



Safe Winter Driving

Winter driving can be dangerous to those who are not prepared in advance. This Client Handout details the preparations that should be taken before and during a winter trip.

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. Have your vehicle checked thoroughly for needed repairs, stock your vehicle with supplies, and plan for travel disruption.

Battery Concerns

Temperature changes can dramatically alter battery life and dependability. As the temperature drops, so does battery power. In the case of gasoline- and diesel-powered engines, because of the increased viscosity of lubricants and decreased combustibility of some fuels at lower temperatures, it normally takes more power to start a vehicle in cold weather.

For electric and hybrid vehicles, the driving range is reduced when batteries are cold. However, as the battery compartment warms up, some of the system power will return. Make sure your battery is up to the challenges of winter:

- Have your mechanic check your battery for sufficient voltage and have it replaced, if necessary;
- Have the charging system and belts inspected and serviced, including simple things like tightening the battery cable connections;
- To minimize the drain on the batteries for electric vehicles, several things can be done. 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 preheat function to warm the car interior, set it to warm the passenger compartment before you unplug it.

Cooling System Concerns

When coolant freezes, it expands and the expansion can potentially damage the vehicle's engine block. You should:

- Make sure you have enough coolant in your vehicle and that it is 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.
- If your coolant system has not been flushed (draining the system and replacing the coolant) for several years, it should be done. 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.

Tire Concerns

Regardless of season, you should inspect your tires at least once a month and always before setting out on a long road trip. You should:

- Keep a tire gauge in your vehicle, check tire pressure when tires are cold (i.e., they haven't been driven on for at least three hours), 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.

- Check your tire tread depth (it should be at least 1/16 of an inch (1.6 mm) on all tires) and wear patterns. Replace tires that have uneven wear or insufficient tread. Also, make sure you are using a tire appropriate for the winter driving conditions you may encounter. If the winter season means sleet-, slush-, and snow-covered roads in your area or your destination, consider replacing tires when they reach approximately 5/32 in (4 mm)) of remaining tread depth. If you regularly encounter severe winter driving conditions, you may consider a dedicated winter/snow tire for optimum traction

Visibility Concerns

Safe winter driving depends on your achieving and maintaining the best visibility possible. You should:

- Make sure your windshield wipers and defrosters are working properly. Replace worn windshield wipers, and consider installing heavy-duty winter wipers if you live in an area that gets a lot of snow and ice.
- Refill the windshield washer reservoir as needed with high-quality, "no-freeze" washer fluid. You can go through a lot of windshield wiper fluid quickly in a single snowstorm, so it is good to carry additional windshield wiper fluid in the vehicle.

Vehicle Operation

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

- Practice cold weather driving when your area gets snow — but not on a main road. Until you have sharpened your winter weather driving skills and know how your vehicle handles in snowy conditions, it is best to practice in an empty parking lot in full daylight.
- Drive slowly. It is 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 will have plenty of time to stop for vehicles ahead of you.
- Learn the correct braking technique for your vehicle. In general, if you have antilock brakes, apply firm, continuous pressure. If you do not have antilock brakes, pump the brakes gently. Should the vehicle lose traction and start to skid, stay calm, and ease your foot off the gas while carefully steering in the direction you want the front of your vehicle to go. Stay off the gas and brake pedals 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 and operation of all controls (e.g., lights, hazard flashers, windshield wipers, etc.) If necessary, take a minute to review the owner's manual in the rental car so that you are prepared.

Travel Plans

Keep yourself and others safe by planning before you venture out into bad weather. Check the weather, road conditions, and traffic; plan to leave early if necessary. Do not rush! Allow plenty of time to get to your destination safely. You should also:

- Familiarize yourself with directions and maps, and program global positioning systems (GPS) before you leave and let others know your route and anticipated arrival time.
- If road conditions are hazardous, avoid driving if possible or wait until road and weather conditions improve before starting your trip.
- Keep your gas tank close to full, even with an electric vehicle. If you are stuck in a traffic jam or in snow, you might need more fuel than usual to get to your destination or keep warm.

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:

- A snow shovel, broom, and ice scraper;
- Abrasive material, such as sand or kitty litter, in case your vehicle gets stuck on ice or in snow;
- Jumper cables, flashlight, and warning devices, such as reflective triangles;
- Blankets or sleeping bags 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).

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.

Should you get stuck in snow, avoid carbon monoxide poisoning by keeping your vehicle's exhaust pipe clear of snow and ice, running your vehicle only in the open with the windows partially down, and running it only long enough to keep warm. Use extreme caution when venturing out of your vehicle

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CH-10-54 2/28/13

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