

Driving in Fog,
Rain and Wind
for School Bus Drivers
Reference Guide and Test

Introduction

Every school year bus drivers are faced with adverse driving conditions. Pounding rain storms, wet slippery roads, high winds and extremely dense fog make driving a vehicle so large quite a challenge. The video covers these challenges by giving bus drivers helpful and innovative techniques that can be utilized when driving in extreme weather conditions

The video is divided into 5 separate sections

PART 1: Proper Vehicle Maintenance / Pre Trip Inspection

PART 2: Driving in Dense Fog

PART 3: Driving in Heavy Rain

PART 4: Driving in High Winds

PART 5: Additional Safety Issues

Part 1: Proper Vehicle Maintenance / Pre Trip Inspection

When driving in rain, fog, or windy conditions, keep in mind the importance of the pre trip inspection and proper vehicle maintenance. Whenever weather conditions are bad, bus drivers need to make sure everything on the bus is working properly.

1) Windshield Wipers:

- a)** The windshield wipers on the bus must be in good condition.
- b)** wiper blades should press against the windshield hard enough to effectively wipe away rain.
- c)** Check the windshield washer reservoir and make sure it works and is full.
- d)** If windshield wipers cause streaks or smears, the blades must be replaced immediately. Streaks and smears caused from worn wiper blades can inhibit a drivers ability to see clearly.

2) Heater and Defroster:

- a) Check the bus's defrosting and heating equipment. Make sure they both work properly and that you know how to safely operate them.
- b) Check all of the vents for the defroster to make sure no part of the windshield will fog up while driving.

3) Lights, Reflectors, Mirrors and Windows:

- a) Be sure all windows and mirrors are cleared of debris and clean before driving.
- b) Make sure that mirrors are properly adjusted.
- c) Lights, Reflectors and Turn signals are especially important during bad weather. Be sure all turn signals, reflectors and lights on the bus are in good working condition.
- d) If the bus is equipped with fog or strobe lights, make sure they are working and are free of debris.
- e) Check all lights and reflectors often and keep them clean during bad weather.

4) Tires:

- a) Make sure all tires are properly inflated with no bulges or defects present.
- b) Check all lug-nuts and make sure they are present and tightened.
- c) Take the time to check the tread on tires. Tires must provide traction to drive safely over wet pavement. Tires should have sufficient tread with at least 4/32 inch tread depth in every major groove of the front tire and 2/32 inch on other tires.

5) Additional Items:

- a) Check the interior lights of the bus and make sure all toggle switches are working.
- b) Carry extra rags for moisture buildup on windows and mirrors.

6) If you have any questions or concerns about the tires, wipers, or any other safety

issue concerning your bus, be sure to bring it up to your supervisor or have a mechanic take a look. When driving in poor weather conditions, take the necessary steps to insure the bus has been properly maintained. Each step is as critical as the next. The key to keeping students safe is to maintain your bus thoroughly.

Part 2: Driving in Dense Fog.

Fog is condensed water vapor in cloud-like masses generally lying close to the ground and limiting visibility. Fog can occur at anytime of day or night. Fog on highways and freeways can be extremely dangerous due to the speeds being traveled. Fog is very often unexpected and visibility can deteriorate quickly.

- 1) Always be on the look out for foggy conditions and be ready to act if you enter an area of dense fog.

- 2) If you are about to enter an area of fog, be ready to reduce speed ahead of time. *Never assume that the fog will thin out after entering it.*

- 3) Many highways, freeways, and surface streets have flashing **fog-related warning signs** when entering an area known for its foggy conditions. Be sure to obey all warning signs. Realize that if a flashing warning sign is hard to read in dense fog, non flashing signs are near impossible to see. Maintaining focus and familiarizing yourself with your route can help you identify signs.

- 4) Whenever driving in foggy conditions, be sure that your **headlights** are on and set to low beam, and use the vehicles fog lights or strobe lights if available. High headlight beams reflect off of fog. The reason for keeping the headlights on low beam is to reduce the amount of reflection bouncing off the fog. And just because you remembered to engage your headlights does not mean other drivers around the bus

have done the same. Be aware and stay alert for other drivers who may have forgotten to turn on their lights. Some school districts make it a policy to engage their four way hazards in heavy fog. Others do not. Be sure to follow the policies set forth by your school district. And if you have any questions, ask your supervisor regarding this important issue.

5) A method that you may want to incorporate when driving in dense fog is to pick out identifiable landmarks such as signs, lights, or other noticeable objects, that may be a reference close to the road you are traveling on. This will help to identify where you are located on your route.

6) Be especially alert to vehicles on the side of the roadway in foggy conditions.

7) Do not rely on vehicles you are following to dictate your driving. The vehicle in front may not be on the right side of the road at all.

8) A good technique when driving in heavy fog is to follow the fog line, which is a white line running along the right side of the road. The fog line should be your primary reference when driving in dense fog. If no fog lines are present, use another ground reference, such as highway reflectors or road separators.

Following Distances

9) Tail lights are extremely faint and hard to see in heavy fog. The following distance for a bus should be a far enough distance away to recognize vehicles tail lights in front of the bus if faced with sudden stops or braking. Ultimately, it will be driving at slow speeds and keeping a safe distance from vehicles in front of the bus that will ensure safer driving conditions. The vehicle you are driving takes longer to slow down, so do not ever follow a vehicle too closely.

10) If the area you are driving in is so foggy that it reduces your visibility to a point that would be deemed unsafe to continue driving, be sure to:

- a) Pull over to a safe area
- b) Turn off all lights on the bus (this is so motorists approaching the bus do not try and follow it.)
- c) Contact dispatch and try and wait it out.

The best option in extremely low visibility is to wait it out. It is better to get students to school later as opposed to taking a risk.

11) Making turns or navigating curves in dense fog can be tricky. Fog can get so thick, it makes it hard to see how the road may curve ahead of you. A good technique to use when driving around curves is to:

- a) Use the roadside fog lines as your guide to determine how the road ahead may curve.
- b) If there are no guide lines present, use another road reference such as a double yellow line or white striped lines.
- c) Honk the horn when driving around curves in heavy fog. This will give oncoming motorist a heads up.

12) Passing vehicles in dense fog is **highly discouraged** in a school bus. Try to avoid passing unless it is absolutely necessary to do so.

13) When at a stop light, stop sign or intersection, you can rely on your other senses as well. **Listen for traffic** by opening the drivers window and service door.

14) Implement a fog delay schedule, since fog can lift at anytime.

15) The bottom line is to drive at a safe speed. Drive slowly. Be alert and ready to act. Make sure you maintain adequate following distances to give yourself time to react to

any situation that may come up unexpectedly.

Part 3: Driving in Rain

1) Driving in rain presents many challenges for school bus drivers. What may start out as a light sprinkle, can rapidly increase to a heavy rain storm in a matter of minutes.

2) Use your low beam **headlights** the same as you would when driving in foggy conditions.

a) Headlights should be on low beam to reduce the reflection of the rainwater.

b) Any time your windshield wipers are engaged, your headlights should be engaged as well.

Following Distances

3) Be aware of other drivers on the road when driving in rain.

a) Be sure to keep a safe distance between you and other vehicles to give yourself time to react to any traffic or sudden stops.

b) Following distances on wet roadways should be **3 to 9 times greater than the distance on a dry road.**

c) Improve driving safety by slowing down under these conditions and by increasing the following distance.

d) Keep a safe following distance to minimize back spray from other vehicles.

4) **Signal your turns ahead of time** to give other drivers increased warning. **Brake early when slowing** behind another vehicle or coming to an intersection.

5) When **driving through standing water**, your brakes will get wet. Water on the brakes are dangerous because it can cause the brakes to be weak, to apply unevenly, or to grab. This can cause a lack of braking power as well as wheel lockups and pulling

the vehicle to one side or the other. Avoid driving through any standing water if possible. However, if you cannot avoid it, you should:

- a) Slow down on approach and place the transmission in a low gear.
- b) Gently apply the brakes. This presses linings against brake drums or discs and keeps mud, silt and water from getting in.
- c) Increase the engine's rpm and cross the water while keeping light pressure on the brakes.
- d) When you get out of the water, maintain light pressure on the brakes for a short distance to heat them up and dry them out.
- e) Be careful when drying out the brakes. If done too long, this can cause the brakes to overheat.
- f) Make a test stop when it is safe to do so. If brakes still feel wet, dry them out further by slightly applying brakes as mentioned.

Hydroplaning

6) In heavy rain, your vehicle's tires may begin to actually ride on the water that is lying on top of the road pavement. This is called "hydroplaning" and it can lead to complete loss of traction and steering control. Hydroplaning usually occurs at higher speeds, but it also can occur if your vehicle's tire tread is worn or improperly inflated. When there is heavy rain, it is always wise to drive more slowly. If you experience hydroplaning while driving the bus, the best step of action is to:

- a) Gently ease off the gas to slow down the bus until it makes contact with the pavement again.
- b) Never, under any circumstances, should you hit the brake during a hydroplane. This would simply lead to even less traction and steering control.
- c) Good tires with deep tread can help prevent hydroplaning.

Be on the look out for water running across the roadway so you can be prepared to take action.

- 7) Slow down early and never slam on the brakes when approaching intersections, downgrades or curves. When going around curves, be sure not to go too fast or make sudden movements with the steering wheel. This could cause a bus to skid.
- 8) Make gradual and smooth motions when steering and braking in rainy weather.
- 9) When you start to pull away from a stopped position, be sure to do so smoothly. This will help prevent the tires on the bus from spinning out.
- 10) Avoid changing lanes in heavy rains and only do so if necessary. When changing lanes, give yourself enough time to move into the next lane safely.
- 11) When driving in rain, **safe speed and following distances** are the most important issues to keep in mind. **Drive slowly.** You must stay focused and be aware of everything around the bus to safely get students to their destinations. If it starts to rain so heavily that you feel it may be a safety concern, don't take any risks. Find a safe place far enough away from the roadway to stop the bus, alert dispatch and wait it out.

Part 4: Driving in High Winds

- 1) Think of a school bus as being a moving billboard 40 feet long and 10 feet high. The side of a school bus acts like a sail on a sailboat and strong winds can push the bus sideways. Wind can even move the school bus off the road or, in extreme conditions, tip it over.
- 2) Wind can occur at anytime of night or day, in sunny conditions and stormy conditions.
- 3) Keep an eye out and obey all **high wind warning signs**. Especially when there are

certain areas that may be known for their windy conditions. These signs warn motorists to proceed with caution.

Steering Techniques

- 4) One of the most important skills for a school bus driver is **safe steering techniques**.
 - a) It is important that you keep a firm grip on the steering wheel at all times.
 - b) Never attempt to drive with one hand. When conditions are windy, you will have to be constantly making slight corrections while steering to make sure the bus stays in its lane.

- 5) **Speed** is also a major factor when driving in high winds. Driving at slow speeds can significantly reduce the chance of being pushed into another lane.
 - a) If you are caught in strong winds, you should slow down to lessen the effect of the wind.
 - b) In extremely high gusts, pull off the roadway and wait. Contact your dispatcher to get more information on wind conditions.
 - c) Follow state and district procedures for driving in windy conditions.

- 6) Stay alert for natural windbreaks and tunnel exits where sudden changes of wind pressure exist. When in a tunnel or overhang, there is brief relief from the high winds. But the moment you exit those areas, you can be hit with a high gust. Try to anticipate the wind ahead and be prepared to steer accordingly.

- 7) Be mindful of vehicles surrounding the bus. Wind gusts can push the bus out of its lane and you have to be mindful of the bus's rear end shifting.

- 8) When traveling on freeways or highways with multiple lanes, try to position the bus in a lane where it would not be completely surrounded by other vehicles.

9) You can anticipate the direction of wind in rainy conditions by observing the back spray of vehicles traveling in front of the bus.

Part 5: Additional Safety Issues

1) Mirrors may be limited in their use. For example: When it is raining extremely hard, water drops may build up on your window as well as the mirror that you are trying to look into. Maintain focus and still rely on your mirrors although the view may be slightly diminished.

2) Maintain consistent times when picking up students. Adjust your time and begin your driving route early whenever weather conditions are poor. Students will be waiting for their bus, and if it is not on time you it would be unfair to make them wait in cold, wet weather.

In the video, we supplied information and techniques for driving in poor weather conditions. It is your job to apply them to every facet of driving in bad weather conditions. Stay focused. And always keep in mind the precious cargo you are transporting.

Test Questions

1) Tread depth on the front tires of the bus should be at _____ tread depth.

- a) 2/32 inch
- b) 4/32 inch
- c) 6/32 inch

2) When driving in dense fog it is recommended that you have your headlights set to the high-beam position.

TRUE or FALSE

3) When driving in heavy fog it is recommended that you follow the tail lights in front of the bus to help identify where the road is.

TRUE or FALSE

4) If you come to a stop sign or intersection in heavy fog; a good technique is to _____

- a) Get through it as quick as possible
- b) Honk the horn and wait for a response back
- c) Open the drivers window and service door
- d) None of the above

5) Anytime windshield wipers are on, the headlights should be on as well.

TRUE or FALSE

6) The following distance on wet roadways should be _____

- a) Slightly further than on dry roads
- b) 2 times greater than on dry roads
- c) 3-9 times greater than on dry roads
- d) None of the above

7) When brakes get wet, you can dry them by maintaining light pressure on them while slowly accelerating.

TRUE or FALSE

8) If the bus starts to hydroplane, hit the brakes immediately.

TRUE or FALSE

9) A school bus driver does not have to worry about driving in windy conditions because the bus is so heavy.

TRUE or FALSE

10) When driving in poor weather conditions the best option is to _____

- a) Slow down
- b) Increase following distances
- c) Wait it out
- d) All of the above

Answer Key

1) b

2) FALSE

3) FALSE

4) c

5) TRUE

6) c

7) TRUE

8) FALSE

9) FALSE

10) d