



# Winter Driving Skills

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# Winter Driving Skills

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## Classroom Challenges

- I am the owner of **Tahoe Driving Academy**, but all my instructing has been in the field. This is my first in-class workshop, so please bear with me. 
- There are varying degrees of knowledge and skill in this class, so understand I may share basic skills, but I will be highly shocked if everyone doesn't leave with some new knowledge.
- Time Constraint. Some slides and videos in your deck will be skipped for this workshop.

# Course Topics



- **Understanding Winter Conditions**
- **Friction and Traction**
- **Vehicle Control Techniques**
- **Environmental Awareness**
- **Vehicle Preparedness**
- **Questions & Answers**

# Understanding Winter Conditions

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## 3 factors make winter driving dangerous:

1. Your vehicle in the snow and ice.
2. The *other* driver in the snow and ice.
3. Visibility for both you and the other drivers.



# Friction

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**Starting, Stopping, and Steering** are all dependent on the external force of friction.

- **Starting a motion** (acceleration) requires friction between the wheels and the road.
- **Stopping a motion** requires friction between the brakes and the wheel, as well as between the wheel and the road.
- **Steering motion** requires friction between the wheels and the road.

Water, snow, and ice all reduce friction and when these elements get in between the tire and the road, and/or between the wheel and the brakes, the ability to start, stop, and steer is significantly reduced.

**Friction is your winter friend!**

# **Friction and Traction**

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*What components create friction between the road and the wheel?*

*What component creates friction between the car and the wheel?*

# Friction and Traction – AWD & 4WD

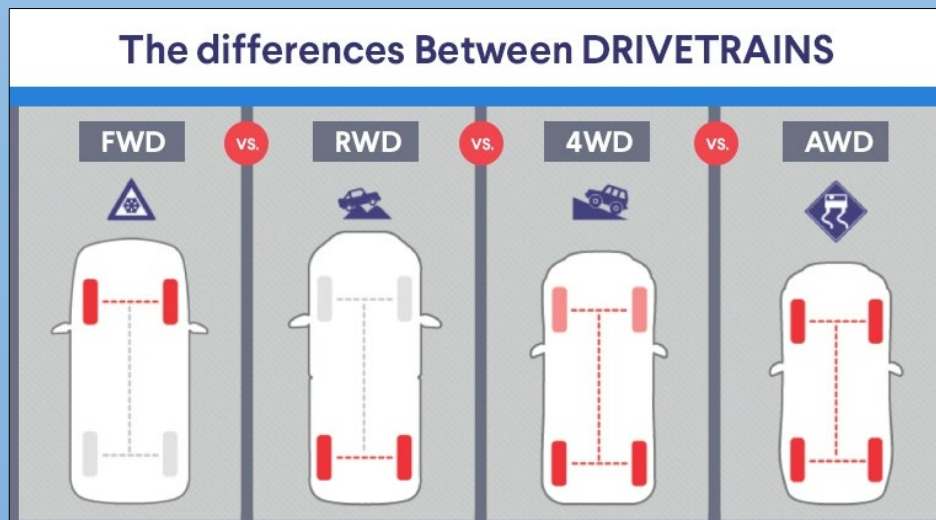
The main difference between 4x4 and AWD is AWD systems are always active and automatically share torque among the axles when low-traction conditions are detected, while 4WD systems are part-time and need to be engaged by the driver via a lever or button in the cockpit.

## 4WD – 4 Wheel Drive

- Manual engagement
- Tougher for more extreme conditions
- Its purpose is for off-roading

## AWD – All-Wheel Drive

- Thinks for itself, so you can focus on driving
- Balances fuel economy and traction
- Sophisticated systems available



# **Friction and Traction - Tires**

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**The wheel consists of a rim and a tire.**

The rim is what holds the rubber tire.

**The tire has 4 essential functions.**

1. Support the weight of the vehicle.
2. Absorb the bumps in the road.
3. Changing direction. (Steering)
4. Acceleration and braking.

**We will focus on steering, acceleration, and braking.**



# **Friction and Traction - Tires**

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**There are 4 basic tire categories:**

1. All-season tires.
2. Summer tires.
3. All-Terrain tires.
4. Winter tires.

# **Friction and Traction - Tires**

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## **All-season tires**

The most popular tire on the road, built to handle “everyday” driving conditions. Its tread provides balanced dry and wet performance levels, as well as acceptable snow traction in regions with light winter weather.

All-season tires are a practical solution designed for year-round usage with typically a long tread life.

# **Friction and Traction - Tires**

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## **Summer tires**

These tires are primarily designed for high-performance vehicles and provide optimized dry and wet performance levels in a temperate environment.

Summer tires are designed for year-round usage but should not be used during the winter season where temperatures are colder and approach freezing consistently as their performance would be less than optimal.

# **Friction and Traction - Tires**

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## **All-terrain (A/T) tires**

These are off-road tires designed to give you excellent grip in mud, dirt, and rocks.

They can be driven on the road, but create a louder ride noise than most other tires, along with less treadwear due to their unique tread design.

**They should not be confused with Winter or Snow tires!**

# **Friction and Traction - Tires**

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## **Winter tires**

These tires are specifically designed to offer optimal levels of traction on ice, snow, and slush in addition to wet and dry road surfaces in severe cold weather conditions. Severe cold weather conditions are defined to occur when ambient temperatures are consistently below freezing and/or there is substantial winter precipitation.

**Winter tires are not intended for year-round usage.**

# Friction and Traction - Tires

## Tire Stopping Distance

When it comes to winter driving, all-season tires simply can't compete with winter tires.

Dry-, wet- and snowy-pavement brake-test results show stopping distance with different tires. All stops were from 60 MPH.



The 358' stopping difference in the snow between All-season tires and Winter tires translates to **24 car lengths!**



# Friction and Traction – Winter Tires

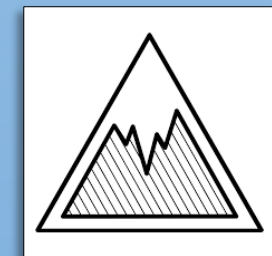
## Winter tires

All winter tires exhibit the **3 Peak Mountain Snowflake** (3PMSF) marking indicating suitability for winter application. They are specifically designed with tread and a rubber compound that stays flexible as temperatures drop below 40° F.



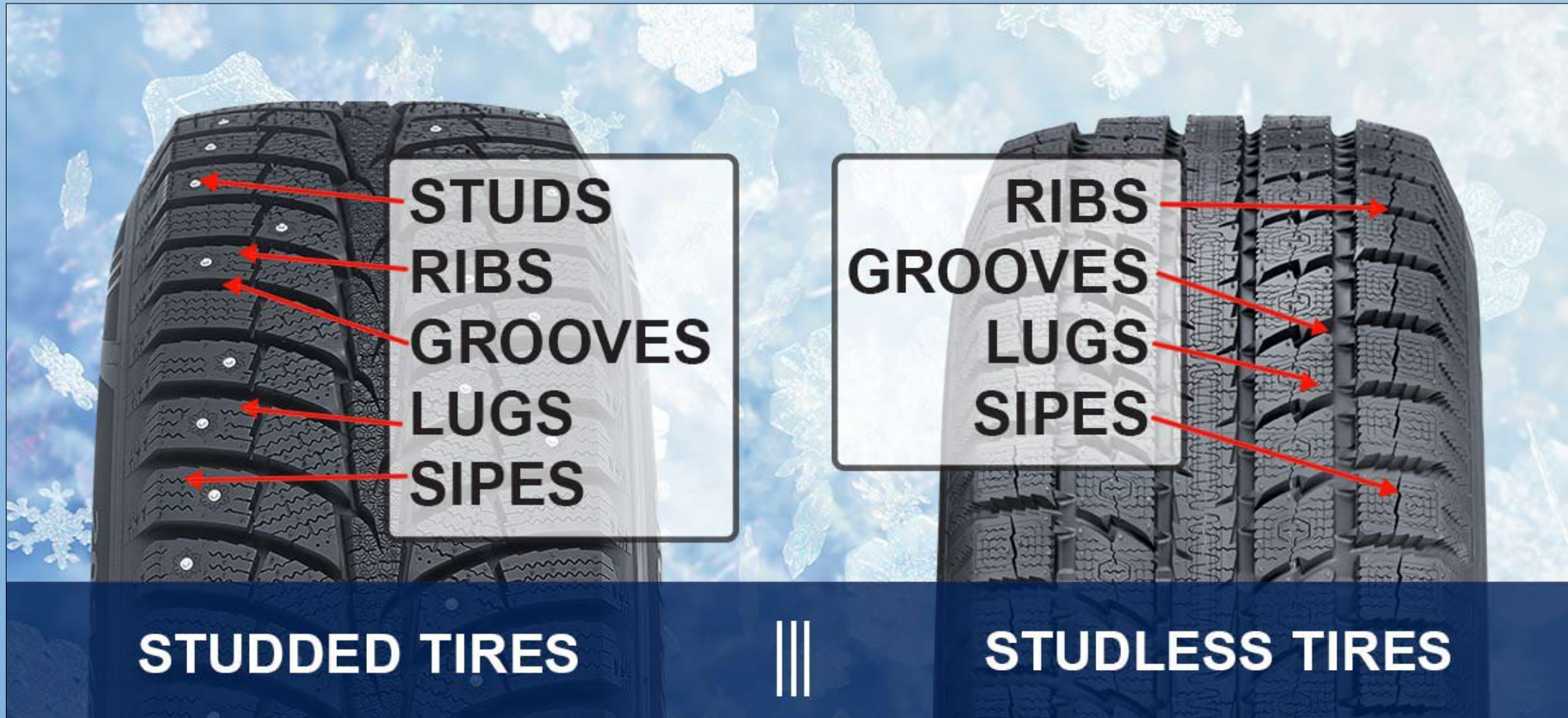
Additionally, the biting edges of the deeper, wider, and jagged tread on snow tires maintain traction in the harshest conditions. A winter tire that includes studs can add even more traction when driving on icy roads.

As of November 2023, there is an additional higher rating with an Ice Grip symbol which is rated on stopping distance, whereas the 3PMSF is rated on acceleration. Currently, I believe Nokian is the only tire manufacturing these, but more brands may feature this soon.



# Friction and Traction – Winter Tires

## Studded and Studless Winter Tires



# **Friction and Traction – Winter Tires**

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## **Studded and Studless Tires**

### **Studded:**

Studded tires have lightweight, small metal spikes (studs) that are staggered and inserted across the tread of a winter tire.

These studs protrude slightly from the rubber tread surface, helping break through packed snow and ice-covered roads to give you better traction.

Studded tires may be sold with preinstalled studs or without the studs, but they can be added later only on Studable tires.



# **Friction and Traction – Winter Tires**

## **Studded and Studless Tires**

### **Studless:**

Studless snow tires offer great traction for most winter conditions, but without metal spikes. They rely on both wide, deep grooves and micro grooves called sipes in the tire to help keep you in control. Sipes act as hundreds of biting edges on ice that help with acceleration, deceleration, and stopping.



# **Friction and Traction – Winter Tires**

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## **Studded *versus* Studless Tires**

- Studded were once considered the answer to snow and ice, but new advances in rubber technology has changed that.
- Recent studies show 3PMSF tires have shorter stopping distance than studded *in the snow*.
- Studded are better *on ice and hard packed snow*.

**Studless are the better choice if you are mostly on snow, concerned about tearing up our roads, prefer a less noisy ride, and the flexibility to leave the mountains for an extended period.**

# Friction and Traction

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## Traction Devices

There are a variety of types of devices fitted or positioned against the tires of vehicles to provide increased traction when driving through snow and ice.

The most common devices are the generic term - snow chains.

Snow chains attach to the drive wheels of a vehicle. Although named after steel chains, snow chains may be made of other materials and in a variety of patterns and strengths.



# Friction and Traction

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## Snow Chains - Link Tire Chains



**Link tire chains** are made of carbon or alloy steel. They wrap around the tire from sidewall across the tread face to the opposite sidewall. These chains are secured in place with special hook fasteners on the side chains and adjusters on the outside of the tire.

# Friction and Traction

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## Snow Chains – Cable Chains



**Tire cables** also known as snow cables are a traction device that features steel coils wrapped around cross cables in a ladder pattern.

Cables are a popular choice for occasional use in mild conditions.

**Cables offer more clearance, compared to link chains, and should be used when a link chain does not have the clearances needed for some vehicles.**

# Friction and Traction

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## Snow Chains – Tire Socks



Also called Textile Chains, they are like a pair of socks for your tires. They have grippy bottoms that align with the tread on your tires and pull over your whole wheel and tire set in seconds.

But, unlike a set of chains, they need to be replaced once 50% of the white road-contact fabric is gone. If you drive on bare pavement at all, it won't take long to wear them out.

**California and Nevada recently approved the use of tire socks.**

# Friction and Traction

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## Traction Boards



These devices are designed to be used when stuck in the snow and obviously not while driving. They are lugged boards that are placed either in front of or behind your stuck wheel(s) to help you get going. The lugs provide something for your tires to drive onto and grip, allowing you to gain enough traction to move out of the rut you're stuck in.

They come in stiff boards and mats than can be folded or rolled for easier in-car storage.

**Boards are probably better as they don't sink like mats, but boards can snap when in use and take up more space in the car.**

# Friction and Traction

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## Chain Laws

You must stop and put on chains when highway signs indicate chains are required. You can be cited by the California Highway Patrol and fined if you don't. You will usually have about a mile between "Chains Required" signs and the checkpoint to install your chains. When chain controls are established, signs will be posted along the road indicating the type of requirement.

***All Chain Installers must be certified.***

***Take note of their Identifying Number in case of an issue!***

# Friction and Traction

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## Chain Laws



### There are Three Levels of Chain Requirements in California:

- **Requirement 1 (R-1):** Chains are required on all vehicles except passenger vehicles and light-duty trucks under 6,000 pounds gross weight and equipped with snow tires on at least two drive wheels. Chains must be carried by vehicles using snow tires. All vehicles towing trailers must have chains on one drive axle. Trailers with brakes must have chains on at least one axle.
- **Requirement 2 (R2):** Chains or traction devices are required on all vehicles except four-wheel/all-wheel drive vehicles with snow-tread tires on all four wheels.  
NOTE: Four-wheel/all-wheel drive vehicles must carry traction devices in chain control areas.  
You can be cited by CHP.
- **Requirement 3 (R3):** Chains or traction devices are required on all vehicles, no exceptions.  
*Our roads will likely be closed before going to R3.*



# **Friction and Traction - Braking**

## **Driving with Traction Devices**

- **Always refer to your vehicles owner's manual before using any traction product.**
- **Vehicle components (ABS sensors, brake lines, etc.) can be damaged if the traction device strikes the components. Always pre-fit traction devices before each use and check clearances.**
- Use common sense, good judgement and extreme caution when using traction devices.
- Never exceed 30 mph while using traction devices. CA law is 25 mph.
- Traction devices may cause cosmetic scuffing on tire when installed. This is unavoidable on certain tread types and tire designs.
- Wheels are also at risk of cosmetic scuffing with the use of traction devices. Wheels using low profile tires such as 35, 40, 45 and 50 series tires are at a higher risk due to the short height of the tire sidewall.
- Traction Devices must hang down over the sidewall of the tire in order to stay on the tire while being used.
- Traction devices can, and often, break during the course of their normal and extreme service life. (If traction device breaks, remove immediately.)
- Traction devices are designed for snow or ice covered road surfaces, not bare pavement. Running traction devices on bare pavement increases the wear and chance of component failure.
- Using traction devices with component failure is extremely unsafe and may cause loss of control or damage to the vehicle. (If traction device breaks, remove immediately.)
- Vehicle operators unwilling to accept the possible risks with the use of any traction device installed on their vehicle such as, but not limited to, accident, vehicle damage, tire damage or wheel damage, should not use any traction device on their vehicle.

# Friction and Traction - Braking

*When braking and your wheels lock up...*

(Raise your hand)

- *Do you pump your brakes?*
- *Hold the brake pedal steadily to the floor?*

# **Friction and Traction - Braking**

## **PUSH THE PEDAL DOWN**

When attempting to stop, the tires need to keep turning. Tires have treads designed to channel snow and water “through” the tire. If a wheel locks up, it will immediately fill the treads with snow resulting in a tire with no treads (bald).

Most cars since the 1990’s came equipped with Anti-locking Braking Systems which prevent the individual wheels from locking up. Prior to ABS, drivers had to “pump” the brakes to balance the fine line between slowing down and skidding.

But for modern vehicles, when the ABS kicks in, continue to hold the brake pedal down until you come to the speed you want.

*I highly recommend familiarizing yourself with ABS by picking a safe icy road and slamming your brakes to engage the ABS.*

*The pedal will chatter and emit a variety of noises letting you know ABS has taken over.*

# Friction and Traction - Braking

*If you lose traction while driving on a flat horizontal street, what level of braking should you apply?*

*(Raise your hand)*

- Brake hard and let ABS take over.*
- Slightly apply the brakes, but not enough for ABS to kick in.*
- Don't brake, let off the gas, and pray your steering skills are good.*

# **Friction and Traction - Braking**

## **Let off the gas and pray!**

When applying brakes, inertia will cause the weight of the car to shift forward putting more weight on the front tires (good), but less weight on the rear tires (bad).

Generally, do not brake when in a skid, just let off the gas. An obvious exception would be if you are about to hit something head on. In that instance, apply the brakes and let the ABS kick in!

***Technically, there are exceptions such as in an understeer skid situation, but those techniques are beyond the scope of this instruction.***

***Watch this video ->***



# **Friction and Traction - Braking**

## **Snow Braking**

Brake early and then coast to your stopping point.

This accomplishes 3 things:

1. If you skid, you now have room to slide to a stop.
2. If the person behind you starts skidding, you have room to move up and give that person room to stop.
3. Increases brake life and saves gas.

**Always check your rear-view mirror when stopping  
and turning onto a throughfare street.**



# **Vehicle Control Techniques**

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## **Steering Techniques**

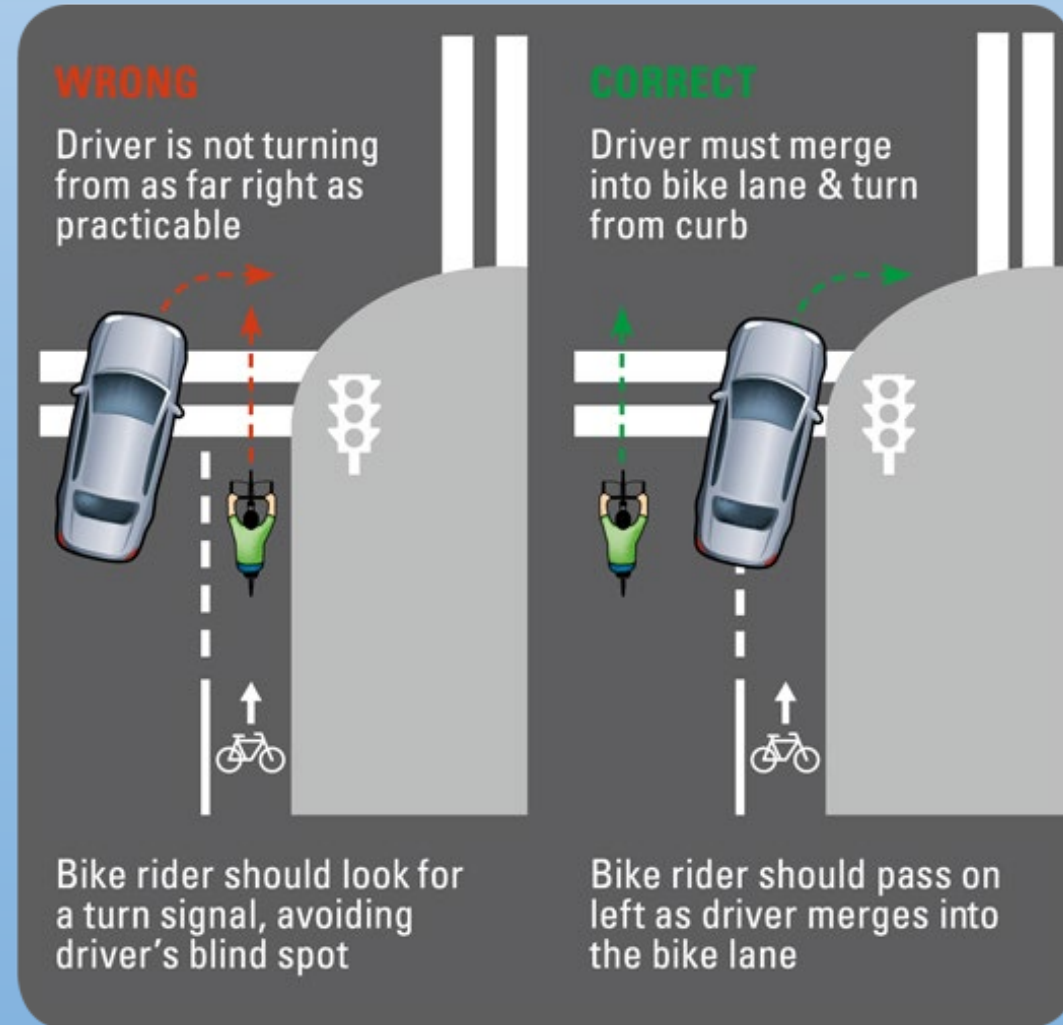
- **Hand Position** - 9:00 and 3:00 position. Your hands now simulate your tires and with 9 & 3, you always know which way your tires are pointing.
- **Turns and curves** - Do not brake or accelerate in the midst of a turn. If you need to slow down, do it before the turn (preferably by letting off the gas and not using the brakes) and accelerate after the turn.
- **Lane position.** Hug the inside curve to give you room to correct a skid.
- **Bike Lane Right Turns.** Use the bike lane as a right turn.

# **Vehicle Control Techniques**

## **Bike Lane Right Turns**

- Minimizes rear-end accidents.
- Reduces traffic jams.
- Increases bicycle safety.
- CA – Up to 200 feet before your turn.
- NV – only after the broken line.

***PLEASE PASS IT ON!***



# **Vehicle Control Techniques**

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## **Skidding Techniques**

1. Point the tires in the direction you want to go. Usually in the same direction as your skid, but not always. *Now you understand why 9 & 3 is critical!*
2. As the car begins to straighten, keep pointing the tires where you want to go. If you fishtail to the other side, you either over steered in the beginning, or did not return to straight soon enough.
3. If possible, DO NOT BRAKE, simply let off the gas. (Remember the weight transfer) If you decide to brake to avoid a head-on collision, be prepared for the airbag to deploy by ensuring nothing is between you and that airbag on the steering wheel.

# **Vehicle Control Techniques**

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## **Speed**

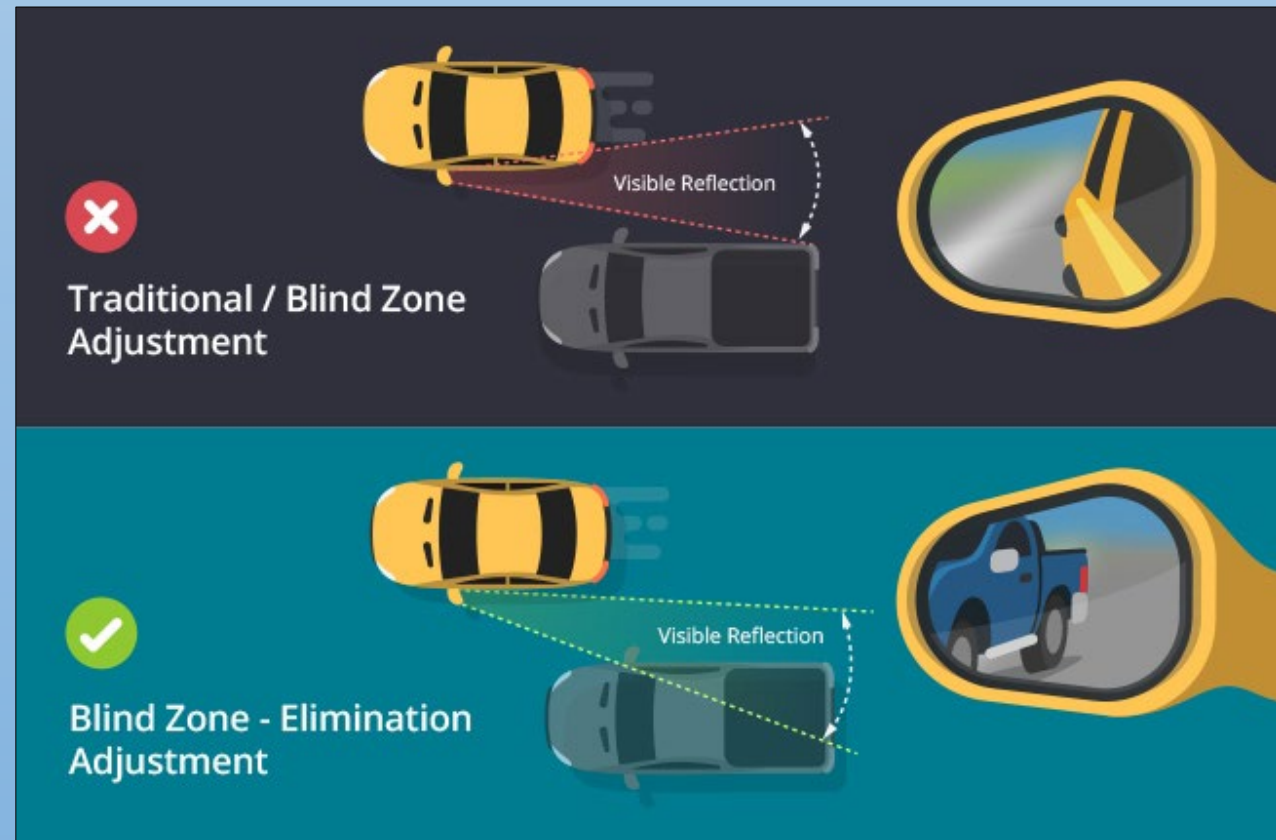
*“Drive slow and enjoy the scenery. Drive fast and become the scenery.”*

- 1. Remember the Basic Speed Law.** Never drive faster than what is safe.
- 2. Do not tailgate.** Do Not Tailgate. DO NOT TAILGATE! 3-7 second rule.
- 3. Assess yellow lights.** Look up at the signal as you exit intersection to confirm you made the right decision. Allow for road conditions.
- 4. No cruise control.**

# Environmental Awareness

## Prepare your vehicle.

- **Side View Mirrors.** Your side view mirrors should already be adjusted to eliminate your blind spot. If you can see the side of your own car, you have them pointed to far inwards and have created a blind spot.



# Environmental Awareness

## Prepare your vehicle.

- **Defrost your windshield.**  
Front, back, recirculate air, AC, and visors.
- **Remove snow and ice,** including your roof. Windshields are extremely brittle.  
NO HOT WATER! De-icer spray.



**Get into the habit of backing into your driveway, parking spots, and pull forward to parking spot ahead of you.**



# Environmental Awareness

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## Recognize and adapt to changing road conditions.

- **CalTrans and NV511 apps.** Set settings to see plow, lights, and signs.



- **Weather.** Weather Channel, OpenSnow, Wunderground, AccuWeather apps.
- **Bridges and Tunnels** are significantly icier than the main road. Watch for shaded areas such as Hwy 50 south of Spooner Summit.
- **High beams** off in fog, snow, and rain.
- **Emergency Flashers** should be turned on if a vehicle behind you is approaching at a higher speed.

# **Environmental Awareness**

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## **Recognize and adapt to changing road conditions.**

- **Pulling over.** Assess how far you can pull over without getting stuck. Turn on Emergency flashers as soon as you decide to pull over. Stay in the car if possible. Stay warm but be aware of possible carbon monoxide, especially if the exhaust pipe is buried in the snow. Conserve fuel. You must pull over in CA if 5 or more cars are behind you.
- **Black ice** is not invisible. Look for the sheen on the road and do not change any direction other than foot off the gas.
- **Snow Plows.** Be cautious when the road was recently plowed. Pass only when the plow has stopped or clearly scooted over for you to pass. There are no state laws that prohibit passing a snowplow BUT BE CAREFUL! Snowplows have wing plow blades that can extend between 2 and 10 feet beyond the width of the truck. (Source - Caltrans)

### **Snow check.**

**Apply the brakes harder than usual on slight downhills to assess snow conditions.**

**Snow check through the day and on various roads and neighborhoods.**

# Environmental Awareness

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Recognize and adapt to changing road conditions.

## Drive Defensively!

- **Be patient.** Don't hate tourists, we love their money. It is not their fault they have no idea how to drive in our winter weather.
- **Watch for incoming downhill cross traffic.** Don't look at the car, look at their wheels. **Look left then right** before entering an intersection.
- **When the road is uphill veering left,** watch for oncoming traffic coming downhill.
- **When waiting at an intersection,** watch for cars from the left making a right turn.



# **Environmental Awareness**

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*When the street only has room for one car,  
who has the right of way...*

(Raise your hand)

- *The car traveling uphill?*
- *The car traveling downhill?*

# **Vehicle Preparedness**

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## **Fluids**

- Radiator antifreeze
- Windshield de-icer fluid. Sold only in Nevada. De-icer spray good to quickly melt frost. Wipe windshield and headlights with Rain-x repellent.

## **Equipment**

- **Windshield wipers.** Trico Ice, Rain-x Weatherbeater or Latitude. Up or Down? I prefer up to avoid a cracked windshield should the wind blow them down. Also weight of snow. Use snow socks for windshield cover.
- **Emergency bag.** *At a minimum* - Traction device, ice scraper, snow shovel, tarp, blanket, gloves, reflective garment, whistle/air horn, reflective triangles, battery jumper/cables, tow strap.

# Winter Driving Skills

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**Understanding Winter Conditions**

**Friction and Traction**

**Vehicle Control Techniques**

**Environmental Awareness**

**Vehicle Preparedness**

**Questions & Answers**



# Videos



**Correcting Skidding on Ice**



**Adjusting your Side View Mirrors**



**Hand on Steering Wheel positions**



**Google Review on Tahoe Driving Academy** 😊

## Chains Required

All vehicles, including those with four-wheel drive or snow tires, should carry chains when traveling during snowy weather. If you don't have chains in your possession, you may not be allowed to proceed.

When highway signs indicate that chains are required, you must stop and install chains or risk being cited and fined. In most cases, there is about one mile between "Chains Required" signs and the final checkpoint. Make sure you pull safely off the roadway to install chains. Do not stop in a traffic lane where you can endanger yourself or others. Watch for pedestrians when approaching chain control areas and slow down as there often are people outside of their vehicles. Chain control areas can change rapidly depending on current weather and road conditions.

The speed limit when chains are required is either 25, 30, or 35 miles per hour. Speed limits are posted at various locations and often enforced by radar.

If you need help, chain installers may be available. Chain installers are not Caltrans employees – they are independent business people who are licensed to install chains. If you choose to use their services, always ask for a receipt that includes the installer's badge number. Chain installers are not allowed to sell or rent chains.

When removing chains, drive beyond the signs reading "End Chain Control." Again, be sure to pull over out of the lanes of traffic where you can safely remove your chains.

## Chain Control Information

- 1 Chains or snow tread tires required. Snow tires must have a tread depth of 6/32" with a "M & S" imprint on the tire's sidewall.
- 2 Chains required on all vehicles except four-wheel drives or all-wheel drives with snow tread tires on all four wheels. Four-wheel drives must carry chains. If you have four-wheel drive – engage it. Refer to vehicles operators manual for correct selection of 4 wheel drive or offroad functions.
- 3 Chains required on all vehicles – no exceptions.  
R-1 and R-2 are the most common chain controls.

## Anticipate Delays

Weather and road conditions can vary rapidly, causing changes in chain control locations. Be aware that even though the highway was open when you began your trip, this could change due to unsafe conditions.

High winds and blowing snow often cause zero visibility conditions. To protect travelers, Caltrans or the GP may hold traffic temporarily until conditions improve.

Spinouts and accidents happen frequently during winter storms. These mishaps can force traffic delays that last for several hours. Heavily traveled routes are particularly vulnerable to such delays due to their high traffic volumes.

Caltrans strives to reduce the frequency and the length of delays on state highways due to spinouts and accidents. During major storms when traffic flow is heavy, Caltrans may meter traffic. By letting fewer vehicles feed into the storm area, accidents and congestion are reduced. Waiting below the snow line is preferable to being caught in a traffic jam during a snow storm. Metering also gives motorists the option of turning around and waiting out the delay in a warm place rather than waiting inside of their cars.

## For The Most Up-To-Date Road Condition Information

Visit: [QuickMap.dot.ca.gov](http://QuickMap.dot.ca.gov)

## Check Conditions Frequently

### HAR - Road Conditions via Radio

Tune in to Caltrans Highway Advisory Radio (HAR). During storms, Caltrans broadcasts road condition information on low frequency radio transmitters located along some mountain highways. Watch for flashing road signs and tune to the frequency listed. Transmissions are brief, but informative and are updated regularly.

### CHIN - Road Conditions via Phone or Internet

To help keep you informed of changing conditions, Caltrans operates the Caltrans Highway Information Network (CHIN), providing up-to-date information on any California highway.

Phone 1-800-427-ROAD (7623)  
or 511 (where available)

Before you leave and as you travel, check road conditions often. This information is also available on the Internet at:

<http://www.dot.ca.gov>

For additional copies of this brochure, contact:

State of California  
Department of Transportation  
Division of Maintenance  
1120 N Street, MS-31  
Sacramento, CA 95814  
Telephone 916-654-4470

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. For California Relay Service TTY please call 711.

G-0094

# Weathering the Storm

## Winter Driving Tips



"We're Here  
To Get You  
There"





Winter can be a beautiful time of year.

However, it can also bring a variety of inclement driving conditions to California's roadways.

The California Department of Transportation (Caltrans) wants you to get where you're going safely. This pamphlet offers information to help make your winter driving experience safe and pleasant.

## Winterize Your Vehicle

Check the brakes, windshield wipers, exhaust system and heater/defroster to make sure they are in good working condition.

- **ANTIFREEZE** – Check your radiator fluid level and add antifreeze/coolant as needed.
- **WINDSHIELD WIPERS** – Wiper blades should be replaced, if needed. Adding a winter formula windshield wiper fluid will help deice your windshield.
- **TIRES** – Make sure your tires are properly inflated and that the tread is in good condition.
- **CHAINS** – Always carry chains. They should be the correct size for your tires and in proper working order. Chains must be installed on drive wheels, so you need to know if your vehicle has front or rear wheel drive. When the term "chains" is used here, it means any "tire traction device" (not necessarily link type chain) which meets the requirements of CA Vehicle Code Section 605.

## Be Prepared

Winter weather is never predictable. Expect the worst conditions and be prepared by having an emergency kit in your car. The following items may be of use should you find yourself stranded during a snowstorm:

- **FLASHLIGHT** – With extra batteries.
- **BLANKETS, EXTRA CLOTHING, WATER & SNACKS** – It is a good idea to take along water, food, warm blankets and extra clothing. A lengthy delay will make you glad you have them.
- **CLEAN, DRY TOWEL** – To dry your hands after installing snow chains.
- **GLOVES** – Helpful to protect hands from the cold when installing chains.
- **ICE SCRAPER/DECER** – To keep windows clear of snow/ice for improved visibility.
- **SHOVEL** – To free your vehicle should you get snowed in.
- **BROOM** – A small broom or brush can be used to clear snow off your vehicle.
- **SPARE KEY** – Many motorists have locked themselves out of their cars when stopping to put on tire chains.
- **SAND/KITTY LITTER** – Sand or kitty litter can help with traction should you get stuck in mud or snow.

## Winter Driving Tips

**ALLOW ENOUGH TIME** – Trips to the mountains can take longer during winter, especially if you encounter storm conditions or icy roads. Get an early start and allow plenty of time to get to your destination.

**KEEP FUEL TANK FULL** – It may be necessary to change routes or turn back during a bad storm. You may also be in for a long delay if bad weather forces a highway closure.

**SLOW DOWN AND USE THE SEAT BELT** – Most winter accidents are the result of driving too fast for the conditions. Avoid speeding and buckle up for safety. Use low gears to slow your vehicle – avoid using the brakes if possible. Remember that having four-wheel drive or all-wheel drive improves climbing traction but does not help to stop the vehicle.

**TURN OFF CRUISE CONTROL** – Don't use cruise control when driving in snow or wet road conditions. Maintaining control of your vehicle will allow you to react to sudden changes.

**DON'T PANIC** – If vehicle begins to slide while driving on snow or ice, slowly take your foot off the gas pedal, do not use your brakes, and steer your vehicle in the direction you wish to travel. If you must use brakes, gently pump the brake pedal and do not allow them to lock up. If your vehicle is equipped with anti-lock (ABS) brakes, apply firm, steady pressure without pumping.

**BLACK ICE** – The temperature does not have to be below freezing in order for ice to form on road surfaces. Ice can form any time the air temperature drops below 40 degrees, especially when it's windy. Bridges and underpasses can be especially hazardous. Any low or shaded area surrounded by landscaping, or with a nearby source of water, can also have icy spots. Black ice is nearly invisible. Drive cautiously.

**BE OBSERVANT** – Visibility is often limited during poor weather. Slow down and keep a constant watch for other vehicles. When following snow removal equipment, maintain a safe distance and watch for ice and other debris. Do not pass snow removal equipment unless the operator directs you to.

**KEEP WINDOWS CLEAR** – Passing vehicles can spray your car with mud and slush. Utilize your vehicle's windshield wipers and defroster to keep your windshield clear. When driving through falling snow, turn on headlights for extra visibility.

**STAY WITH YOUR VEHICLE** – When stalled, stay with the vehicle and try to conserve fuel while maintaining warmth. Put flashers on, and be aware of possible exhaust or carbon monoxide problems.

**FOG** – Reduce speed, use headlights on low-beam along with fog lights (if equipped) as high beam will cause light to reflect off the fog or snow and can further impair driver's ability to see. Stay to the right using the white edge line next to the shoulder, away from the center of the road as oncoming traffic can't see either. Never stop in the road. If you decide visibility is not enough to drive, pull off the travel way when safely able to do so.

**FLOOD** – Avoid driving through deep water. Turn around and find another route. Be aware if attempting to drive through deep water, it may cause the engine to stall. The average automobile can be swept off the road in 12 inches of moving water. If you become stalled in deep water and you attempted to restart the engine, it may cause irreparable damage to the engine. Watch for items traveling downstream as they can create additional hazards. Remember to test the brakes, as wet brakes have lost stopping power and need to be dried out.

**SLOW FOR THE CONE ZONE** – To stay safe in work zones, always be alert, never use mobile phones, and avoid changing lanes and crowding other drivers. Obey posted speed limits, merge when directed to do so, and be patient. Always slow for the cone zone!

**'MOVE OVER' LAW** – California state law requires motorists to slow down, and if safe, move over when a Caltrans or emergency vehicle is flashing warning lights. This protects the safety of workers, who face danger from fast moving traffic. Violating the law could also cost you a \$50 fine, so slow down or move over!

# Tahoe Driving Academy



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