

Be Ready, Be Safe, Be Responsible

XII. Adverse Driving Conditions

B. Driving in Bad Weather-Prevention, Response Countermeasures for Driving in, Rain and Snow

Lessons and Hints to Work With Your New Teen Driver
Part 12



ADVERSE CONDITIONS THAT AFFECT SAFE DRIVING

Controlling What You Have No Control Over

DO have control over

- Decisions that you can make to reduce the risk:
 - Be aware of changing conditions
 - Postpone, cancel trip
 - Leave earlier
 - Change route
- Be prepared for increased risk
 - Vehicle condition pre-check (II. Pre-Entry Procedures (PPT.))
 - tires, lights, wipers, fluid, fuel
 - potential for delays, stuck in traffic, etc.

Be Ready, Be Safe, Be Responsible

DANGEROUS CONDITIONS

Countermeasures for Driving in, Rain and Snow

- Reduce speed according to visibility and road conditions, but do not stop in travel lane or on shoulder near road
 - For blizzard or white-out conditions, look for exit from highway and turn on radio for weather report.
 - If impossible to leave highway, stop beyond end outside of guardrail.
- Turn headlights to low beams
- Turn on emergency flashers

Be Ready, Be Safe, Be Responsible

SKIDS

Skidding is the lack steering, braking, and acceleration control due to the loss of traction /rolling friction between the tires and road surface.

Roadway and Weather Conditions

- Ice-black ice, glare ice, freezing rain, sleet
- Snow- blizzard, squalls, blowing snow
- Slush
- Water*-rain, flooding, ponding = Hydroplaning
- Oil
- Mud
- Wet leaves
- Sand, gravel, anti-skid material on dry roads.

When combined with:

Driver Error

Driving too fast for conditions

Sudden steering

Sudden braking

Sudden accelerations

Driver Error + Road Conditions = SKIDS









DANGEROUS CONDITIONS

Countermeasures for Driving in Rain and Snow

WINTER

Be Ready, Be Safe, Be Responsible



STOP, THINK, AND GO:
DECISION MAKING
RISK MANAGEMENT

- Is my car equipped for the weather?
- Can I make this trip later?
- What would be the safest route?
- Am I prepared for emergencies?

Be Ready, Be Safe, Be Responsible

VEHICLE READINESS

Visibility

Windshield/Windows

- *Wipers* - Good working order
- *Washer Fluid*
 - For low temperatures – 0°
 - DO NOT use only water
 - *Ice Scraper* - A necessity

Engine and Operating Systems

- Hoses
- *Anti-freeze/Coolant*
 - Amount level
 - Mixture 50/50-DO NOT use only water
- *Battery*–
 - Age of battery

- Freezing weather weakens battery for starting

- *Belts* – condition

Important for:

- Alternator/charging system/electrical systems,
- Steering, lights, pumps

- *Oil*

Traction

- *Tires* –
 - Check treads
 - Pressure

Safety-**carbon monoxide poisoning**

- Exhaust system
 - check for leaks
 - DO NOT run in enclosed area

Be Ready, Be Safe, Be Responsible



WINTER CAR KIT

- SNOW BRUSH W/ SCRAPER
- FLASHLIGHT W/ BATTERIES
- BLANKET
- EXTRA WINTER CLOTHING
- SNACK BARS, WATER
- SMALL SHOVEL
- SACK OF SAND OR KITTY LITTER
- JUMPER CABLES
- FLARES OR REFLECTORS
- WINDSHIELD WASHER FLUID

Be Ready, Be Safe, Be Responsible

CLEAN-OFF

CLEAN OFF VEHICLE COMPLETELY!

- **CLEAN ALL LIGHTS**
- **SCRAPE ALL WINDOWS AND MIRRORS**
- **SWEEP ALL THE SNOW/ ICE OFF THE VEHICLE***

***REQUIRED BY PA LAW**

**Good all-around visibility is
important!!!!**

Be Ready, Be Safe, Be Responsible

WARM-UP

Warm up –

- Do not race the engine
- Do not idle for a very long time
- DO NOT idle in garage or enclosed area because of:

CARBON MONOXIDE

Attributes/Effects

1. Odorless & Colorless
2. Nausea, Headache, Dizziness
3. Causes Drowsiness
4. **CAN BE FATAL**

Be Ready, Be Safe, Be Responsible

WINTER DRIVING TECHNIQUES

Reduced speed

- Increases ability to recognize and avoid the hazard quickly enough by:
 - Gently steering
 - Decelerating
 - Gently braking or stopping

Turn signals sooner.

- Gives other drivers more time to react.

TAP your brakes

- Warns of intention to stop.

Increase following distance from the vehicle ahead.

Be aware of space from vehicles following you

Be Ready, Be Safe, Be Responsible



**FRESH SNOW CAN
HIDE ICY ROADS**

BLACK ICE

DANGEROUS BECAUSE YOU CAN'T SEE IT!

COMMON AREAS YOU FIND IT:

- 1. Bridges/Overpasses/Underpasses**
- 2. Shaded areas.**



Black Ice

Black ice tricks drivers. Its shine fools them into thinking it's water on the road. This shiny ice surface is one of the most slippery road conditions. Condensation, such as dew, freezes when temperatures reach 32 degrees or below. This forms an extra-thin layer of ice on the road.

Black ice is likely to form first under bridges and overpasses, in shady spots and at intersections.

Be Ready, Be Safe, Be Responsible

REACTION BLACK ICE

- DO NOT PANIC!
- MAKE NO SUDDEN CHANGES IN SPEED OR DIRECTION
- EASE OFF ACCELERATOR
- STEER IN DIRECTION THAT THE REAR OF THE VEHICLE IS SKIDDING



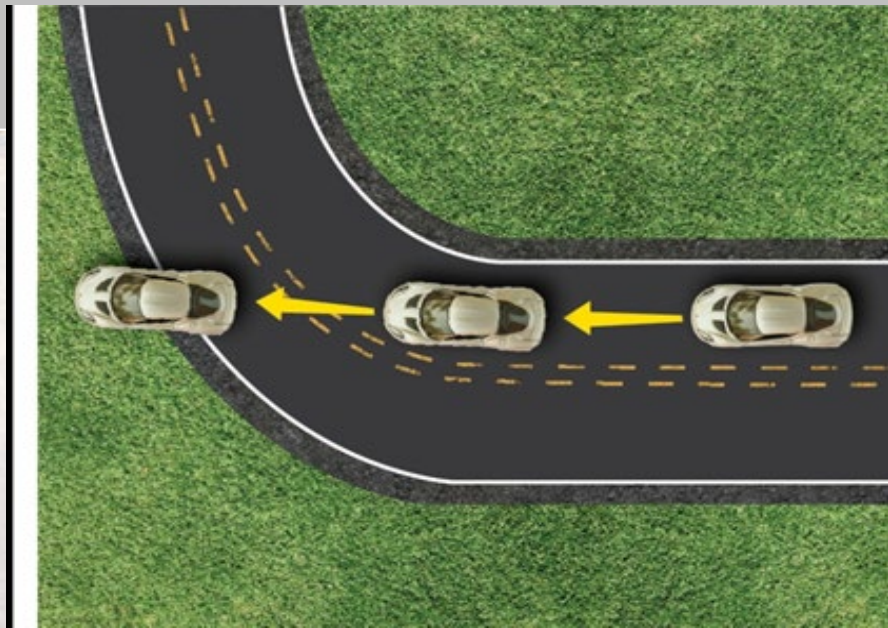
Be Ready, Be Safe, Be Responsible

SKID RESPONSE

If you begin to skid, take the following actions:

1. Front end skids/Understeer -

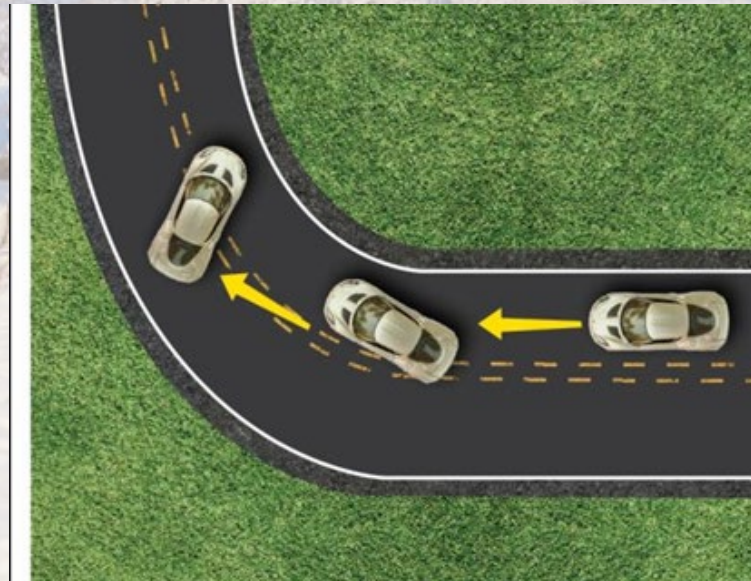
Release the brake and let the front wheels roll freely to regain traction and steering control.



SKID RESPONSE

2. Rear end skids / Oversteer-

Take foot off the accelerator and turn wheels in the direction that the rear of the vehicle is skidding.



SKID RESPONSE

Recognize that you are in a skid.

- Detect when the front of your vehicle changes from your intended path.

Respond by:

- **Releasing the brake or accelerator**
- **Look and steer where you want the vehicle to go!**
(open, safe path of travel)



SKID RESPONSE

Counter-steering

Counter-steering means steering in the direction you want the front of the vehicle to go, toward your intended path of travel.

When you counter-steer, straighten the wheels as soon as you feel the rear of the vehicle begin to realign with your intended path of travel.



BRAKING RESPONSE

What is ABS?

- Each wheel is individually monitored by computer,
- does not allow the wheels to lock-up and slide when the brakes are applied.
- Allows for steering and full braking

WHAT ABS DOESN'T DO

- It DOESN'T shorten reaction distance or braking distance.
- It DOESN'T defy the laws of physics.
- It DOESN'T improve action time.
- It DOESN'T change the driver's response to recover from a skid.

TO MAKE AN EMERGENCY STOP ON A SLIPPERY ROAD...

Anti-lock Brakes (ABS)



Press down and hold



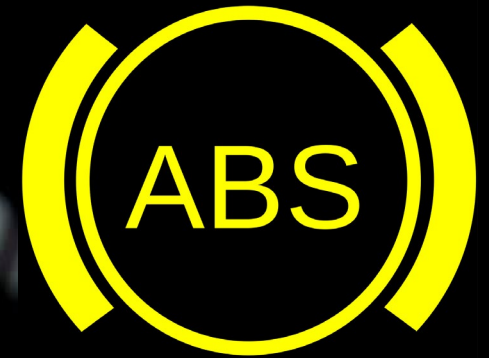
DO NOT PUMP BRAKES



The ABS will pump for you.

ABS MALFUNCTION

- ABS Symbol on Dash Panel
- Conventional Brakes take over



The background features a large, semi-transparent image of a car tire. At the bottom of the frame, there are several overlapping, wavy, translucent shapes in shades of green, yellow, and orange, creating a sense of motion or energy.

To make an emergency stop
on a slippery road...

**With Regular Brakes -
Pump the Brake Pedal.**

If your vehicle is stuck:

- **Shift to low gear- the transmission power gear**
- **Keep the front wheels pointed straight ahead so the vehicle can move in a straight line.**
 - helps prevent “plowing” with tires
 - helps prevent digging wheels in deeper
- **Apply gas slowly and steadily.**
- **DO NOT spin wheels**
- **Try shutting of traction control**
- **May need to try rocking the vehicle-see owner manual**
 - **If you can't go forward, try to back out and steer in the tracks the vehicle has just made.**





RAIN HAZARDS

Hydroplaning-a vehicle sliding uncontrollably on a wet road

Hydroplaning

Caused by:

- Wet conditions
 - water on the road
 - excessive speed
 - under-inflated tires
 - low tire tread
 - any combination of the above
- =tires lose contact with the roadway and lose traction.
1/10th inch of water speeds 35 mph and above



Prevention

Reduce Driver Error

- Driving Too Fast For Conditions
 - Slow Down
- Sudden, Hard Braking, Steering, Acceleration
 - Smooth actions
- Tire Maintenance

Reaction

Don't Panic

- Identify direction of skid
- Release accelerator or brake
- Counter steer gently
- Continue smooth steering to open path as needed

Be Ready, Be Safe, Be Responsible

Next: Dealing with Vehicle Failure Emergencies

