Driving in Hazardous Conditions

Created by Traffic Safety Branch, MCB Quantico, Va. Home to a region where weather is always a factor.

Overview

Tips from our basic motor vehicle class

- Driving In Fog
- Driving In Darkness
- Driving in Rain or Snow
- Driving In Hill Country
- Causes and prevention of skidding and hydroplaning

Driving in Fog

- The best advice for driving in the fog is **don't**. Consider postponing your trip until the fog clears.
- If you must drive, drive slowly and use your low-beam headlights. The light from the high beams will reflect back and cause glare.
- **Never drive with just your parking or fog lights.**
- Increase your following distance and be prepared to stop within the space you can see ahead. Don't cross or pass traffic unless absolutely necessary. Listen for traffic you can not see.
- Use your wipers and defroster as necessary for best vision.
- If the fog becomes so thick that you can barely see, pull **completely** off the road. Do not continue driving until you can see better.

Driving in Darkness

- **Drive more slowly at night because you can not see as far ahead and you will have less time to stop for a hazard. Make sure you can stop within the distance lighted by your headlights.**
- **Use your low beam headlights at night when it rains. Do not drive using only your parking lights.**
- **Use your high beams whenever possible in open country or dark city streets, as long as it is not illegal. Do not blind other drivers with your high beam headlights. Dim your lights when necessary. If another driver does not dim his/her lights:**
  - **Do not look directly into the oncoming headlights**
  - **Look toward the right edge of your lane.**
  - **Watch the oncoming vehicle out of the corner of your eye.**
  - **Don't try to "get back" at the other driver by keeping your bright lights on. If you do, both of you may be blinded.**

Driving in Darkness, cont.

When you drive at night, remember:

- **Pedestrians and bicyclists are much harder to see at night, so stay alert for them.**
- **Motorcycles are also harder to see at night because most have only one taillight.**
- **More highway construction takes place at night. Reduce your speed in highway construction zones.**
- **When you leave a brightly-lit place, drive slowly until your eyes adjust to the darkness.**
- **Drive as far to the right as possible, when a vehicle with one light drives toward you. It could be a bicyclist or motorcyclist, but it could also be a vehicle with a missing headlight.**

Driving in Rain or Snow

- Many kinds of pavement are the most slippery when it first starts to rain or snow because oil and dust have not yet washed away. Slow down at the first sign of rain, drizzle, or snow on the road. Turn on your windshield wipers, headlights, and defroster.
- In a heavy rainstorm or snowstorm, you may not be able to see more than 100 feet ahead. When you can not see any farther than that, you can not safely drive faster than 30 mph. You may have to stop from time to time to wipe mud or snow off your windshield, headlights, and taillights
- If you drive in snowy areas, carry the correct number of chains and be sure they will fit your drive wheels. Learn how to put the chains on before you need to use them.


In Northern Va, do you see this?
When you do, are you prepared?


After 1” of rain

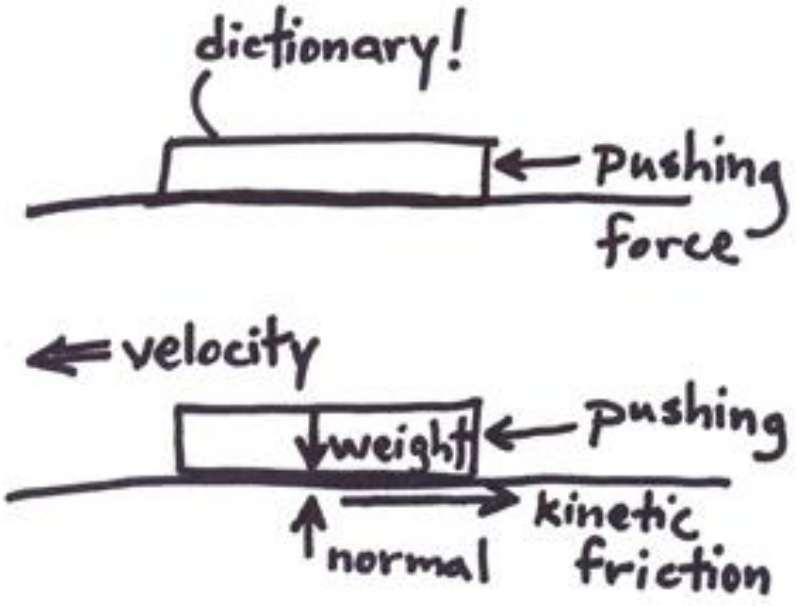
Driving in the Hills around VA

- You never know what is on the other side of a steep hill or a sharp curve. When you come to a hill or curve, slow down so you can stop for any hazard. You must be going slowly enough to stop.
- Any time your view is blocked by a hill or a curve, you should assume there is another vehicle ahead. Only pass the vehicle if a hill or curve is at least one-third of a mile away, because you need at least that much room to pass safely.
- Do not drive on the left side of the road when coming to a curve or the top of a hill, because you can not see far enough ahead to know if it is safe to pass.

Bolivia, South America

Definitions

- What is skidding?
- What is hydroplaning?



Skidding

Skidding – Occurs due to slick conditions on the road whether it be rain, snow, sleet, or ice. While people tend to be more cautious when driving on snow and ice, they don't seem to show the same caution when driving in the rain and that can have disastrous results. In the periods between rainfalls, oil and grease build up on the roads and the warm sun keeps the oil and grease in a liquid state. The most dangerous time for slick roads in rain is shortly after the rain begins and there is a thin layer of water on the roads. Once it starts to rain, the oil and grease float on top of the water creating a very slick surface. The roads are most slippery in the first half hour after it starts to rain. Eventually, the oil and grease will be washed down the drains and the roads will lose that slick coating of oil, but that is not the time to relax because, as the rains increase, the conditions for hydroplaning increase.


Speeding + Slippery Roads = DEATH

Hydroplaning (Aquaplaning)

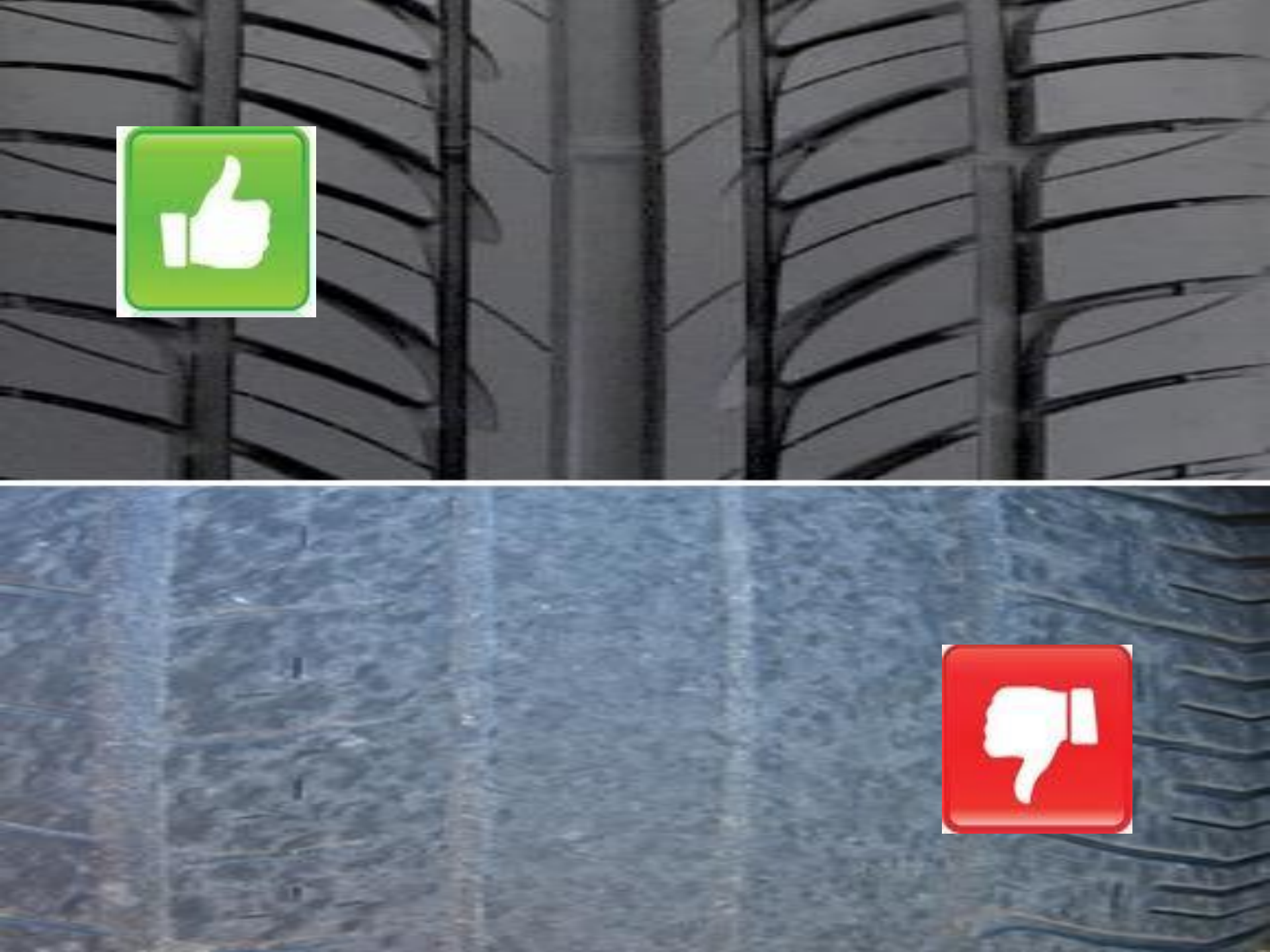
Occurs when water is standing water on the road and the depth is such that the car's tires can't squeeze the water out between the tire's treads. If this happens, the tires ride up on top of the water like a pair of water skis and lose all contact with the road. This can occur at speeds as low as 35 mph and becomes most dangerous at 55 mph or more.

Hydroplaning – 3 Main Factors

- **Vehicle speed.** As speed increases, wet traction is considerably reduced. Since hydroplaning can result in a complete loss of traction and vehicle control, you should always reduce speed, paying attention to the traffic around you.
- **Tire tread depth.** As your tires become worn, their ability to resist hydroplaning is reduced.
- **Water depth.** The deeper the water, the sooner you will lose traction, although even thin water layers can cause a loss of traction, including at low speeds.

Skid Prevention Tip #1

Tires – Few people realize that tires are the most important control device on your car. The steering wheel and brakes aren't much good when the tires aren't in contact with the road. Tires need to be kept in good condition and checked often for tread wear. There should be a minimum of 2/32 of an inch of tread depth on your tires. A simple way to check the depth is by sticking a penny between the treads. If the top of Abe's head is visible, your treads are too thin and your tires should be replaced.



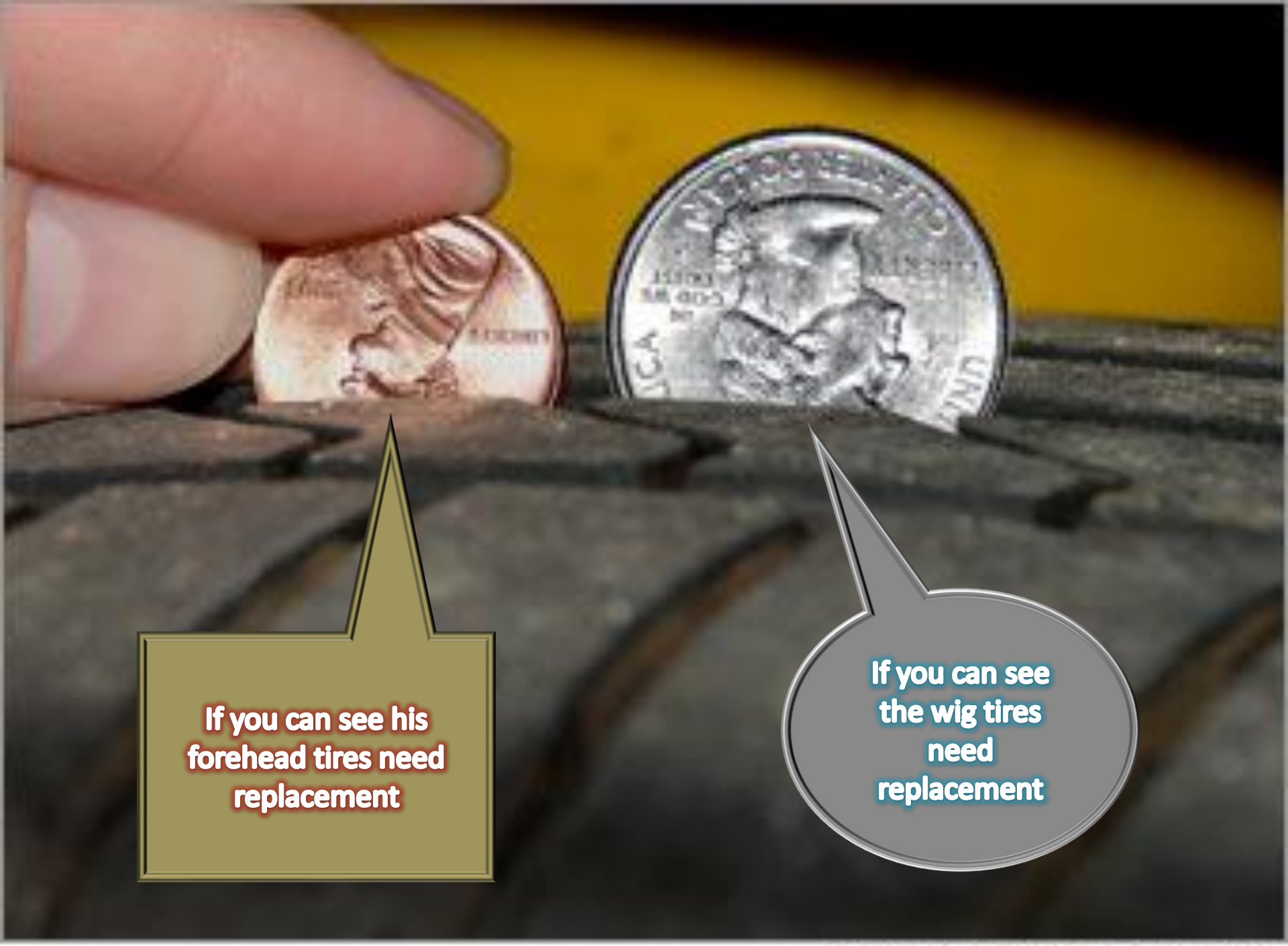
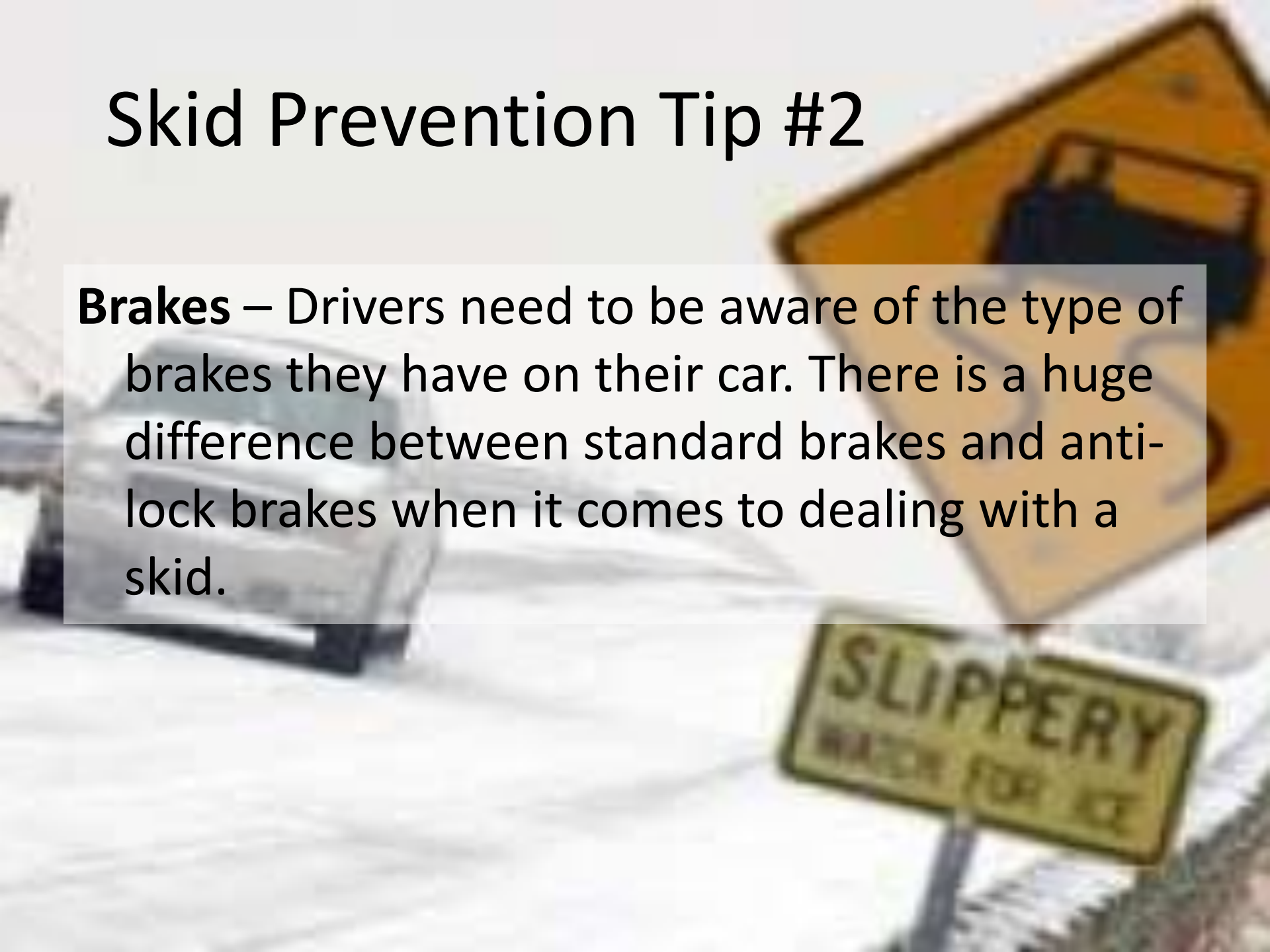


PHOTO: JOHN R. COUGHLIN

Skid Prevention Tip #2

Brakes – Drivers need to be aware of the type of brakes they have on their car. There is a huge difference between standard brakes and anti-lock brakes when it comes to dealing with a skid.



Standard Brakes

Standard brakes are not designed to stop your car in skidding conditions. When you lock up standard brakes, you are no longer able to steer the car. If you slam on standard brakes you are just going to make things worse and you could cause the car to careen out of control. If your car is equipped with standard brakes, **don't apply the brakes** until you have regained control of steering and your car has started to slow down on its own.

Anti-Lock Brakes (ABS)

Anti-lock brakes (ABS) are designed to prevent losing control of the car in a skid situation. They do this through use of a computer that detects when a tire is turning faster *(trying to grip the surface)* and applying pressure independently to each individual brake up to 20 times a second. This allows you to slow the vehicle while still being able to steer to avoid a collision. With the brakes pulsing that rapidly, the driver will feel a fluttering in the brake pedal. Unfortunately, many drivers, who are unfamiliar with ABS, feel this and think something is wrong and take their foot off the brakes. That is a big mistake! When applying anti-lock brakes in a skidding situation, you should expect to feel the brakes fluttering under your foot and understand that the system is operating correctly.

Skid Prevention Tip #3

Cruise Control – This is a great system to prevent speeding *(and getting a ticket)* and to increase your gas mileage. However, you should **never use cruise control in the rain**. If your tires start to spin, the cruise control will detect this and will try to correct it by increasing the speed. That is the last thing you want to have happen in a skidding situation.

Recovering from a Skid

Whether you are skidding on slick streets in light rain or hydroplaning through deep standing water, the method of recovery will be the same. If you feel your car start to skid:

- Take your foot off the gas! Again, you shouldn't be using cruise control.
- If your car is equipped with standard brakes, do not apply the brakes. If you were applying the brakes when you started to skid, take your foot off the brakes.
- If your car is equipped with ABS, apply firm pressure to the brakes. You will still maintain control of steering while the brakes are applied.

Recovering from a Skid, cont.

- Steer the car in the direction of the skid. In other words, if the rear of your car is skidding to the left, turn your wheel to the left. Try not to look at the hazards but instead, look at where you want to steer the car and keep steering in that direction until you have regained control of the car.
- Once you have regained full control of steering and the car has slowed on its own, you may be able to apply standard brakes effectively to bring your car to a stop.

References

- www.weather.com
- http://dmv.va.gov
- http://www.nationalsafetycommission.com
- www.smartmotorist.com

Questions?