



Government of  
Canada

Gouvernement du  
Canada

*Self-Help Advice*

# WINTER DRIVING

*You, your car  
and winter storms*



Canada

**Why not keep this  
booklet in your glove  
compartment?**



This publication was produced by the **Office of Critical Infrastructure Protection and Emergency Preparedness** in co-operation with:



the Canadian Automobile Association

*Cette publication est aussi disponible en français.*

*Elle s'intitule : La conduite en hiver, comment se préparer*



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An electronic version is available on the Internet.

This publication is also available in alternate formats (audio cassette, large print, computer diskette and braille) through InfoTouch by calling toll-free 1-800-788-8282. Use the same number for teletypewriter (TTY).

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**WINTER** TRAVEL BY AUTOMOBILE CAN BE SERIOUS BUSINESS. BE PREPARED. MEMBERSHIP IN THE CANADIAN AUTOMOBILE ASSOCIATION IS RECOMMENDED. IF YOU DO A LOT OF WINTER DRIVING IN ISOLATED REGIONS, YOU MIGHT CONSIDER HAVING A CITIZEN'S BAND RADIO. \*911 IS A FREE CALL TO POLICE AND AMBULANCE ON YOUR CELLULAR PHONE, AND \*CAA IS A FREE CALL FOR CAA EMERGENCY ROAD SERVICE (FOR CAA MEMBERS).



## HEED THE WARNINGS

Local weather offices of Environment Canada issue warnings of impending blizzards, heavy snow, freezing rain or drizzle, cold waves and winds.

## KNOW THE HAZARDS

### ***Blizzard***

The most perilous of winter storms combining falling, blowing, drifting snow, winds of 40 km/hour or more, visibility less than 1 km, temperatures less than -10\_C; duration: six hours or more.

### ***Heavy snow***

Ten centimetres or more in 12 hours, or 15 cm or more in 24 hours. Even less in temperate climates.

### ***Freezing rain or drizzle***

An ice storm coating roads, trees, overhead wires, etc. with ice.

### ***Cold wave***

A rapid fall in temperature in a short period, requiring greater than normal protective measures.

### ***Winds***

The cause of blizzard conditions, drifting, reduced visibility and wind-chill effects.

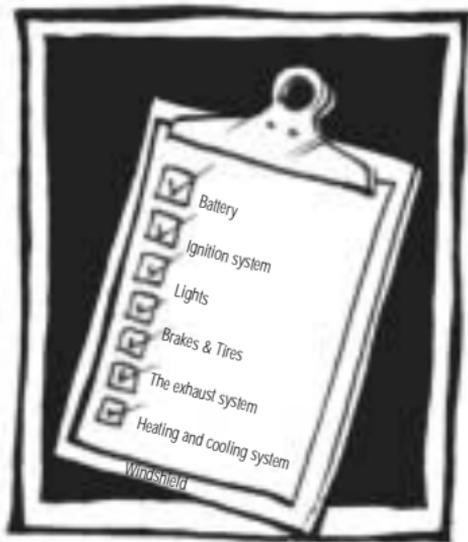
### ***Black Ice***

Where the road ahead looks like black and shiny asphalt. Shaded areas of the road, bridges and overpasses freeze sooner in cold weather, long after the sun has come out.

# TUNE UP

## *your* CAR

WINTER WEATHER PRESENTS THE GREATEST CHALLENGE TO YOUR CAR AND ITS ENGINE. PREPARE FOR WINTER BY GETTING A COMPLETE CHECK-UP IN THE FALL.



Check the following systems:

### *Mechanical System:*

Your tune-up should include battery, belts, hoses, radiator, coolant/anti-freeze, oil, lights, brakes, exhaust system, heater/defroster, wipers and ignition system.

### *Battery:*

Cold weather starts require a fully charged battery. Recharge or replace weak batteries. Check fluid levels, battery posts, voltage regulator and alternator or generator.

### *Ignition system:*

Damaged ignition wires or a cracked distributor cap or worn spark plugs can make starting difficult or may cause a sudden breakdown.

### *Lights:*

Regularly check that all lights are functioning properly and that headlights are properly aimed.

### *Brakes:*

To ensure even braking, brakes should be checked and, if needed, serviced. Pulling, a taut pedal or unusual squealing or grinding may indicate a need for repair.

### *Tires:*

Traction is the key to good movement, turning and stopping on wet surfaces. Check the tires and tire pressures at least once a month when the tires are cold and remember that tire air pressure decreases in colder weather. Tires should be properly inflated to the maximum pressure amount shown in the owner's manual or on the door frame. Do not exceed pressure shown on the tire sidewall. Check your spare tire regularly.

Identical tires on all four wheels will improve vehicle handling. Mixing tires with different tread patterns, internal construction, and size degrades the stability of the vehicle and should be avoided. Tires marked with the pictograph of a peaked mountain with a snowflake meet specific snow traction performance requirements, and have been designed specifically for use in severe snow conditions.

### *Exhaust system:*

Have the exhaust system fully checked for leaks that could send carbon monoxide into your vehicle.

### *Heating and cooling system:*

Check your radiator and hoses for cracks and leaks. Make sure the radiator cap, water pump and thermostat work properly. Test the strength of the anti-freeze, and test the functioning of the heater and defroster.

### *Windshield Wipers and Washer:*

Make sure wipers are in good condition and fill up on winter washer fluid. Blades that streak should be replaced. Make sure there is enough windshield washer fluid in the reservoir and that it is rated in the -40C temperature range. Carry an extra jug in the vehicle.



One way to find a reputable repair facility to tune-up your vehicle is to look for the CAA Approved Auto Repair Services sign at garages. Check the Yellow Pages or contact your local CAA office. These facilities must meet CAA's special standards for fairness and reliability.

## PREPARE THE DRIVER

If you must drive in bad weather, plan ahead and make sure you have enough fuel.

If you must drive in bad weather, think caution, plan ahead and make sure you have enough fuel. Try to keep the fuel tank at least half full.

Be alert, well-rested and sober behind the wheel. Check mirrors and environment controls before you start. Don't forget to wear your seat belt and to ensure all children are correctly positioned in appropriate child car seats and booster seats. Children aged 12 and under should ride properly buckled up in the back seat.

See and be seen; clear all snow from the hood, roof, windows and lights. Clear all windows of fog. If visibility becomes poor, find a place to safely pull off the road as soon as possible. It's best to stop at a rest area or exit the roadway and go to a protected area. If the roadside is your only option, pull off the road as far as you can. Other drivers frequently strike vehicles parked at the side of the road. In reduced visibility you should make sure your emergency flashers are on to alert other drivers.

Check weather and travel conditions before heading out. Give yourself extra time for travel and if weather is bad, wait for conditions to improve. Plan your route and let someone know which way you'll be travelling, your destination and expected arrival time, especially when driving long distances. If you don't turn up after a reasonable delay, people will know where to search for you. If the going gets tough, turn back or seek refuge.

Try to keep to the main roads and drive with caution, measuring your speed to road and weather conditions.

Avoid passing another vehicle if possible, when weather and road conditions are bad.

Wear warm clothes that do not restrict movement.

It's a good idea to take a cellphone with you. It can be very valuable especially if you need help or in an emergency. But don't talk and drive. Drivers should not use a cellphone while the vehicle is in motion. Let a passenger call for you or pull over to a safe spot to place a call for assistance.

# WINTER CAR *survival* KIT

THE CANADIAN AUTOMOBILE ASSOCIATION

RECOMMENDS THE FOLLOWING ITEMS BE KEPT IN THE

*TRUNK* OF YOUR CAR.

- Shovel
- Sand or kitty litter
- Traction mats
- Tow chain
- Compass
- Cloth or roll of paper towels
- Warning light or road flares
- Extra clothing and footwear
- Emergency food pack
- Booster cables
- Ice scraper and brush
- Matches and a 'survival' candle in a deep can (to warm hands, heat a drink or use as an emergency light)
- Fire extinguisher
- Extra windshield washer fluid
- Fuel line antifreeze



The following items should be kept in the cab of your car:

- Road maps
- Flashlight
- First-aid kit
- Blanket (special 'survival' blankets are best)

If you get trapped in a storm or snow bank- Don't panic!

Avoid over-exertion and exposure. Shovelling and bitter cold can kill. Stay in your car. You won't get lost and you'll have shelter. Keep fresh air in your car. Open a window on the side sheltered from the wind. Run your motor sparingly. Beware of exhaust fumes and the possibility of carbon monoxide. Ensure the tailpipe is not blocked by snow. Use the candle for heat instead of the car's heater, if possible. Set out a warning light or flares. Put on the dome light. Overuse of headlights may run your battery down. Exercise your limbs vigorously. Keep moving and don't fall asleep. Keep watch for traffic or searchers. Wear a hat as you can lose up to 60% of your body heat through your head.

# KEEP *control of* YOUR VEHICLE *to* AVOID COLLISIONS

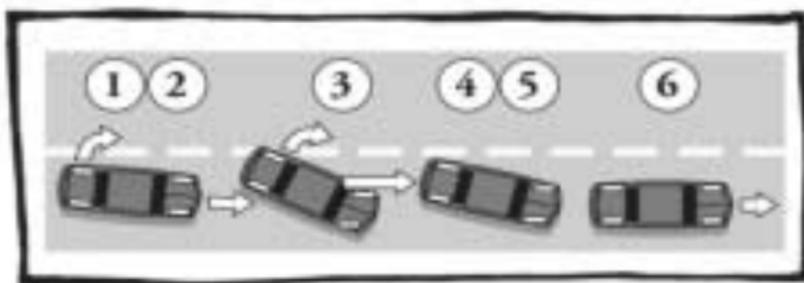
WINTER COLLISIONS CAN OCCUR WHEN YOUR VEHICLE SKIDS. REMEMBER THAT NOT ALL VEHICLES RESPOND THE SAME TO ICY, SLIPPERY ROADS. YOU MUST KNOW HOW TO HANDLE YOUR VEHICLE AND HOW IT RESPONDS IN VARIOUS WEATHER CONDITIONS. CONSULT YOUR OWNER'S MANUAL AND FAMILIARIZE YOURSELF WITH YOUR VEHICLE'S BRAKING SYSTEM AND TIRE TRACTION. YOU MAY WANT TO CONSIDER TAKING A DRIVER EDUCATION COURSE THAT TEACHES EMERGENCY DRIVING TECHNIQUES.

Skids can best be avoided by driving for conditions, slowing down, allowing extra time to get to your destination, anticipating lane changes, turns and curves; slowing down in advance; making smooth, precise movements of the steering wheel and by being sensitive to how your vehicle is steering.

Even careful and experienced drivers experience skids. Don't panic! Learn to handle skids and remember that sometimes, the vehicle will skid a second and even third time after the initial skid.

DO NOT PANIC.

## REAR-WHEEL SKIDS

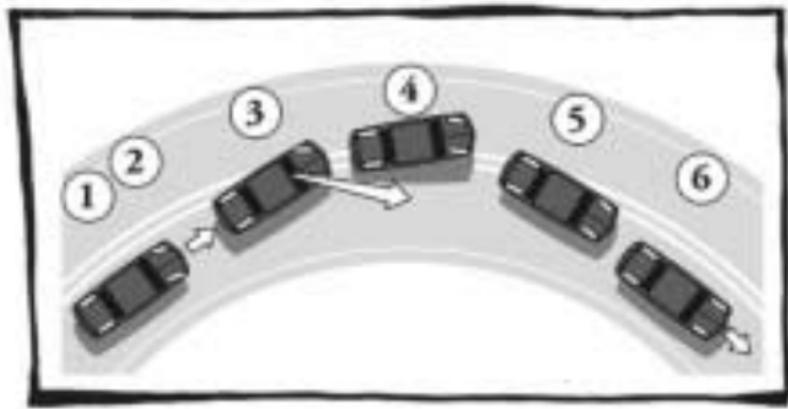


If the rear wheels lose traction, use these steps to regain control after a skid:

1. Take your foot off the brake if the rear wheels skid due to hard or panic braking.

- Ease off the gas pedal if the rear wheels lose traction due to hard acceleration (rear-wheel drive).
- Shift to neutral.
- Look down the road in the direction you want the front of the car to go and be sensitive to the feel of the car and how it is responding to your steering.
- To regain control of the vehicle, steer gently in the direction of the skid of the rear of the vehicle. Just before the skid ends, bring the front wheels straight. Sometimes the vehicle will skid in the opposite direction, so you may have to repeat the movement until the vehicle stabilizes.
- Once the vehicle is straight, return to a driving gear and accelerate gently so that engine speed matches road speed.

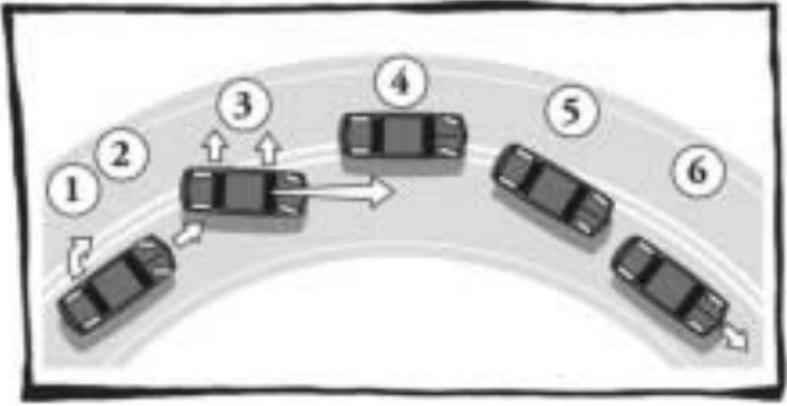
## FRONT-WHEEL SKIDS



Front-wheel skids are caused by hard braking or acceleration and by entering a curve too fast. When the front wheels lose traction, you lose steering ability. The best way to regain control if the front wheels skid is:

- If the front wheels skid from hard braking, release the brake. If the wheels spin from loss of traction due to acceleration, ease off on the accelerator (front-wheel drive).
- Shift to neutral.
- If the front wheels have been turned prior to the loss of traction, don't move the steering wheel. Since the wheels are skidding sideways, a certain amount of braking force will be extended.
- Wait for the front wheels to grip the road again. When traction returns, you'll regain steering control.
- Return to a driving gear and gently steer in the direction you want to travel. Gently accelerate until engine speed matches road speed.

## FOUR-WHEEL SKIDS



Sometimes all four wheels lose traction - generally at high speeds under adverse conditions. The most effective way to get your vehicle back under control when all four wheels skid is:

1. Remove your foot from the brake or accelerator.
2. Shift into neutral.
3. Look and steer in the direction you want the front of the car to go.
4. Wait for the wheels to grip the road again. As soon as the wheels regain traction, you will travel in the direction you want to go.
5. Return to a driving gear and maintain a safe speed.

NOTE: Avoid using overdrive on slippery surfaces.

# BRAKING

TO SURVIVE ON  
THE ROAD IN WINTER,  
PROPER BRAKING IS  
ESSENTIAL.



Stopping on a slippery surface requires more distance, so increase your following distance.

Focus your attention as far ahead as possible - at least 20 to 30 seconds.

The best way to stop on a slippery surface is to use threshold or controlled braking and shift to neutral. If you don't have anti-lock brakes, the best way to use threshold or controlled braking is to keep the heel of your foot on the floor and use your toes to apply firm, steady pressure on the brake pedal. Stop just short of locking the wheels.

If your heel leaves the floor, the ball of your foot pushes the pedal, and the wheels lock because you're controlling the brake with your thigh muscles, which are incapable of finer control.

Under the stress of trying to stop quickly, drivers almost inevitably overact and lock the wheels. If this happens, release brake pressure one or two degrees, then immediately reapply it with slightly less pressure.

Anti-lock brakes are designed to prevent wheels from locking and retain steering control during panic braking. Sensors located at wheels detect lock-up. The anti-lock system relieves enough pressure to allow the wheel to turn, maintaining steering control.

Do not remove your foot from the brake or pump the pedal. If you apply too much brake pressure and the wheels lock momentarily, you might feel the brake pedal pulse back against your foot. Pumping the pedal works against the system by providing false information.

For additional information on winter driving and traffic safety, please contact your local CAA office, or visit [www.caa.ca](http://www.caa.ca) on the Internet.

For more self-help advice on emergency preparedness, contact:

**OFFICE OF CRITICAL  
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Ottawa, ON K1A 0W6

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Fax: (613) 998-9589

E-mail: [communications@ocipep-bpiepc.gc.ca](mailto:communications@ocipep-bpiepc.gc.ca)

Internet: <http://www.ocipep-bpiepc.gc.ca>

**PROVINCIAL/TERRITORIAL  
EMERGENCY MEASURES  
ORGANIZATIONS**

***British Columbia***

Provincial Emergency Program (PEP)

Phone: (250) 952-4913

Fax: (250) 952-4888

***Yukon***

Emergency Measures Organization

Phone: (867) 667-3594

Fax: (867) 393-6266

***Alberta***

Alberta Municipal Affairs

Disaster Services Branch

Phone: (780) 422-9000

Fax: (780) 422-1549

Toll free in Alberta, dial 310-0000-780-422-9000

***Northwest Territories***

Emergency Measures Organization

Phone: (867) 920-6133

Fax: (867) 873-8193

***Saskatchewan***

Saskatchewan Emergency Planning

Phone: (306) 787-9563

Fax: (306) 787-1694

## **Manitoba**

Emergency Measures Organization

Phone: (204) 945-4772

Fax: (204) 945-4620

## **Ontario**

Emergency Measures Ontario

Phone: (416) 314-3723

Fax: (416) 314-3758

## **Quebec**

*Direction générale de la sécurité civile et de la sécurité incendie*

Phone: (418) 646-7950

Fax: (418) 646-5427

Toll Free Emergency Number: 1 866 776-8345

Emergency Number: (418) 643-3256

Or one of the *Direction générale de la sécurité civile* regional offices:

Bas-Saint-Laurent – Gaspésie –

Îles-de-la-Madeleine: (418) 727-3589

Saguenay – Lac-St-Jean –

Côte-Nord: (418) 695-7872

Capitale Nationale – Chaudière-Appalaches –

Nunavik: (418) 643-3244

Mauricie – Centre-du-Québec: (819) 371-6703

Montréal – Laval – Laurentides –

Lanaudière: (514) 873-1300

Montérégie – Estrie: (514) 873-1324

Outaouais – Abitibi-Témiscamingue –

Nord-du-Québec: (819) 772-3737

## **New Brunswick**

Emergency Measures Organization

Phone: (506) 453-2133

Fax: (506) 453-5513

## **Nova Scotia**

Emergency Measures Organization

Phone: (902) 424-5620

Fax: (902) 424-5376

## **Prince Edward Island**

Emergency Measures Organization

Phone: (902) 888-8050

Fax: (902) 888-8054

## ***Newfoundland***

Emergency Measures Division

Phone: (709) 729-3703

Fax: (709) 729-3857

## ***Nunavut***

Emergency Measures Organization

Phone: (867) 979-5822

Fax: (867) 979-4221

For more information on emergency preparedness, please contact your provincial/territorial emergency measures organization.





SAFE GUARD is a national information program based on partnerships and aimed at increasing public awareness of emergency preparedness in Canada.

The SAFE GUARD program brings together government, private organizations and voluntary agencies that are part of the emergency preparedness, response, recovery and mitigation community.

The triangle depicted in the program logo is the international symbol of emergency preparedness. The jagged line evokes the maple leaf, Canada's internationally recognized symbol. The amber yellow colour is a sign of caution and warning.

**SAFE GUARD** is an Office of Critical Infrastructure Protection and Emergency Preparedness program.