

# North Dakota

# Winter



# Survival Guide

By the Staff of the **Minot Air Force Base Library**

*Supporting the Air Force mission, education for all ages, and quality of life through information, resources, services, and programs*

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## Quick Winter Tips

- Whatever the weather is like, it will not be like this all winter long. North Dakota winters have a lot of variety, and every year is different.
- The most important thing you can do to have a safer winter is to pay attention! Keep an eye on the weather, the road conditions, and other vehicles on the road.
- Dressing for the conditions is the best way to avoid winter maladies like frostbite and hypothermia, but don't pull out your warmest winter coat before it really gets cold. You will better acclimatize to the cold if you delay swapping your light jacket for your winter coat as long as you can. When should you put on your winter protection? It depends on how long you spend outside, how much wind chill there is, and whether or not you have arthritis, diabetes, or another condition that makes you more sensitive to the cold. Watch what the locals are wearing.

## Preparing for Winter

### **Preparing Yourself:**

**Winter Clothing:** The basics are coat, gloves, hat, and scarf. If you expect to shovel snow (or play in it) or work outdoors, you will also need boots and snow pants. Multiple pairs of pants (particularly with an outer layer of a water-resistant material) make a good substitute for snow pants. Layers are the key to warmth. If you don't want to wear your boots all the time, put them in your car or carry shoes in a grocery bag for inside use. When buying boots, wear your thick winter socks when you try them on or choose a size with thick socks in mind.

**Dealing with the Lack of Humidity:** You may find that your hands and lips are generally dryer and more in need of moisture than in the

summer. If the lack of humidity makes you uncomfortable, you can apply cuticle oil to your nails and do a hot oil treatment for your hair twice a week. If your hands get very dry, put lotion on them after every hand washing. For dry or cracked lips, use lip balm frequently. Drink lots of water to keep hydrated.

**Coming In From the Cold:** If you are going to be inside for longer than 15 minutes, you should remove your winter outerwear to avoid overheating. This is especially important for babies and children (yes, it is a pain to get them all bundled up again, but it is necessary for their health). If you have to wash your hands or take a shower right after coming in from the cold, you should use warm water, not hot. If you warm your skin up too fast, it will feel like you are burning!

**Preparing Your Car:** Take your car to a service center and ask about winterization. Exactly what your car needs varies a lot by vehicle, especially vehicle age.

**Tires:** You need to have at least 6/32 in. of tread on your tires to handle snow.

**Car New to ND?** Make sure your battery and anti-freeze are winter hardy. Batteries installed in the south often freeze in ND.

**Block Heater?:** A block heater keeps your oil-pan from freezing. Do you need one? You should install a block heater if your car is more than 20 years old, you often park your car outside overnight or for longer than 8 hours, and/or you have outlets for block heaters at work and can't go out to start your car in the middle of your shift.

When should you use your block heater? If the temperature is about -10 or below or you notice that the car is having trouble starting (some cars need it at higher or lower temperatures).

**Snow Tires:** Snow tires are allowed in North Dakota from 15 Oct to 15 Apr. Usually only rear-wheel-drive vehicles need them.

**Winter Supplies:** Stock your car with an ice scraper (preferably the kind with a long handle and a brush) and some winter survival gear. If you don't have a kit, at least have blankets and a shovel. You may want to keep some hard candy and non-perishable snacks like granola bars for emergencies in the car. A bag of kitty litter or sand would also be a good item to pack as you can use it to improve traction when your car is stuck (see "Getting Un-Stuck" under "Winter Driving 101.") If it is warm enough that you don't need to wear your cold weather gear and you plan to drive on the highway, pack it in your car so that you have it in case of a sudden change in conditions.

### **More Tips about Cars and Winter:**

- Try to keep at least a half a tank of gas in your car in the winter and **NEVER** let it get below a quarter of a tank. The more gas in your tank, the less likely the gas lines are to freeze, and the longer you can survive if you get stuck far away from help. You'll also need the extra gas if conditions unexpectedly turn bad and you have to drive very slowly, take long detours, or you get stuck.
- Warming up your car: if you can, start your car and let it run for about 5-10 minutes whenever it has been outside for four hours or more and the temperature is below -10. You may have to do it more frequently or at warmer temperatures if your car is particularly old or fussy or if the engine sounds weird and sluggish when you start it. Never let it warm up inside a garage (carbon monoxide hazard) or for more than 15 minutes. Don't leave it running while you go inside unless it is having trouble starting. Don't warm up your car at all if the temperature is

above freezing. If you can't warm your car up, drive it in a low gear (1, 2, L, S) until the cold engine light turns off or you enter a highway.

- If your car gets covered with snow while parked outside, remove as much snow as you can before driving it as otherwise the snow will fly up, hit your front or rear windshield, and obscure your vision. Be especially sure to clean off your windows, mirrors, lights, and license plate.
- If you don't use gas that contains ethanol, you can put an additive called "HEET" in your gas tank (you can get it at most gas stations). It is mainly alcohol and helps keep your gas lines from freezing. This is particularly recommended if your car is more than 25 years old and the temperature is -20 or below.
- Beware de-icing fluids as they can in fact freeze if it gets cold enough. Lock de-icer is a good purchase, but you shouldn't keep it in your car where it might freeze, and you can't get to it to use it!
- Don't leave electronics in your car when it is very cold out. If you do, you may find that they don't work after too many hours in the cold. While your devices will usually start working again after they have been in a warm place for a while, the experience is bad for your batteries.
- If you don't have a heated garage, try to avoid getting a car wash when it is below freezing. If you do get a car wash (even if you have the heated garage), dry the hinge and inside of your doors with a towel as soon as possible. If your door does freeze shut, hitting it with your rear (not so hard that you hurt yourself) may shake it loose.

## **Preparing Your Home:**

**Stock:** Make sure you have 3 day supply of food for three meals a day (you don't need to buy lots of canned goods, just make sure you always go shopping before you are almost out), shovels, and pavement salt (ice

melt). A snow-blower is a big help, but sometimes the snow is too heavy or deep for even the best of snow-blowers.

**Winterize:** Clean out your gutters, disconnect your garden hose, locate your main water shutoff valve (so you can turn it off if a pipe freezes and breaks), change your furnace filter, and check your weather stripping.

### Your Home in Winter

If your heating goes out, call someone to look at it right away. You don't want to wait until your pipes freeze and the problem becomes bigger, messier, and more expensive. While you are waiting for service, you could wash and dry some sheets or towels in hot water to help keep the pipes from freezing. If necessary, you can set your oven to self-clean (you aren't supposed to turn it on and leave the door open) or bake something and leave the oven door open a crack **AFTER** you turn it off.

Never turn your heating off, even if you will be out-of-town. No heat can lead to frozen and then burst pipes, and you don't want to come home to a horrible and expensive mess.

Make sure all roof vents stay clear and install a carbon monoxide detector.

If the shelf of snow on your peaked roof is too large, you can knock it down before it falls and hits someone, but don't knock your gutter.

If you want to save on your energy bill or have poor insulation, you can make your home warmer by: hanging drapes (or blankets) on your windows at night, moving the furniture you don't inhabit (bookcases, cabinets, etc.) to line the exterior walls and the furniture you do inhabit (beds and chairs) nearer to the inside walls, and hanging things on your exterior walls (pictures, blankets, even posters are better than nothing).



If you have poor insulation or an attic that leaks air, you might end up with a build-up of ice on your roof and icicles hanging from your gutter.

There are a number of commercial solutions to this problem (snow rakes, heated wires, heat tape, professionals, etc.) Beware just trying to knock it off with a shovel as this may damage your shingles and gutters.

Shovel or snow-blow first, use ice-melt second. Ice-melt works best on patches of thin ice that sometimes coat the pavement.

### **Snow! Snow! Snow! (and Ice! and Cold!)**

**Do the North Dakota Stomp!** In order to avoid tracking snow and ice melt all over your house and other buildings, do the North Dakota Stomp on the floor mat every time you go inside! Stomp and wipe your feet to remove snow (and ice melt) from both the tops and bottoms of your shoes or boots.

**Walking on Ice:** Most broken bones happen when people slip and then hit a dry patch which stops their foot (or feet) while their body keeps on going. Don't wear high heels outside. Wear boots and carry your heels in a grocery bag to put on after you get inside.

- Be especially careful if you are carrying anything that might affect your balance.
- Bend your knees a little bit or at least keep them loose.
- Keep your feet a little apart and your toes pointed out for better balance (walk like a duck).
- If the ice is very slick, it may be best to walk on the snow.
- There are two basic methods for walking on ice:

- Drag or shuffle your feet; this can almost be like skating, but you have to be careful not to hit a dry patch.
- Put a foot down completely level and then move your weight to that foot. Then do the same with the other foot, and so on. The key is that you put your weight on your whole foot, not just the toe or heel.

### **Playing in the Snow:**

- When is it OK for kids to play outside in the winter? If they are dressed appropriately (see “Preparing Yourself” above), it is OK for kids to play outside unless there is a severe cold or wind chill advisory. Most kids will let you know if they are cold enough to want to come inside. Minot Public Schools has outdoor recess unless the temperature is below -5 degrees Fahrenheit or the wind chill factor is below -15 degrees Fahrenheit. This is a good and safe, but conservative, rule.
- Adults can play in the snow too!
- Sledding is a great family activity, but be careful not to trespass, sled into anything (like a barbed wire fence or a street), or sled over anything such as a bump that may launch the sled dangerously high into the air or a buried fire hydrant (one of the reasons fire hydrants in Minot and on base have poles attached to them). Remember that you can always roll off the sled if you are headed for a hazard and then retrieve it later.
- How worried should you be about kids who like to eat snow? Not very; it is almost always harmless. It might be easier to teach them to eat only freshly-fallen clean white snow (not yellow snow) than to stop them.

**Frostbite, Frostnip and Hypothermia:** While you shouldn't be afraid of being outside in the winter, you do need to take proper precautions. If you dress appropriately for the conditions (including good gloves), only go outside for short periods if there is extreme wind chill, and go inside

as needed in order to warm-up, you should be able to avoid frostbite, frostnip, and hypothermia.

Frostbite and Frostnip are when your skin freezes (frostnip is the milder form). You can often feel it start to happen: the skin gets numb or tingly. When you feel it, go inside. You can see frostbite on other people: their skin looks very pale and often waxy.

If you get mild frostbite, or frostnip, you can treat it yourself by soaking the affected area in warm (not hot!) water for 15-30 minutes. The ideal water temperature is between 99 and 108 degrees Fahrenheit. Your skin will feel tingly and painful as it warms.

You shouldn't rub frostbitten areas, walk on frostbitten feet (if avoidable) or otherwise further injure the affected area. If the frostbite is not mild, seek medical attention. If it is severe, there may be pain and blistering.

Hypothermia is when your body temperature gets too low and is usually caused by being outside too long or getting wet. Symptoms include constant shivering (though someone whose hypothermia is severe actually stops shivering), slurred speech, clumsiness, confusion, drowsiness, slow and shallow breathing, and a weak pulse. Someone with hypothermia should be brought inside immediately (if possible), dried (if wet), and covered in dry clothing and blankets. Don't give them a hot bath or shower! They need to warm up slowly, or their heart might stop due to the shock! Seek medical assistance. Also, consuming alcohol doesn't warm; it actually makes it harder for someone to warm up.

## Winter Driving 101

**Headlights:** If the snow is blowing, your head and tail lights should be glowing! This helps other drivers see you. Use your lights whenever

visibility isn't ideal. If your headlights are set to turn on automatically, make sure the auto-function is also turning on your tail lights.

## **Drive Trains (RWD, FWD, 4WD, and AWD) and Winter Driving**

- 4-Wheel-Drive (4WD) and All-Wheel-Drive (AWD) are great for keeping you from getting stuck in the snow, but they aren't much of a help in icy conditions. They help you get going but don't help you stop. Remember to increase your following distance and stopping time no matter what kind of vehicle you drive. You might notice that most of the vehicles in the ditch on Hwy 83 are 4WD and AWD vehicles that ended up there thanks to overconfident drivers, and even 4WD and AWD vehicles need a tow truck if they are stuck in too much snow.
- Don't let what you've read about the different drive trains and different steering directions for recovering from skids confuse or upset you. When you are actually skidding, you steer in the direction that you logically have to in order to keep from hitting anything (hopefully), no wheel direction memory required (more skid recovery information on the next page). Front-wheel-drive (FWD) is much better on snow than Rear-wheel-drive (RWD), but the skids are less predictable and harder to control. RWD is a nightmare on snow, but the skids are easier for experienced drivers to predict and control. Snow tires (on the rear-wheels, of course) can make rear-wheel-drive vehicles more drivable, but if you have a choice, pick a different vehicle to drive when it is snowing hard, very icy, or the roads aren't plowed. Snow tires (including studded snow tires) can be used in North Dakota between October 15th and April 15th though studded tires may result in scars on your driveway if you aren't careful. If you have rear-wheel-drive, putting something heavy (like bags of sand or salt) in your trunk can help as the weight will improve traction.

## **Driving on Snow and Ice:**

- If you aren't making it up hills, turn off your traction control. Traction control puts your car in neutral when the wheels slip which is nice for recovering from a skid but may get you stuck in snow.
- While you need to drive slowly to keep control of your vehicle, you have to keep moving and not drive so slowly that you get stuck. On flat base or town roads, 15-20 mph is usually about right, but be responsive to conditions.
- Never use cruise control on wet, snowy, or icy roads.
- Regardless of your personal reaction time, your vehicle's reaction time is much slower on snowy or icy roads, and quick moves (like hitting the brakes too hard or yanking the wheel) can cause you to skid out of control. Take your time. Start slowing down for turns and stops at two or three times the distance you would in good driving conditions.
- Increase your following distance dramatically! You should stay at least 8 seconds behind the vehicle in front of you.
- If you feel your wheels start to slip, take your foot off the gas and then reapply it. Sometimes, that's all it takes to regain control of your vehicle.
- Braking often causes skidding. If you skid, take your foot off the brake and look for an opening that you can steer to. You can't steer if your brakes are locked, and if you stare at an obstacle (like a person, car, tree, sign, or animal) you will probably hit it. This is called "target fixation" and is hard to avoid. Look where you want to go, and don't pump the brakes if you have anti-lock brakes.
- Anti-Lock Brakes are not 100% skid-proof but definitely help.
- The safest way to drive on Hwy 83 is to stay in the right lane and go the speed of the vehicle in front of you while maintaining a good following distance.

- Drive in 3rd gear (D3 or D if there is an O) or in sport mode (S), if you have it, all the time in town and on base and also on the highway when it is extremely snowy or icy. It can be helpful to downshift further when stopping on ice, but make sure you are going slowly enough that you don't hurt your transmission when you downshift! Shifting in to neutral will also help you slow down and stop, especially on ice.
- Stay far behind snow plows. Generally, it is better not to pass them, but, if you do, make sure to give them plenty of clearance and NEVER pass if the plow is throwing up snow and obscuring your vision.
- After a heavy snowfall has been plowed (mostly) away, you need to watch out for disappearing lanes, especially in town. If there is too much snow, the plows often end up piling it on the edges of the street instead of on the boulevard. This can result in 4 lane roads being reduced to 3, 3 to 2, and 2 to a single lane, especially where the road curves.
- Perhaps the most important thing to remember when driving in winter is that you may not be in full control of your vehicle at any time, and the same goes for all other drivers. Plan to have trouble stopping or slowing, and plan for other vehicles to have trouble too. Plan to have trouble getting started from a stop, especially if you have a front or rear wheel drive vehicle. While you shouldn't cut other drivers off by turning or changing lanes too short a distance in front of them at any time (it's also illegal), doing so in the winter can be particularly dangerous.

### **Special Note about Hills:**

- The trick to making it up a hill when it is icy or snowy is to have enough momentum when you start to make up for what you lose when your tires don't have enough traction. This can be a very tricky balancing act as you also don't want to lose control and hit the curb or a parked car. The best plan is to avoid hills that aren't plowed whenever possible (especially

the one on 3rd St SE by Burdick Expy where there is an accident nearly every time it snows). Once you start up a hill, avoid stopping. If you stop, you might not be able to get going again, especially if you have a front or rear wheel drive vehicle. Downshifting can also help.

- The trick to making it **DOWN** a hill without skidding through the intersection at the bottom is to slow down **WAY** in advance of the bottom of the hill and downshift or shift into neutral for the last half block or so. It is not legal to go down a hill entirely in neutral.

### **Getting Un-Stuck:**

- Straighten your wheels. While you might not want to go straight, you will find that the direction your wheels are pointed has little to do with what direction you end up going anyway, and you are more likely to get un-stuck if your wheels are straight.
- Try rocking the car: try to go forward, then rapidly stop and shift to reverse and back over and over again.
- Remove snow built up in your wheel wells.
- If you have kitty litter or sand, you can put some down in front of or behind your tires to improve traction.
- Spinning your wheels at high speed just damages your tires; it is not the way to get un-stuck.

### **Beating the Winter Blues**

**Get Out of the House:** There are lots of activities both on and off base.

One of the best ways to beat the winter blues is to just stay busy. If you don't want to go anywhere, go out and play in the snow!

**Vitamin D:** Some people get the winter blues because they aren't getting enough vitamin D from the sun. If you are feeling blue and activity doesn't seem to help, try taking some vitamin D supplements and/or get a sunlamp.

**Seasonal Affective Disorder (SAD):** Some people feel depressed in winter due to a lack of sunlight beyond vitamin D. If you think you may be one of them, try using a white (not blue) SAD lamp.

**Kids and Cabin Fever:** Kids need to get outside to play off their extra energy in the winter. See "Playing in the Snow" under "Snow! Snow! Snow!" for more information. It is also good for kids to go places and do things away from the home.

### **Winter Storms and Blizzards**

**Preparing for the Storm:** When a storm is forecasted, make sure you have plenty of food in your house and gas in your car. It also helps to have something to do (check books, DVDs, and games out at the library!).

If you are traveling out on the highway in winter, you should always keep some winter survival gear in your car, regardless of the forecast. Skirt-wearers should bring along a warm pair of pants or snow pants, and anyone wearing shoes should pack boots.

#### **During the Storm:**

- Stay home if possible, especially if a "no travel advised" warning is enacted.
- If you work on base, keep your phone nearby so that you know if a delayed-reporting or even a stay-home order comes through. Know your what storm category of personnel you are.



- If you work on base but live off-base, keep at least one change of clothes and a toiletries kit at work. That way if you get stuck on base, you are prepared for at least one night.
- If an early release is announced, go home right away. Blizzard conditions can develop quickly and with little warning, and historically the deadliest blizzards all arrived suddenly on seemingly warm and clear days.
- If delayed reporting is announced, keep in mind that the purpose of delayed reporting is two-fold: to give the snow removal crews time to plow the highway and streets and to give you time to shovel your driveway and take your time while driving to work. If road conditions are red and you **have** to drive to work, leave at least twice as early as you usually do.
- If you have to go to work, the roads around your home haven't been plowed yet, and you don't have a 4WD or AWD vehicle, you could consider car-pooling with a friend or co-worker who does.
- Check out the North Dakota Department of Transportation's Road Condition Map (<http://www.dot.nd.gov/travel-info-v2/>) or download and consult the ND Roads cellphone app before you go anywhere on the highway. You can click on the highway(s) you plan to take for more information on them. Click on "Weather Cameras" in the left menu to reveal camera locations you can click on to get a look at conditions.
- In white-out conditions, don't stop and park in the middle of the road if you can avoid it. It is safer at the side of the road where you are less likely to be hit by fool-hardy drivers.
- If you have to travel and get stuck on the highway, stay with your vehicle, especially during blizzard conditions. There are lots of tragic stories about people who go walking for help, end up walking within a few yards of an occupied farm house that they can't see because of the blowing snow, and are found frozen to death the next day. Often, if

conditions aren't too bad, someone will stop and give you a ride, but it is a good idea to have a cell phone with you so that you can call for help (though if conditions are really bad, you will have to wait until it is safe for help to arrive). Make sure your tail-pipe is clear (and stays clear) and run your vehicle for short periods of time with the heat on high, ideally with a window cracked slightly open. If you have a winter survival kit, set up cones/flares so that other drivers can see you and bundle up in a blanket. If any of your clothing is wet or damp down to the skin, you should remove it and replace it with dry. Damp or wet clothing is worse than no clothing at all. Keep moving and pay special attention to your feet which are particularly vulnerable to frostbite. If your shoes are too tight, they can actually increase your chances of frostbite. Boots are better, especially when paired with warm socks.

**A Word about Ground Blizzards:** Sometimes, when there is a lot of loose snow on the ground and high winds, there can be blizzard conditions even though it is not snowing (so there is nothing on the radar). This is called a ground blizzard, and it can be just as bad as a normal blizzard but harder to predict. Sometimes snow blows across the highway, low to the ground. This is not a ground blizzard, but it can create unexpected hazards as it polishes existing ice and packed snow and accumulates in “fingers” of snow on the sides of the highway.

**The Weatherman Who Cried Wolf:** Weather is hard to predict. Sometimes, everyone says that a storm is coming, but it misses us entirely. Sometimes a storm happens (like a ground blizzard) when no one has predicted anything. It is best to always be prepared. To find out what current conditions are away from your window, check out the ND DOT Road Condition Map and weather cameras (link under “Resources” below).

**When Will Winter End?** Probably sometime between late March and mid-May. Beware the false spring. It often warms up for a bit sometime between mid-February and early April and then winter comes back with a vengeance, often with a wintery-spring storm. Keep your winter gear (including coat and boots) in your car until mid-to-late May. Historically, spring blizzards are the most deadly because they arrive suddenly on seemly nice spring days and catch people unprepared.

### Resources

North Dakota Department of Transportation's Road Condition Map  
<http://www.dot.nd.gov/travel-info-v2/> or download the ND Road app

ND Department of Transportation's Winter Travel Information Site  
<https://www.dot.nd.gov/travel/#winter>

NDSU's Winter Storm Information <https://www.ag.ndsu.edu/winterstorm>  
Note the Winter Survival Kit Phone App and click on items in the left side menu to access information on a range of winter topics from home care to snow-blower safety.

North Dakota Tourism's Winter Activities page  
<https://www.ndtourism.com/winter-activities>

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[https://acc.ent.sirsi.net/client/en\\_US/minot/](https://acc.ent.sirsi.net/client/en_US/minot/)