

# CHECKLIST AND TIPS FOR Safe Winter Driving

## Get your car serviced now.

No one wants to break down in any season, but especially not in cold or snowy winter weather. Start the season off right by ensuring your vehicle is in optimal condition.

Visit your mechanic for a tune-up and other routine maintenance.

- » Have your entire vehicle checked thoroughly for leaks, bad worn hoses, or other needed parts, repairs, and replacements.

## Check your battery.

When the temperature drops, so does battery power. For gasoline-powered engines, be aware that it takes more battery power to start your vehicle in cold weather than in warm. For electric and hybrid vehicles, the driving range is reduced and the battery systems work better after they warm up. Make sure your battery is up to the challenges of winter by:

- » Having your mechanic check your battery for sufficient voltage;
- » Having the charging system and belts inspected;
- » Replacing the battery or making system repairs, including simple things like tightening the battery cable connections;
- » Making sure to keep fresh gasoline in an electric vehicle, to support the gasoline system.

## Check your cooling system.

When coolant freezes it expands. This expansion can potentially damage your vehicle's engine block. Don't let this happen to your vehicle this winter. You should:

- » Make sure you have enough coolant in your vehicle and that it's designed to withstand the winter temperatures you might experience in your area.
- » See your vehicle owner's manual for specific recommendations on coolant. A 50/50 mix of coolant to water is sufficient for most regions of the country.
- » Thoroughly check the cooling system for leaks or have your mechanic do it for you.
- » Check to see if your system has been flushed (draining the system and replacing the coolant). If it hasn't been flushed for several years, have it done now. Over time, the rust inhibitors in antifreeze break down and become ineffective. Coolant also needs to be refreshed periodically to remove dirt and rust particles that can clog the cooling system and cause it to fail.



## Fill your windshield washer reservoir.

You can go through a lot of windshield wiper fluid fairly quickly in a single snowstorm, so be prepared for whatever Mother Nature might send your way.

- » Completely fill your vehicle's reservoir before the first snow hits.
- » Use high-quality, "no-freeze" fluid.
- » Buy extra to keep on hand in your vehicle.

## Check your windshield wipers and defrosters.

Safe winter driving depends on achieving and maintaining the best visibility possible.

- » Make sure your windshield wipers work and replace worn blades.
- » Consider installing heavy-duty winter wipers if you live in an area that gets a lot of snow and ice.
- » Check to see that your window defrosters (front and rear) work properly.

## Verify floor mat installation to prevent pedal interference.

Incorrect or improperly installed floor mats in your vehicle may interfere with the operation of the accelerator or brake pedal, increasing the risk of a crash. Remember these tips when installing new floor mats to ensure safe operation of your vehicle:

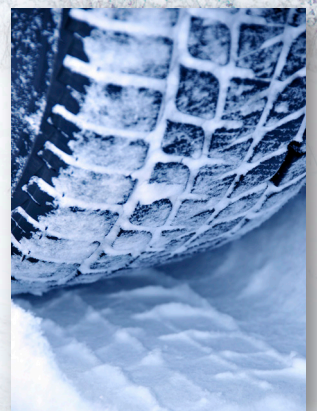
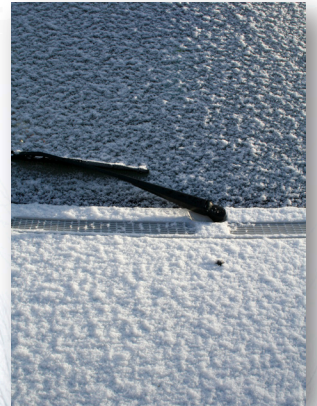
- » Remove old mats before the installation of new mats.
- » Never stack mats, as that may increase the potential for pedal interference.
- » Be sure to follow the manufacturer's instructions for mat installation and use the available retention clips to secure the mat in the proper position. This will prevent the mat from sliding forward.
- » Check that the mats are the correct size and fit for the vehicle and do not interfere with the full operation of the foot controls (accelerator, brake and clutch pedals). Whenever the interior of the vehicle is cleaned or the mats have been removed for any reason, verify that the driver mat has been reinstalled correctly.

## Inspect your tires.

If you plan to use snow tires, have them installed before the snow storms hit. Check out [www.safercar.gov](http://www.safercar.gov) for tire ratings before buying new ones. For existing tires, check to ensure they are properly inflated (as recommended by your vehicle manufacturer), the tread is sufficient with no uneven wear, and that the rubber is in good overall condition. Note that tire rubber starts to degrade after several years, and older tires need to be replaced even if they have not seen much wear.

Regardless of season, you should inspect your tires at least once a month and always before setting out on a long road trip. It only takes about five minutes. If you find yourself driving under less-than-optimal road conditions this winter, you'll be glad you took the time.

- » Check tire pressure and make sure each tire is filled to the vehicle manufacturer's recommended inflation pressure, which is listed in your owner's manual and on a placard located on the driver's side doorjamb (called the "B-pillar"). If a vehicle does not have a B-pillar, then the placard is placed



on the rear edge of the driver's door. Tire pressure drops as the temperature drops. Properly inflated tires ensure optimum tire performance and optimum vehicle driving range.

- » Keep a tire pressure gauge in your vehicle at all times and check pressure when tires are "cold" — meaning they haven't been driven on for at least three hours.
- » Look closely at your tread and replace tires that have uneven wear or insufficient tread. Tread should be at least 1/16 of an inch or greater on all tires.

## Check the age of your tires.

The structural integrity of tires can degrade over time and when that occurs tires are more prone to failure. The effects of aging may not be visibly detectable.

- » Check the age of your tires including your spare tire. Look for the tire identification number on the sidewall of the tire, which begins with the letters "DOT." The last four digits represent the week and year the tire was manufactured.
- » Check the owner's manual for specific recommendations for when to replace a tire. Some vehicle manufacturers recommend that tires be replaced every six years regardless of use.



## Know your car.

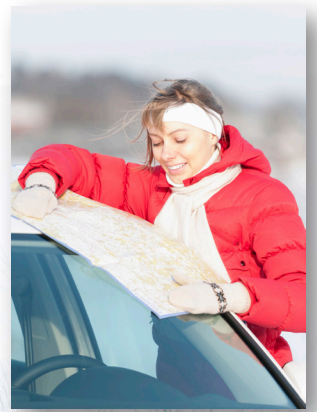
Every vehicle handles differently; this is particularly true when driving on wet, icy, or snowy roads. Take time now to learn how to best handle your vehicle under winter weather driving conditions.

- » For electric vehicles, several things can be done to minimize the drain on the batteries. If the vehicle has a thermal heating pack for the batteries, make sure your vehicle is plugged in whenever it is not in use. If the vehicle has a pre-heat function to warm the car interior, set it to warm the passenger compartment before you unplug it in the morning.
- » Practice cold weather driving when your area gets snow — but not on a main road. Until you've sharpened your winter weather driving skills and know how your vehicle handles in snowy conditions, it's best to practice in an empty parking lot in full daylight.
- » Drive slowly. It's harder to control or stop your vehicle on a slick or snow-covered surface. On the road, increase your following distance enough so that you'll have plenty of time to stop for vehicles ahead of you.
- » A word of caution about braking: Know what kind of brakes your vehicle has and how to use them properly. In general, if you have antilock brakes, apply firm, continuous pressure. If you don't have antilock brakes, pump the brakes gently.
- » Stay calm and ease your foot off the gas while carefully steering in the direction you want the front of your vehicle to go if you find yourself in a skid. Stay off the pedals (gas and brake) until you are able to maintain control of your vehicle. This procedure, known as "steering into the skid," will bring the back end of your car in line with the front.
- » When renting a car you should become familiar with the vehicle before driving it off the lot. For instance, you should know the location of the hazard lights in case of emergency. Take a minute to review the owner's manual in the rental car so that you are prepared.

## Plan your travel and route.

Keep yourself and others safe by planning ahead before you venture out into bad weather.

- » Check the weather, road conditions, and traffic; plan to leave early if necessary.
- » Don't rush! Allow plenty of time to get to your destination safely.
- » Familiarize yourself with directions and maps before you go, even if you use a GPS system, and let others know your route and anticipated arrival time.
- » Keep your gas tank close to full, even with an electric vehicle. If you get stuck in a traffic jam or in snow, you might need more fuel to get home or keep warm. Note: To avoid carbon monoxide poisoning when stuck in snow, be sure to keep your vehicle's exhaust pipe clear of snow and ice, run your vehicle only in the open with the windows partially down, and run it only long enough to keep warm.
- » Wait until road and weather conditions improve before venturing out in your vehicle. If road conditions are hazardous, avoid driving if possible.



## Stock your vehicle.

Carry items in your vehicle to handle common winter driving tasks, such as cleaning off your windshield, as well as any supplies you might need in an emergency. Keep the following on hand:

- » Snow shovel, broom, and ice scraper;
- » Abrasive material such as sand or kitty litter, in case your vehicle gets stuck in the snow;
- » Jumper cables, flashlight, and warning devices such as flares and markers;
- » Blankets for protection from the cold;
- » And a cell phone with charger, water, food, and any necessary medicine (for longer trips or when driving in lightly populated areas).

## Learn what to do in a winter emergency.

If you are stopped or stalled in wintry weather, follow these safety rules:

- » Stay with your car and don't overexert yourself
- » Put bright markers on the antenna or windows and keep the interior dome light turned on;
- » To avoid asphyxiation from carbon monoxide poisoning, don't run your car for long periods of time with the windows up or in an enclosed space. If you must run your vehicle, clear the exhaust pipe of any snow and run it only sporadically — just long enough to stay warm.



## Protect yourself and your loved ones.

- » Remember to always wear your seat belt. Ensure that everyone in your vehicle is buckled up as well.
- » Do not text or engage in any other activities that may distract you while driving.
- » While thick outerwear will keep your children warm, it can also interfere with the proper harness fit of your child in their car seat. Place blankets around your child after the harness is snug and secure.
- » Never leave your child unattended in or around your vehicle.