If an emergency requires that you park on a shoulder of the highway, be sure to comply with FMCSR 392.22 and place your triangles behind the truck at the prescribed distances as soon after parking as possible, but in any event within 10 minutes. Keep in mind that many such emergencies can be identified and prevented by a good pre-trip inspection. Parking on shoulder related collisions are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|-----------|--|-------------------------|----------------|----------|
| 392.2C | Failure to obey traffic control device | Dangerous Driving | Unsafe Driving | 5 |
| 392.2LV | Lane Restriction violation | Misc Violations | Unsafe Driving | 3 |
| 390.20 | Failing to properly secure parked vehicle | Other Driver Violations | Unsafe Driving | 1 |
| 392.2PK | Unlawfully parking and/or leaving vehicle in the roadway | Other Driver Violations | Unsafe Driving | 1 |
| 392.22(a) | Failing to use hazard warning flashers | Other Driver Violations | Unsafe Driving | 1 |

Passengers

A good ship captain is responsible for all riders in the vehicle. Injuries to occupants of passenger seat, sleeper berth or to public and private auto passengers are considered and included with

determination of preventability resulting from any collision, near miss or evasive maneuver. Only authorized passengers may be allowed to ride in a Commercial Motor Vehicle. Transporting an unauthorized passenger should be classified as Major Preventable.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|------------|--|-------------------------|---------------------|----------|
| 374.313(a) | Failure to maintain a reasonable temperature | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 374.313(b) | Bus - Failure to maintain restroom | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 374.313(c) | Bus - Not maintained in clean working order | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 393.89 | Bus driveshaft not properly protected | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 393.90 | Bus-no or obscure standee line | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 393.91 | Bus-improper aisle seats | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 393.93(a) | Bus-not equipped with seat belt | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 392.60(a) | Unauthorized passenger on board CMV | Other Driver Violations | Vehicle Maintenance | 1 |
| 392.62 | Unsafe bus operations | Other Driver Violations | Vehicle Maintenance | 1 |
| 392.62(a) | Bus—Standees forward of the standee line | Other Driver Violations | Vehicle Maintenance | 1 |



CRASH COUNTERMEASURES

Passing

Passing another vehicle is a voluntary maneuver on the driver's part. The driver should never pass other traffic unless there is a distinct safety advantage in doing so, particularly on two-lane, undivided highways. Reaching one's destination a few minutes earlier does not constitute a safety advantage because the risk involved in the passing maneuver far outweighs saving travel time. Drivers must also yield to vehicles passing them by slowing down or moving to the right when possible.

Before attempting a pass, ask yourself, "Is it necessary?" Most cars are only traveling a short distance and the time that is lost by following them is minimal. Keep in mind that it is not legal to speed while passing, and if there is only a 5 mile speed difference between your vehicle and the one

ahead, you will be overtaking it at a speed of 7 feet per second. By the time that you account for your vehicle length, the length of the vehicle that you are passing, and the space cushion that you must leave, you may be in the passing lane for as much as 30 seconds or more. On a 55 mph roadway during the 30 seconds, you will travel almost a half of a mile in the oncoming traffic lane. Often, there is not enough sight distance to safely pass.

If you must pass, alert the other driver before making the attempt. This will prevent him from moving left during your pass. Use your lights (if there is no traffic in the oncoming lane) or city horn to alert him and watch for his eyes to make contact through his mirror.

All collisions involved in passing are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|---------|---|-------------------|----------------|----------|
| 392/2V | Failure to obey traffic control device | Dangerous Driving | Unsafe Driving | 5 |
| 392.2LV | Lane Restriction violation | Misc Violations | Unsafe Driving | 3 |

Pedestrians and Cyclists

¹⁸Traffic regulations and court decisions generally favor the pedestrian hit by a moving vehicle. An unusual route of a pedestrian at mid-block or from between parked vehicles does not necessarily relieve a driver from taking precautions to prevent such collisions.

Be aware of cyclists in yours and others' blind spots, beyond hillcrests or curves in the road. Be especially cautious of this when turning left across oncoming traffic. Never assume that cyclists or pedestrians are aware of your oncoming vehicle. When approaching pedestrians walking off the sidewalk on your side of the road, give a gentle tap on the steering wheel horn and alert them to your presence. Be prepared to slow or stop at any time.

The utmost care and precaution must be taken by drivers in pedestrian and cyclist areas. Be extremely cautious around school zones, bus stops, intersections, crosswalks, parking lots, parked cars,

accident scenes, and work zones. When driving at night, err on the side of safety and assume that there could be a pedestrian on the side of the road anyplace at any time. If possible, gradually merge to the left lane before passing vehicles parked to the right side of the road, even if they are off of the roadway and there is no one visible in the area.

Most jurisdictions have a "Move Over" law that requires motorists to change lanes when possible, away from law enforcement, emergency and utility personnel working on the side of the road. When not possible, these laws generally require drivers to reduce speed to at least 10 mph under the posted limit and proceed with caution. These laws are designed to protect these personnel from injury and should be used anytime you encounter a pedestrian or cyclist along the roadway.

Pedestrian and cyclist collisions normally result in injuries and frequently in fatalities and are therefore classified as MAJOR PREVENTABLE.

¹⁸ Motor Fleet Safety Principals and Practices; North American Transportation Management Institute



CRASH COUNTERMEASURES

Railroad Grade Crossing

¹⁹Drivers of CMV's that are transporting hazardous material in quantities requiring placards or any bus transporting passengers are required to make a complete stop at all railroad grade crossings. After stopping and looking for approaching trains, drivers may then continue across the tracks without shifting gears.

All States have statutes requiring CMV's of this type (hazmat) to stop at railroad grade crossings. When officers observe a CMV displaying hazardous materials placards and it fails to come to a complete stop at a railroad grade crossing, a violation has occurred and the stop should be initiated. After



stopping the placarded CMV in a safe location, officers should obtain the shipping papers from the driver and note the commodity transported on the

citation, e.g., gasoline, sulfuric acid, compressed gas, poison gas, chlorine, or check the "HM" box on the citation, if provided. Officers should be aware of state statutes that govern the movement of placarded CMV's and buses at railroad grade crossings.

CDL drivers convicted of a railroad grade crossing violation are disqualified for 60 days; a second offense within 3 years disqualifies the driver for 120 days; a third offense within 3 years disqualifies the driver for 1 year. Violations include failure to: slow, stop, allow sufficient clearance or obey RR traffic control device.

Every year hundreds of accidents at railroad grade crossings can be avoided if drivers follow these simple procedures:

- 1) Expect a train on any track at any time, day or night.
- 2) Never get trapped on a grade crossing. When traffic is heavy, wait on the approach to a crossing until you are sure you can clear the crossing.
- 3) Look for a second train. After the last car of the train passes, check both directions to see if another train is approaching.
- 4) Never drive around crossing gates. If the gates are down, do not cross the tracks.
- 5) Never shift gears on the crossing.
- 6) Watch for vehicles that must stop at a crossing. Be prepared to stop when following buses or trucks which are required to stop at railroad crossings.
- 7) Never race a train to the crossing.

Railroad grade collisions are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|--------------|---|-------------------|----------------|----------|
| 392.2RR | Railroad Grade Crossing violation | Dangerous Driving | Unsafe Driving | 5 |
| 392.10(a)(1) | Failing to stop at railroad crossing—bus | Dangerous Driving | Unsafe Driving | 5 |

¹⁹ Commercial Motor Vehicle Traffic Enforcement; Idaho State Police; P.O. Box 700, Meridian, Idaho



CRASH COUNTERMEASURES

Striking Other in Rear

Remember, at highway speeds, a truck may be traveling over 100 feet per second. This means that it will travel a football field every 3 seconds. A few seconds of distraction can create a catastrophic situation. Stay alert and keep your eyes scanning. Pay attention to changing traffic and heed highway warning signs. Slow down for construction zones. Turn on flashers or hazard lights when approaching work zones.

Maintain a safe following distance Drivers should be taught to use the following distance guide of one (1) second of following distance for each ten (10) feet of vehicle length with a minimum of 7 seconds for tractor-trailers and 5 seconds for straight trucks under ideal driving conditions. Following distances should be increased when adverse conditions that affect traction or visibility exist.

Many rear end collisions result from driver inattention. One of the few advantages that a driver has is the fact that his eye height is approximately 8 feet above the ground. This gives him the opportunity to see over other traffic and observe potential hazards before they become a danger. Drivers should scan 12-15 seconds ahead of their vehicle at all times and be

prepared for sudden stops or traffic problems that could result in a frontal collision.

²⁰Regardless of the abrupt or unexpected stop of the vehicle ahead, drivers can still prevent a rear end collision by maintaining a safe following distance at all times. This includes being prepared for possible obstructions (debris, animal carcasses or potholes) on the highway, either in plain view or hidden by the crest of a hill or the curve of a roadway. Overdriving headlights at night is a common cause of rear end collisions. Night speed should not be greater than that which will permit the vehicle to come to a stop within the forward distance illuminated by the vehicle's headlights. Anticipate early morning sunrise while travelling east, and evening sunset while travelling west. It can cause momentary blindness. Be prepared to put visor down and have sunglasses in shirt pocket and available if needed. Slow down when driving into sunlight - don't overdrive the distance you can see ahead. If possible, select these times of day for your break and park the truck until the sun is well above or below the horizon.

Striking other in rear and Front end collisions are PREVENTABLE

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|---------|---|-------------------|----------------|----------|
| 392.2FC | Following too close | Dangerous Driving | Unsafe Driving | 5 |

Struck by other in rear

²¹Investigation will often disclose that a driver risked being struck from behind by failing to maintain a margin of safety in their own following distance. Rear end collisions preceded by a roll back and abrupt stop at a grade crossing, when traffic signal changes, or when the driver fails to signal a turn at an intersection, failure to signal intentions or to slow down gradually should be considered PREVENTABLE.

Rushing to beat a traffic light that is changing to red - but subsequently braking hard to stop for the intersection can result in being struck from behind.

This is a PREVENTABLE collision.

If others are tailgating you, slow down. By doing so, you encourage them to pass. If they remain behind, a slower speed gives them more time to react if you have to make a sudden stop.

Maintain a safe following distance. Keep your eyes on the road ahead; check mirrors every 3-5 seconds. Do not text, talk on cell phone or operate computers, etc. while driving.

²⁰ Motor Fleet Safety Principals and Practices; North American Transportation Management Institute

²¹ Motor Fleet Safety Supervision; Principals and Practices (NATMI)



CRASH COUNTERMEASURES

Rollover

“Rollover root causes are varied, and rollover accidents are often the result of multiple related or unrelated causes. However, rollovers most commonly can be categorized as a result of the following situations:

- 1) Excessive speed around ramps/curves in the highway.
- 2) Excessive speed in slippery conditions.
- 3) Swerving to avoid obstacles, resulting in loss of control or over-correction.
- 4) Simple inattention
- 5) Driver fatigue
- 6) Turning too sharply at intersections.
- 7) Leaving, and then trying to return to, the highway
- 8) High Winds
- 9) Failure to properly secure your load

Each of these most common causes has individual preventative countermeasures (refer to “Unsafe Driving Behavior” countermeasures). Prior to driving

the commercial vehicle, the following preventability countermeasure will be common to all types of rollovers:

- 1) Ensure vehicle is safe and well maintained, particularly the brakes, tires and suspension system.
- 2) Understand the nature of the load, the center of gravity of the load, and ensure load is properly secured.
- 3) Complete a trip plan, and to the extent possible know in advance the types of roads that will be traveled.
- 4) Always wear your seat belt.”²²
- 5) Remember that posted curve and ramp speeds are designed for automobiles. Reduce your speed by 10mph or more under the posted speed when negotiating these turns. (Drivers of unstable loads such as liquids should increase their speed by even more.)

BASIC Unsafe Driving and Vehicle Maintenance violations apply to basic loss of control resulting in rollovers.

Rollovers are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|--------------|--|--------------------|---------------------|----------|
| 392.2- SLLS4 | State/Local Laws - Speeding 15 or more miles per hour over the speed limit | Speeding 4 | Unsafe Driving | 10 |
| 392.2-SLLSWZ | State/Local Laws - Speeding work/construction zone | Speeding 4 | Unsafe Driving | 10 |
| 393.75 | Tires/Defective | Tires | Vehicle Maintenance | 8 |
| 392.2- SLLS3 | State/Local Laws - Speeding 11-14 miles per hour over the speed limit | Speeding 3 | Unsafe Driving | 7 |
| 393.90 | Suspension | Suspension | Vehicle Maintenance | 7 |
| 393.91 | Steering Wheel | Steering Mechanism | Vehicle Maintenance | 6 |

²² © North American Transportation Institute; August 2010 Motor Fleet; Leo Hughes, CDS, ARM; Great West Casualty Company



CRASH COUNTERMEASURES

School Zones

- There are 450,000 school buses in service.
- More than 25 million students ride school buses daily.
- School buses travel 2 million miles every school day.
- There are 16,000 school bus collisions annually.
- There are 12,000 injuries & 130 deaths involving school buses annually.

Awareness is a key. Be aware of school zones, bus traffic and stops within your radius of operations, particularly during mornings and afternoons. Stay away from the danger zone (passenger loading/unloading.) The pentagon shape with the point to the top warns us to watch for school children. The new color for these signs - fluorescent yellow-green - is much easier to see in low light and foggy/rainy weather.



School Zone collisions are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|---------|---|-------------------|----------------|----------|
| 392/2V | Failure to obey traffic control device | Dangerous Driving | Unsafe Driving | 5 |
| 392.2LV | Lane Restriction violation | Misc Violations | Unsafe Driving | 3 |



CRASH COUNTERMEASURES

Under-ride

Under-ride collisions can occur while pulling or backing across traffic or even while legally stopped or parked. If the velocity of the oncoming vehicle is great enough to cause it to under-ride the truck or trailer past the A-pillars, the results can be tragic. Since the truck driver is usually engaged in a slow speed maneuver, or not even moving at all, when an under-ride occurs it is both startling and puzzling because the truck driver normally can't understand why another vehicle would simply drive into this big truck without seeing it.

To prevent this type of collision from occurring to you, take the following precautions:

- Never pull out or attempt a turn if doing so will force other traffic to adjust to your presence by braking or swerving.
- If pulling into and through an uncontrolled intersection is the only option – do not creep out.

Make sure that is safe to do so and Shift gears as necessary, complete the maneuver as quickly as possible.

- As you pull out, never flash hi-beams on/off at oncoming motorists. . To warn other motorists, drivers should sound their horn or quickly turn their lights off/on. Never flash your bright lights at oncoming traffic
- Send a helper down the road to flag traffic while you pull out or back in. Agree on signals.
- As you perform your safety inspection, take a rag with you and wipe down the conspicuity tape, reflectors, and lights on your truck or tractor and trailer. This helps other motorists see and react properly (Defensive Driving; Communicating with Other Motorists).

Under-ride collisions are PREVENTABLE.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|------------------------|--|----------------------------|---------------------|----------|
| 392.33 | Operating CMV with lamps/reflectors obscured | Lighting | Vehicle Maintenance | 6 |
| 393.9, 17, 19, 24 & 25 | No/inoperative/defective lighting | Lighting | Vehicle Maintenance | 6 |
| 392.2DH | Headlamps - Failing to dim when required | Misc Violations | Unsafe Driving | 3 |
| 393.11 | Retroreflective sheeting violations | Reflective Sheeting | Vehicle Maintenance | 3 |
| 393.86 | No or improper rear end protection | Cab, Body, Frame | Vehicle Maintenance | 2 |
| 393.9(a) | Inoperative required lamps | Clearance, ID, Lamps/Other | Vehicle Maintenance | 2 |
| 393.11 | No/defective lighting devices/reflective devices/projected | Reflective Sheeting | Vehicle Maintenance | 3 |
| 392.22(a) | Failing to use hazard warning flashers | Other Driver Violations | Unsafe Driving | 1 |



CRASH COUNTERMEASURES

Wind

Crosswinds of as little as 27 miles per hour can adversely affect a driver's ability to safely operate high profile CMVs. Gusting winds can catch a driver by surprise and cause his vehicle to swerve or veer into the other lane. Light loads increase this instability and can result in overturns, swerving, or run-off-the-road accidents. When operating in high winds slow down and increase your attention on your mirrors to make sure that your trailer is not tracking to the side. When being passed, be aware of the added turbulence that your truck generates in high cross winds. Assist the passing motorist by slowing and moving to the far right side of your lane. If wind and gusts become extreme making it difficult to stay in your lane of travel, pull over at the first safe opportunity and park the vehicle until winds calm down.

Losing control of the vehicle due to high winds is considered PREVENTABLE



The second problem with dry roads is aggressive driving. Drivers often try to make up lost time when they hit the good roads. This results in speeding and aggressive driving. While this is dangerous at any time, it is especially dangerous when tired or stressed drivers are involved. Slow down and maintain your professionalism. If you are tired, even if you have time left to drive, pull over and rest until it is safe to continue. Winter driving presents extra risks while you are on the road. However, by taking a little extra time, care, and skill we can all survive and enjoy the arrival of spring.

Winter Driving, Inclement Weather and Adverse Conditions

Adverse Conditions

No matter how much we hate it, winter is inevitable. The time to begin reviewing our driving techniques and preparing ourselves for the changes that we will need to make in response to the adverse conditions is before it gets here. The first thing to remember is that others don't prepare! Every year, the average driver must slide through at least one traffic light or stop sign before he remembers that it is necessary to slow down and begin stopping well in advance of the intersection. If you are not prepared, they will slide into your path and another collision will go into the books. Don't let others control your safe driving record.

Dry Roads and Good Conditions

Dry roads and good conditions are not a problem, right? Wrong! Some studies have shown that more winter collisions occur on good roads than on the snow and ice. Why? There are a couple of reasons. First, drivers who have been driving "on the edge of their seat" on bad roads develop fatigue more rapidly. When they hit the good roads, they relax and are not as alert to dangers.

Intersections

Reduce your speed and be prepared to stop at intersections, even if you have the right of way. Watch for approaching traffic, evaluate their speed, and then exercise your professionalism by stopping or slowing to avoid them. Do not swerve in the direction of their travel. If you do, a collision will become inevitable. Instead, maintain your lane, or if safe to do so, swerve so that you will be where they have been-- not where they are going.



CRASH COUNTERMEASURES



Visibility

Adverse driving conditions are not limited to traction. Blowing snow or fog can create “white-out” conditions that obstruct your ability to see. As a rule of thumb, if you cannot see at least 7 seconds ahead of your vehicle, slow down to whatever speed is necessary to adjust. If the speed reduction causes you to become a hazard to people behind you, find a safe place and park until the conditions improve.

Often times it is difficult to evaluate the visibility ahead. Thick fog can appear to be the same as a long, attenuated stretch of fog. Watch for other traffic and if their taillights disappear, slow down! Likewise, if approaching traffic suddenly appears out of the fog or snow, slow down! If there is any doubt or concern in your mind, slow down! Waiting to slow until after you have entered the area of reduced visibility is a formula for disaster. When entering an area of reduced visibility, make sure that your lights are on and that your 4-way flashers are activated. Do not use high beams since the reflected light will make it harder to see.



CRASH COUNTERMEASURES

Speed Reduction

Snow, ice, and rain all affect your ability to control and, most importantly, stop your vehicle. When traction is reduced, SLOW DOWN. The National Safety Council and the CDL manual recommend a 25%-30% speed reduction for wet roads, 50% for snowy conditions, and reducing your speed to a crawl on icy conditions. Ultimately, if you feel that it is unsafe to continue, find a safe location and park your truck until the conditions improve. This is not only good sense, but it is the law as well. No freight schedule or load is worth your life or the lives of others.

- Adjust speed to conditions. 65 mph is safe only in perfect driving conditions.
- As darkness falls, reduce speed by at least 5 - 10 mph.
- In wet conditions (rain, mist, melting snow, etc.), reduce speed at least 5 - 10 mph. Heavy rain or standing water may require much greater speed reductions.
- In winter weather (temperature below 40°F),

reduce speed at least 5 - 10 mph. As the temperature approaches freezing, reduce speeds even further and watch for signs of ice formation. Although black ice is one of the worst driving conditions, it is predictable. Good drivers respond to the potential and slow before encountering the areas of reduced traction. Remember, bridges and overpasses freeze before the rest of the highway.

- Recognize that hazards may be present beyond vision barriers such as hills, curves, road markers and terrain features that obstruct vision. To compensate, reduce speed at least 5 - 10 mph.
- With all four conditions present, you should be travelling at least 20 - 40 mph slower than ideal conditions, putting your maximum safe rate of speed at 25 - 45 mph.
- Be aware of black ice conditions during winter driving, particularly at early evening, at dusk, on overpasses and bridges, while exiting from underpasses and tunnels and especially when rounding highway curves or cresting hills.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|--------------|--|----------------------------|---------------------|----------|
| 392.2- SLLS4 | State/Local Laws - Speeding 15 or more miles per hour over the speed limit | Speeding 4 | Unsafe Driving | 10 |
| 392.2-SLLSWZ | State/Local Laws - Speeding work/construction zone | Speeding 4 | Unsafe Driving | 10 |
| 392.2- SLLS3 | State/Local Laws - Speeding 11-14 miles per hour over the speed limit | Speeding 3 | Unsafe Driving | 7 |
| 392.16 | Failure to use seat belt while operating a CMC | Seat Belt | Unsafe Driving | 7 |
| 392.14 | Failed to use caution for hazardous condition | Dangerous Driving | Unsafe Driving | 5 |
| 393.78 | Windshield wipers inoperative/defective | Windshield, Glass, Marking | Vehicle Maintenance | 1 |
| 393.79 | Defroster/defogger inoperative | Windshield, Glass, Marking | Vehicle Maintenance | 1 |
| 392.71(a) | Using or equipping a CMV with radar detector | Speeding Related | Unsafe Driving | 5 |
| 392.2- SLLS2 | State/Local Laws - Speeding 6-10 miles per hour over the speed limit | Speeding 2 | Unsafe Driving | 4 |
| 393.82 | Speedometer inoperative / inadequate | Other Vehicle Defect | Vehicle Maintenance | 3 |
| 392.2S | Speeding | Speeding Related | Unsafe Driving | *1 |



CRASH COUNTERMEASURES

Work Zones

SLOW DOWN FOR THE WORK ZONE!

Road construction picks up during the warmer months and whether it's a daily commute, or travelling out of town for business or pleasure, everyone eventually encounters a work zone. And unfortunately thousands of totally preventable accidents will occur there, altering and ending thousands of lives. In 2014 alone, 669 people died in highway work zones.

Although reduced speed limits are normally posted well in advance of the work zone entrance, all too often these are ignored by motorists. Even if no workers or equipment are present, the work zone is still dangerous.

Driving through work zones can be like running an obstacle course. Lane closures, chicanes, barriers and dividers, two-way traffic, uneven road surface, drop-offs, poor lighting and flashing lights can cause motorists to react in an unpredictable manner. Truck drivers sitting up higher have a better view than drivers in passenger vehicles. Cars that can't see as far slow to a crawl or even stop in the middle of the road as drivers become confused and misunderstand signs or flagger directions.

Chain reactions in construction zones are not uncommon. Flaggers have been killed when vehicles they had stopped are subsequently knocked into them by another other motorist that failed to stop. Rollovers can also occur in construction zones due to narrower lanes, lack of shoulder and roadway drop-off. Rollovers frequently result in driver and occupant fatality, particularly when seatbelts are not in use. Ejected occupants are crushed by the vehicle.

Construction equipment in the work zone also pose unique hazard. Typically over dimensional, oversize and overweight, they are either not moving at all or moving very slowly, crossing the roadway,



obstructing traffic or blocking the view of people and other vehicles. Many truck drivers have lost their lives after rear-ending slow moving construction equipment.

Even at slow speeds, disaster still occurs. Workers have been killed when vehicles - particularly dump trucks, backed over them due to limited visibility or loud noise in the work zone resulting in communication failures.

The bottom line is this. A construction zone is a work zone. Workers in the area are performing a hazardous job and need to pay attention to what they are doing. Even if there are no workers present, the construction zone is still a hazardous area. Drivers entering, driving through, and exiting construction zones need to pay attention to what they are doing, respect the dangers present and drive defensively.

As importantly, work zones create traffic conflicts as traffic becomes congested. Be aware of stopped traffic that may stretch well beyond the actual work zone. Be prepared to stop. Other drivers may wait until the last minute to force their way out of the closed lane. Slow down and anticipate such actions. Remember, a little courtesy goes a long way. Work zone violations carry the highest BASIC severity level.

| Section | Violation Description - Roadside Inspection | Group | BASIC | Severity |
|--------------|--|------------|----------------|----------|
| 392.2-SLLSWZ | State/Local Laws - Speeding work/construction zone | Speeding 4 | Unsafe Driving | 10 |

