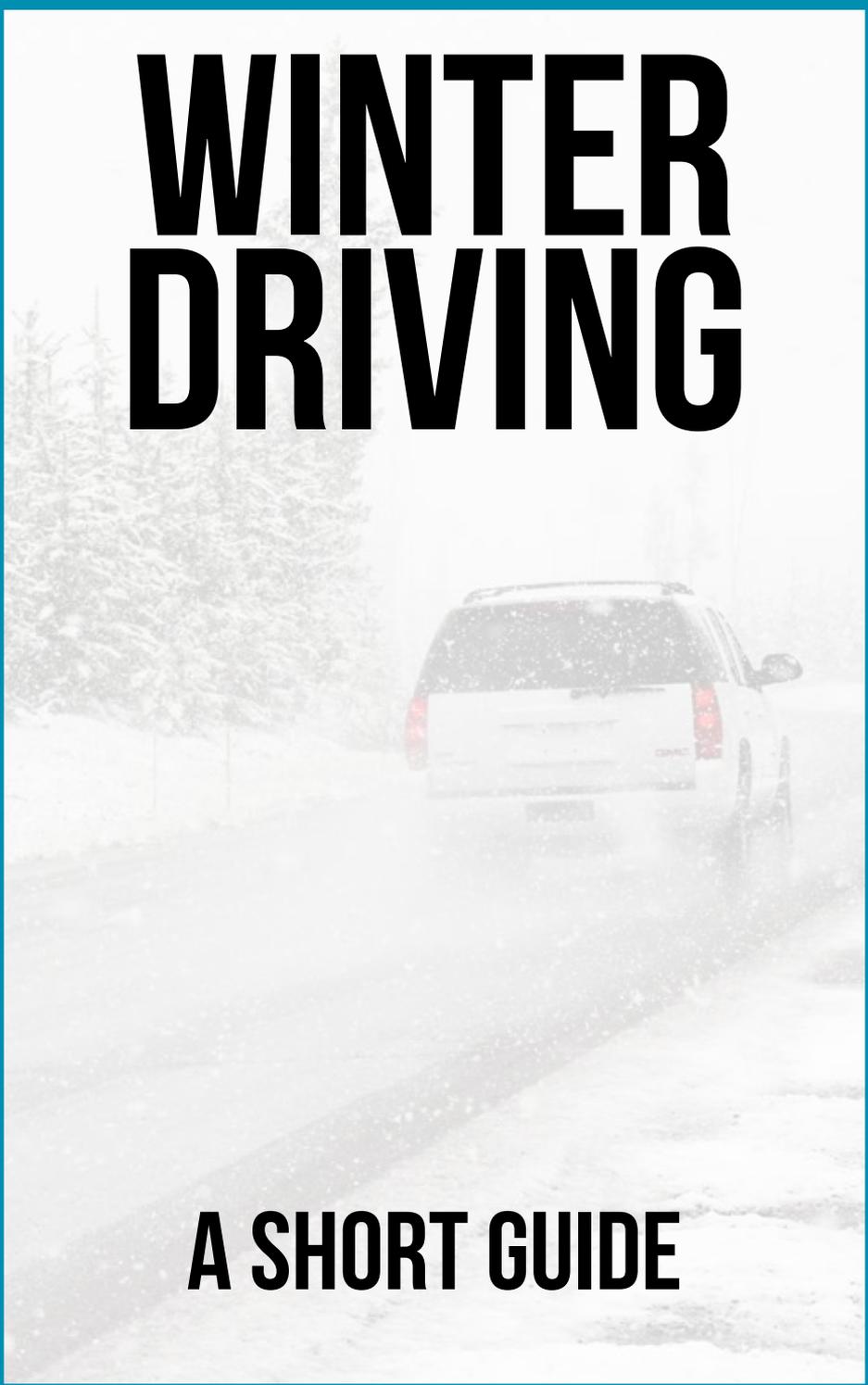


WINTER DRIVING

A white SUV is driving away on a snowy road during a heavy snowfall. The car is in the center-right of the frame, moving away from the viewer. The road is covered in snow, and there are snow-covered trees and a fence in the background. The overall scene is hazy due to the falling snow.

A SHORT GUIDE

PREPARING FOR WINTER

There are several key elements to preparing for driving in winter weather conditions.

- Keep your car in good working condition so that it won't break down and leave you stranded in dangerous conditions.
 - Make sure your car battery is in good condition - it takes more power to start a car in cold weather.
 - Make sure that the fluids (coolant & windshield wiper fluid) are designed for cold weather - they should have antifreeze or de-icer to prevent freezing.
 - Make sure that your windshield wipers work well and can handle snow, which is heavier than rain.
 - Make sure your window defrosters work properly and that you know when and how to use them.
 - Check your tire pressure periodically as cold weather decreases tire inflation. This includes your spare tire.
 - Make sure you have the tools & knowledge to change a tire if necessary - spare tire, tire gauge, jack, lug wrench, etc.
- Check that your tires are appropriate for winter driving
 - Snow tires are the best option as they are specifically designed to provide traction in the snow.
 - Your tires should be checked to ensure that they are not worn and that the tread is still deep enough to provide traction in the snow (a minimum of 2/32 inch)

ALL-SEASON TIRES

Normal Traction designed for normal conditions

Tread compound stiffens in cold temperatures

Made for dry and wet conditions



SNOW TIRES

Traction optimized with deeper grooves and sharp, irregular edges

Tread compound remains flexible in cold temperatures

Designed to grip snow, slush, and ice



- Know your car - take note of how it handles in various road conditions.
 - Does your car have ABS braking?
 - Is your car front wheel drive, rear wheel drive, or all wheel drive?
 - Does your car have traction control, and can you turn it off?
- Keep your gas tank as close to full as possible in case you get stuck in traffic or stranded and need to keep the car running for longer than expected.
- Stock your car with tools to clean the snow and ice off of your car and supplies to help you survive in the case of an emergency
 - Brush, Ice Scraper, and a small or collapsible shovel
 - Sand/Litter that you can throw under the tires to help with traction if you get stuck.
 - Jumper cables, flashlights, batteries, and warning devices such as flares or emergency markers.
 - Blankets or extra coats - thermal blankets pack up small - and gloves.
 - Water and food (such as granola bars and non-perishable snacks) in case you're stranded for several hours.
 - Basic First Aid Kit
 - Keep your cell phone well charged in case you are stranded and need to call for help.
 - Other items that you could consider include: battery operated weather radio, hand warmers, small fire extinguisher, duct tape, spare change/cash, paper maps, tow strap, winter boots, glow sticks



A car emergency kit can help keep you safe in bad weather.

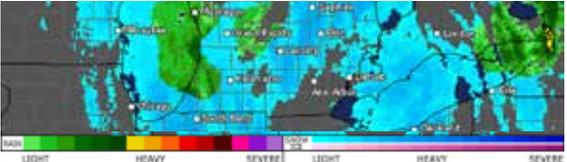
BEFORE YOU GO

Once the winter weather arrives, there are several things you should do before getting in your car and driving away.

- Always check the weather, road conditions, and traffic before leaving. If you are not comfortable driving in the current conditions, the weather is hazardous, or the police has issued a travel warning or ban, DO NOT GO OUT. Your safety is more important than getting to work or school.
 - Know that Andrews is in an area that gets lake effect snow. This means that snow storms can happen suddenly and unpredictably. Checking the weather only gives you a general idea of what to expect. Always check out the window at what you can see.
 - Snow can even cause problems on bright sunny days - the snow is an excellent reflector causing light to come not only from above but also from below. Make sure you have a pair of sunglasses in your car to help with glare.
- Make sure that you are comfortable and know how your car handles before driving on main roads or around other traffic.
 - If possible, practice stopping, starting, and turning in an empty parking lot or an empty back road so that you know how winter conditions effect the car's handling.
- Clean snow, ice, and dirt from as much as the car as possible including:
 - All windows
 - Headlights, tail lights, and any sensors (reverse or proximity sensor etc.
 - The car's roof & hood, - snow on the roof can slide down over the windshield while snow on the hood can blow up into the windshield and block your view while driving. Snow can also blow off your car and impede the visibility of the other drivers around you.
- Know where you are going and multiple routes you can take to get there as your normal route may be blocked and you will need to divert.
- Leave earlier to allow time to drive safely while still arriving on-time.
- Let others know where you are going, your planned route, and your anticipated arrival time, so that they help find you if something goes wrong.
- If you have a child in a child seat, remove thick winter outerwear before fastening their restraints - thick clothing can interfere with the restraints, causing them to malfunction or work incorrectly. You can place blankets or coats on or around the child after the restraints have been fastened.



Mi Drive is a great resource for checking road conditions and closures. Go to: www.michigan.gov/drive



Weather radar can help to give you a picture of what weather may be coming, and how heavy the precipitation may be.



Driving a car that has not been properly cleaned is hazardous to you and the drivers around you.



Low visibility makes it harder to see hazards or vehicles. Not going out is the best and safest option in bad weather.



Heavy winter clothing can cause the safety restraints to malfunction in a child seat. Instead, dress the child in regular weight clothing, and place coats or blankets over the child after the restraints have been fastened. This also allows the child to push the blankets/coat off when the car warms up.



DRIVING

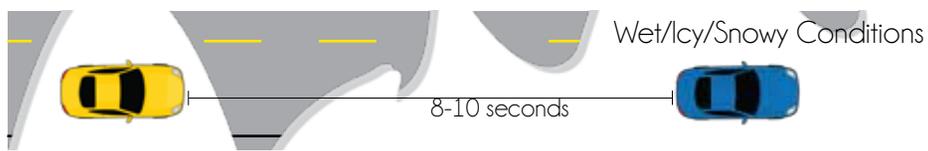
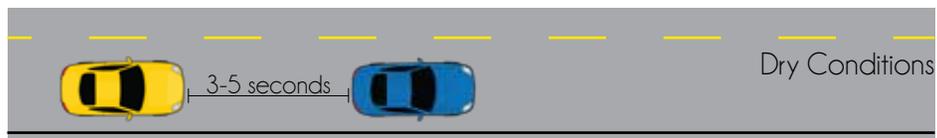
Driving in winter conditions is more hazardous than clear weather. Here are some tips to help you drive safely

- Drive with your lights on to increase your visibility to other drivers.
 - Always make sure that you headlights, brake lights, flashers, and turn signals are working properly - including on any trailers.
- Drive slowly - without being a hazard to other vehicles.
- If you come across a deer in the road, know how to respond. Deer are most common around October and April.
 - Keep in mind that there are probably more deer around. Drive slowly and carefully until you have completely passed the area.
 - DO NOT SWERVE. This can cause you to slide, your car to roll, or a head-on collision with oncoming traffic.
 - Slow your car as much as possible without locking your tires.
 - You may not be able to avoid hitting the deer, however the slower you are traveling, the better your outcome.
- Increase the space between you and the vehicle in front of you. You will need the extra space if you have to stop. It can take up to 10 times longer to stop on a slippery road, and accidents can happen quickly.
- Know if your car has an anti-lock braking system (ABS), how it works, and how to use it. If it does, apply steady continuous pressure to the brake pedal when slowing down. If it does not, you may need to pump the breaks if your tires lock.



If your car has traction control, and this light flashes, or comes on, your tires have slid and traction control has been engaged to control the slide. However, do not rely on traction control, know what to do.

In slippery conditions it takes much longer to stop and so following distance should be increased from 3-5 seconds (or 3 car lengths) on dry pavement to 8-10 seconds when driving on wet, icy, or snowy pavement.



- Avoid any sudden changes in speed or direction - everything takes longer in the winter. Accelerate, brake, and turn slowly to avoid sliding.
- When passing other vehicles, remember that they also cannot stop or slow suddenly. Leave plenty of room in front of a vehicle before moving into their lane. Also remember that the bigger the vehicle, the longer it will take to stop.
- Snow plows and salting trucks are a constant in winter weather. Know how to drive around these vehicles. Remember that they often drive slower, make wide turns, drive in groups, or drive down the middle of two lanes.
 - While the road behind a snow plow is often the cleanest, and sometimes the safest place, do not crowd the truck. If you cannot see their mirrors, they cannot see you. They may also throw up debris or chunks of snow from the plow that could damage your vehicle.
 - Never drive in, through, or close to the cloud of snow thrown up by a snow plow - it can reduce your visibility to zero in less time than you can react.
 - Do not cut off or block the path of the snow plow - they are often heavy vehicles that cannot stop in the same amount of space as a regular car.



Snow plows often drive in varying parts of a lane. Allow lots of space between your vehicle and a plow truck as they often make wide turns, drive slower, or drive in the middle of two lanes.

WHEN SOMETHING

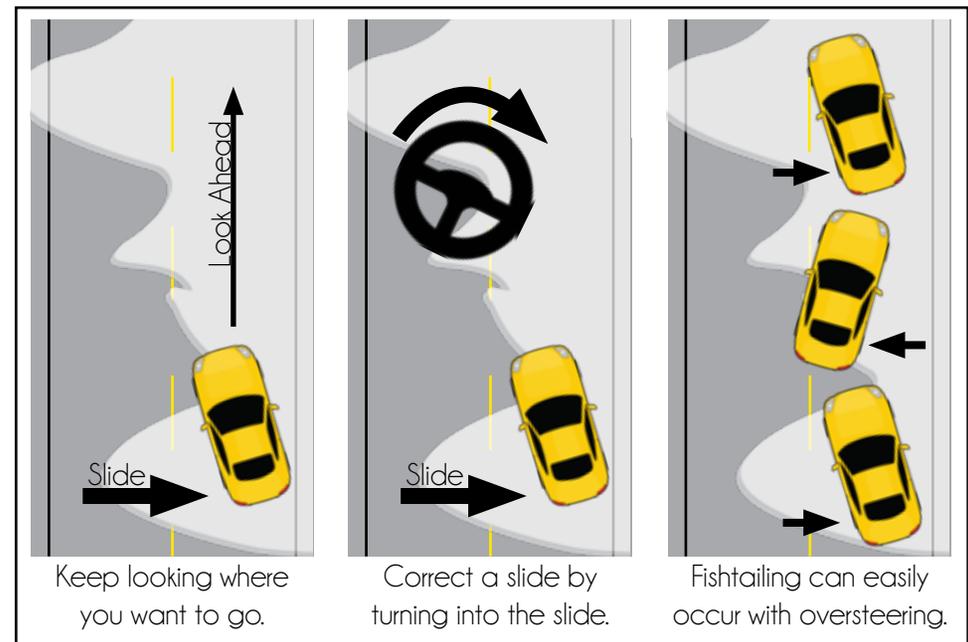
We hope it never happens, but chances are that it will.

- If you are stuck in traffic or stranded in cold or wintry weather:
 - Stay with your car & don't overexert yourself
 - As far as possible, put bright markers on the antenna or windows and keep the interior light on - this will help other vehicles or rescuers to see you and help prevent vehicles from crashing into you.
 - Conserve gas by running the engine only as necessary to stay warm.
 - Make sure that the exhaust pipe is cleared of ice, snow, and debris to avoid asphyxiation.
 - Do not run the vehicle in an enclosed space.
- If you do wreck:
 - If your car is still drivable, pull off at a safe place well off the road. Encourage any other vehicles involved to do the same.
 - If you cannot move your vehicle, and there are cars still approaching or passing, stay in your vehicle. You have a better chance of surviving if you get hit while still in your vehicle than if you get hit standing on the roadway.
 - When or if there is not traffic approaching, and if possible (i.e. you aren't trapped on a bridge), get out and walk carefully as far off the roadway as possible, making sure to avoid any areas where other vehicles may slide.
 - Call 911 to report your accident, and wait for the authorities to arrive.
- If you see a wreck:
 - Do not try to stop and help, your stopped car may become a hazard to other drivers. When safe, use your phone to call 911 and report the accident. Authorities will know how to safely stop or redirect traffic.
- If you get stuck in snow
 - "Rock" the car by going forward a little, then reverse a little, then forward again. Keep repeating the process. Each time you change directions, you should move a little bit farther helping to tramp down loose snow and hopefully give you enough traction to drive out. You may need to use the shovel from your emergency kit to clear some of the snow from around the tires before this will work.
 - If there are other people around, ask them to push while you lightly apply some pressure on the accelerator.
 - You can add traction around your tires by sprinkling sand or kitty litter in front and behind the drive tires (front for front wheel drives etc.)

GOES WRONG

Know what to do when something goes wrong.

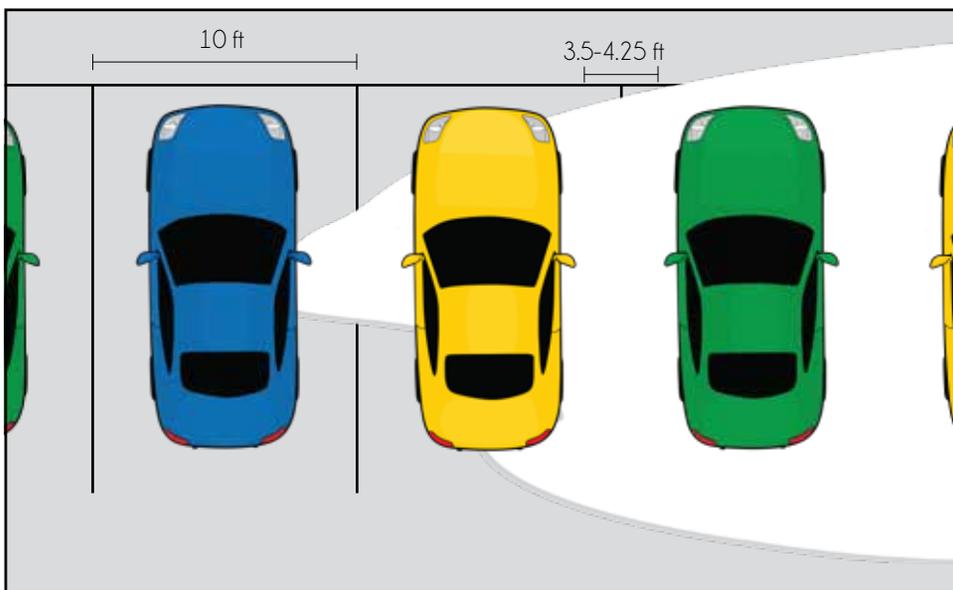
- Wet roads, ice, and, snow all reduce your car's traction, making it more likely that your car will slide. Avoid a slide by driving slower. If you do slide, there are some steps that you can take to correct a slide:
 - First and foremost, do not panic and **DO NOT SLAM ON THE BRAKES**
 - Let off the gas pedal. This will slow the car down without locking the wheels and making the slide worse.
 - Keep your eyes focused on where you want the car to go
 - Slowly and evenly turn the steering wheel in the same direction that the back of the vehicle is sliding - often called "turning into the slide".
 - Turn the wheel proportionally to how far and fast the back of the car is sliding - the bigger the slide, the more you will need to turn the wheel.
 - Know that in correcting a slide, the car may start to slide in the other direction - this is called fishtailing. Calmly repeat your actions in the other direction. This may happen several times before the car regains traction.
 - Oversteering - turning the wheel too much or too fast - can cause the car to fishtail dramatically or go into a full spin, so be sure to make your movements calmly and deliberately.



PARKING

While you may not think it, snow can present parking challenges.

- When there isn't snow, take note of the parking patterns where you normally park. Are the spots perpendicular, angled, or parallel parking? If the lot gets covered with snow, you may not be able to see the lines, even if it has been plowed. Knowing the parking pattern helps you to know how to park safely.
- If you cannot see the lines you can guesstimate here the spots should be if you keep in mind the common parking dimensions.
 - In the U.S., most parking spots range from 8 to 10 feet. At Andrews, 10 feet is the standard.
 - Most vehicles average between 5.75 and 6.5 feet wide. This means that there should be 3.5-4.25 feet between you and the car you park next to. Leaving too much space between vehicles can significantly lessen the number of cars that can fit in a parking lot.
 - Try to keep your car out of the aisle by keeping your car perpendicular to the center line (you should be parked in line with the other vehicles).
 - In the case of parallel parking, park as close to the curb as you can, leaving enough space between you and the car in front of you that you can get your car out, without leaving so much space that you end up taking up two cars worth of spots.



DANGER ZONES

Some areas are more prone to ice and hazards than others.

Knowing where to look for these hazards will help you to prepare.

- **Bridges, Overpasses, & Elevated Roadways** can collect snow and ice long before the rest of the roadways and often catch drivers by surprise.
- **Steep hills** can cause hazards as the friction between the tires and the road is not strong enough to overcome the gravity pulling the car down the hill. As far as possible, you should not stop or slow when encountering a steep hill as more friction is required to start or speed up than is required to keep moving.
- **Highways & Freeways** provide dangers as sliding and losing control is much easier at higher speeds. This can also cause accidents to quickly become bigger cars behind cannot stop in time and become part of the accident.
- **Changes in speed or direction**, such as accelerating away from a stop sign, stopping for a stoplight, or turning a corner can cause a car to slide or wheels to spin leading to the loss of control. Drivers should anticipate any changes to speed or direction and approach them slower than usual.
- **Low-traffic roads** can present hazards as they often have a buildup of snow and ice causing more possibilities of sliding or becoming stuck.
- **Tunnels** can often be damp and cold causing ice that may be hard to see. Whether can also differ from one side of the tunnel to the other which may surprise drivers who exit a tunnel and encounter a road that is suddenly covered in snow and ice.
- **Groundwater and runoff**, such as rain, melted snow, and streams can cause sheets of ice when temperatures drop.
- **Cobblestones and brick** can ice up as fast as bridges and overpasses due to the gaps in the surface that allow cold and ice to infiltrate downwards.
- Even in below-freezing temperatures, **sunshine** can cause snow or ice to melt, leaving a layer of water on top of the ice and snow that makes the roadway even more slippery than before. In addition, **drops in temperatures** after a bright sun or above-freezing temperatures can cause snow and ice melt to refreeze making large sheets of ice that are much more slippery and hazardous.

SOURCES

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