

Seasonal Driving / Weather

Driving on Snow and Ice

Most of the time when your tires are in contact with the road they have good traction. But when snow and ice accumulate between your tires and the road you have poor tire grip, and a very slippery situation. With less traction and tire grip on the road surface, you will need to be alert and extremely cautious.

Whatever the situation, smooth ice, packed, blowing, or loose snow, accelerate and brake gently so as not to compromise the fragile traction. (If you accelerate too quickly, your tires will spin and lose contact with the road's surface.)

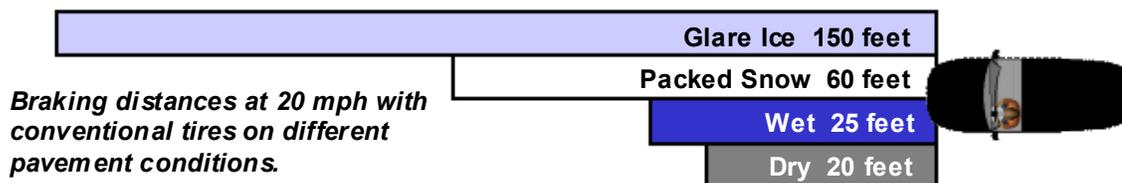
Increase your following distance. Allow a much greater space between your car and the vehicle ahead. Stay far enough behind other vehicles so you only have to brake when its absolutely necessary.

Reduce your speed to half your normal speed on snow-covered or icy roads. Execute all maneuvers slowly and smoothly to avoid reduced traction and skidding. Whenever you feel the wheels starting to slip, immediately ease off on the gas pedal until you feel the traction return. **DO NOT USE CRUISE CONTROL ON SLIPPERY ROADS!**

Your visibility will be reduced in blowing snow or on snow covered roads. Use extra effort to maintain an open line of sight and path of travel. Watch for ice, especially on bridges and in shaded areas. Remember, bridges freeze before other road surfaces because they have no ground insulation.

Give yourself extra room to stop. Slow down before stopping, turning or when approaching signs, signals and intersections. You could easily get involved in a conflict if you slide into an intersection.

Space = Time (Time to brake and steer)



Use caution and be alert if you have to drive.



Before you start driving, remove snow and ice from your entire car, including the roof, hood and rear of the vehicle. Be sure to clear all your windows, side view mirrors and front and rear lights of snow or ice so you can see and be able to communicate with other drivers.

Equip your car with all-weather snow tires or chains to increase tire traction, prevent skidding and improve stopping distance. (See module 1 - topic 4 - lesson 4: “Winter Driving Concerns” for more information on preparing for winter.)

Driving on Snow and Ice

Streets and highways covered with snow, packed snow or ice are extremely hazardous. Overpasses, bridges, shaded areas and snow packed portions of the road can be icy even when other pavement is not. To drive safely, you must have good tire contact with the road (traction). But when snow and ice are between your tires and the road there is a lot less tire grip on the road surface resulting in limited vehicle control and when the snow or ice begins to melt the danger increases. The slush or wet surface acts as a lubricant and reducing traction even more. Whatever the situation — smooth ice, packed snow, blowing or loose snow, slush or wet surface — you need to be very careful.



- **Accelerate gently**, if you accelerate too quickly, the drive wheels will spin and loose contact with the road.
- **Increase your following distance**. Allow a much larger space between your car and the vehicle ahead. Stay far enough behind other vehicles so you only have to brake when absolutely necessary.
- **Significantly reduce your speed** on snow-covered or icy roads. Execute all maneuvers slowly and smoothly to avoid disrupting vehicle balance and causing your tires to skid. Whenever you feel the drive wheels start to slip, immediately ease off on the gas pedal until traction returns.
- **DO NOT USE CRUISE CONTROL ON SLIPPERY ROADWAYS!**

- **Maintain an open line of sight and path of travel.** Visibility will be reduced in blowing snow or on snow covered roads. Use extra effort to watch for ice, especially on bridges, (bridges freeze before other road surfaces) and in shaded areas.
- **Give yourself extra room to stop.** When approaching signs, signals and intersections you can easily get involved in a conflict if your vehicle begins to slide because of packed snow or ice. Slow down before stopping or turning, and if you have to brake, apply the brakes gently.

Night Driving in the Snow



When driving at night it is important that you give yourself as much visibility of the road as possible. Be sure to clear all snow buildup on windows, wipers, headlights, and taillights as this will all have an effect on your driving. If it begins to snow or is snowing do not use your vehicle's high headlight beams, they will reduce visibility by reflecting off the falling snow making it more difficult to see where you are going. For better visibility during these weather conditions, keep your vehicle's headlights on low beam.

It is important to drive at a speed that allows you to react and stop safely within the distance illuminated by your headlights.

Drive defensively:

- Do not disrupt the flow of traffic by driving faster than everyone else, keep in mind that other drivers will be traveling cautiously as well.
- Increase your following distance. — Visibility and varying road conditions caused by the bad weather conditions will require more response time to react and stop safely. Increasing your following distance to six seconds or more will help give you more time to respond to situations that may arise.
- Drive slowly, even vehicles that have good traction in ice and snow can lose control — driving at a reduced speed will help minimize this risk.
- Signal your turns further ahead of time than usual, this will help to give other drivers and roadway users increased warning.
- Brake early when slowing behind another vehicle, approaching an intersection, or coming to a stop.

FOG (continued)

Driving in Heavy Fog — Thick fog, and in some situations heavy smoke, produces very dangerous driving conditions. The heavier the fog the more restricted your field of vision will be. Visibility may be reduced to the point that driving safely is impossible.

Before entering heavy fog be prepared to:

- reduce speed but do not stop in a travel lane.
- turn on emergency flashers.
- look for an exit from the highway.
- leave the highway, or stop beyond the end of the guardrail, back up to the inside of the outboard of the guardrail, turn off all lights and wait for the fog to lift.



RAIN

A vehicle equipped with good tires, brakes and wipers can usually be driven safely in the rain. But drivers should not assume good equipment alone guarantees vehicle traction control. Heavy rains not only limit visibility, but may also flood roads, and overwhelm the ability of the tires to channel water.

Driving in Heavy Rain — will reduce your ability to see and be seen by other motorists.

Driving in heavy rain can be as hazardous as driving in fog, especially when the wind is blowing. Rain-spattered windows make it especially difficult to see other vehicles to the rear and in blind spot areas.



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RAIN (continued)

Drivers need to be alert and drive with caution:

- Keep the vehicle's windshield clear, use your wipers and put your defroster on high.
- Use your low beam headlights to see and be seen.
- Slow down to compensate for reduced visibility.
- Heavy rain or heavy fog may reduce your visibility to a level where it is unsafe to drive. So, pull off the road and sit out the storm in a safe location.



Be extra careful during the first half hour after rain begins. Grime and oil on the road surface will mix with water to make the road surface slippery.

Hydroplaning — One of the dangers of driving in heavy rain is the vehicle's tires may lose all contact with the road's surface. Water cannot be compressed, but most tires will "wipe" the roadway surface of up to a ¼ inch of water. If you are following other vehicles drive in the tire wipes of the vehicle in front of you to assist with traction on wet roads. However, as the vehicle speed increases, the tires cannot "wipe" the road as well, so drive at a speed that will prevent your vehicle from hydroplaning.

Hydroplaning is caused as tires push water ahead until, a tongue of water is formed in front of the contact area. Hydroplaning can start at speeds as low as 35 mph as tires begin to lift to a point where they are totally up riding on a layer of water.

If your vehicle begins to hydroplane:

- take your foot off the accelerator.
- don't brake and, if possible, avoid steering changes.
- hold the steering-wheel firmly until your tires grip the road again.



Thunderstorms

Thunderstorms are dangerous and should not be taken for granted as they bring a greater risk of flash floods, strong winds, hail and tornadoes. All thunderstorms produce **LIGHTNING**. Lightning is an extremely dangerous weather hazard, it is an abrupt electric expulsion which comes from cloud to cloud or from cloud to earth followed by an emission of light. Most lightning victims are people who are caught outdoors during a thunderstorm

Most **TORNADOES** form during supercell thunderstorms from an intensely rotating updraft. When a tornado reaches down out of a thundercloud it produces a huge, swirling rope of air, with wind speeds in the range of 200 to 300 mph. If the vortex touches ground, the speed of the whirling wind (as well as the updraft) causes tremendous damage, tearing homes apart and flinging potentially lethal debris in all directions.

Driving In A Thunderstorm Or Heavy Downpour

When it begins to rain a driver will notice that his/her visibility becomes reduced. The harder it rains, the more decreased their visibility will become and the more difficult it will be to judge distance. To manage time and space and minimize risk when driving in heavy rain you need to:

- Turn on the radio and tune into a weather report and stay informed.
- Turn on windshield wipers.
- Turn on your headlights (low beams) and slow down.
- Allow extra distance for braking.
- Turn on emergency flashers.
- Maintain lane position 1.
- Be alert for vehicles stopped in the roadway.
- Be prepared for effects of gusting or strong, steady crosswinds.
- Make steering, acceleration, and braking actions gently and smoothly.

CAUTION

Severe THUNDERSTORMS and TORNADOES can and do occur at any location, anytime of day or night, and anytime of year given the right atmospheric conditions.

If visibility becomes too low to drive safely, look for an exit from the highway. If it is impossible to leave the highway and visibility is forcing you to stop, pull safely onto the shoulder of the road away from any trees that could fall on the vehicle. Stay in your vehicle and turn on the emergency flashers until the heavy rains subside. Remember, an automobile provides better insulation against lightning than being in the open. Avoid contact with any metal conducting surfaces either inside your car or outside.

Hailstorms

A hailstorm is a form of solid precipitation that consists of irregular lumps of ice called "hailstones". A hailstone starts as a tiny ice crystal in a thundercloud. As the crystal falls through the cloud, it collides with water droplets that freeze around it. Updrafts continue to push the hailstone back up into the cloud, where it continues to grow. The more times the hailstone goes up and down, the larger it becomes. Finally when it gets too large for the updrafts, it falls to earth.

Hailstorms each year causes millions of dollars of damage to vehicles, homes, farm crops and other structure that are in its path. It is best not to drive in a hailstorm as driving compounds hail's impact with your vehicle possibly breaking the windshield or other vehicle windows putting you at risk of injury. If you are caught driving into a hailstorm stop driving as soon as possible and pull to a safe place. Stay inside the vehicle. Remember: Hailstones are dangerous they fall at fast speeds, and it can cause injury to you if caught in its path.



SNOW

Winter is the most difficult driving season, there are fewer hours of daylight and you will need to deal with adverse conditions such as snow and ice. Snow presents a special type of problem. Not only will it reduce your visibility, but it will also produce different levels of traction as you drive. When fresh snow falls, vehicle traction may be fairly good. But as traffic packs the snow, (especially at intersections) tire traction is reduced because roads become much more slippery. Temperatures may rise, and tire heat or hot exhaust may cause snow to melt and then freeze again creating dangerous icy road conditions.



Heavy Smoke, Rain, or Snow — Summary

Mother Nature can be very unpredictable ...

- Smoke is evident ahead — billows of smoke and ash from a large brush fire suddenly cover the roadway making it very difficult to see.
- It's sprinkling — a few moments later, rain falls in sheets, slashing across the roadway.
- Snow is falling in large, lazy flakes — Two miles down the road, there is a whiteout and visibility is reduced to inches.

Begin taking precautionary measures as soon as any of the initial conditions become evident. In most instances, brush fires are restricted to a limited area and torrential rains are of short duration. A snow storm-induced whiteout could cover a much greater area.

In all three bad weather situations:

- continue to reduce speed to limits imposed by visibility, but do not stop in the travel lane or on the shoulder.*
- turn headlights to low beam.
- turn on emergency flashers.
- maintain lane position 1.
- turn on windshield wipers.**
- be alert for vehicles stopped in the roadway.
- be prepared for effects of gusting or strong, steady crosswinds.
- make steering, acceleration, and braking actions gently and smoothly.

* For snow conditions, look for an exit from the highway, turn on the radio and tune into a weather report. When it is impossible to leave the highway, stop beyond the guardrail. If you have a cell phone and it is functioning, call and check on road conditions.

** Snow and smoke may require use of windshield washer fluid.

It is the Law:

Headlight use is required whenever windshield wipers are needed due to fog, rain, sleet, or snowy conditions.

Be careful, when driving at night there will be reduced visibility, it will be more difficult for you to identify icy patches when approaching bridges, shaded spots, overpasses and turns.