

Night Driving for School Bus Drivers

Reference Guide and Test

Introduction:

One thing is clear about night driving, it's more difficult than driving during the day. It doesn't matter whether you're driving a car or a bus. Night driving simply demands a different set of skills. During the course of the video many of these skills were demonstrated. Our goal was simple. We wanted to demonstrate to you, the bus drivers, basic night driving skills. By applying these skills successfully, school bus drivers will lessen the chances of accidents while driving at night.

The video and this guide are divided into 5 separate sections. Each section will address a major night driving issue.

- Part One - Introduction to Night Driving
- Part Two - Night Blindness
- Part Three - Pre Trip Inspection
- Part Four - Night Visibility
- Part Five - Mirror and Other Safety Precautions

Part One - Introduction to Night Driving

The National Safety Council has said that their studies show it is 3 times more likely that a fatal accident will occur at night than during the day. Therefore, all drivers must realize that night driving requires more concentration, more focus and the need to understand these issues clearly.

Here are some other points the National Safety Council would like you to remember.

- 1) 90% of a school bus driver's reaction time results from what they see. This is severely curtailed at night. This is important to remember because this very obvious concept will have enormous influence on what a bus driver can, and can't, do while driving at night.
- 2) Fatigue is another factor. Drowsiness is caused because all of us are more alert during the day than at night. Our biorhythms are more in sync during the daylight hours.
- 3) Some of the preventative measures school bus drivers should implement at night include drinking a cup of coffee or tea before you start driving in the evening. Remember evening tells our bodies that it's time to relax and get ready to sleep. Keep in mind that during the day you are more likely to stay in a focused, autopilot mode, but at night this autopilot syndrome may result in your nodding off. Also keep adequate circulation and lower temperatures. Open the driver's compartment window and turn on the fan. This will keep you from slipping into a warm, drowsy stupor. Too

many accidents have occurred when a driver falls asleep at the wheel.

All of these introductory concepts play a vital role in understanding night driving safety issues.

Part Two - Night Blindness

Night blindness is one of the most important issues for a school bus driver to understand. Night blindness is how well our eyes adapt to the dark. An example of this is walking into a darkened room, like a movie theater. After a while your eyes adjust to the dark and you are able to see fairly well. But there is another consideration to keep in mind. Every individual reacts differently to night blindness. One person's eyes will adjust almost immediately to darkness while another person's eyes may take 15 minutes or more to adjust to the same condition. And in some cases an individual's eyes will simply not adjust to the darkness. The bottom line is to experiment. Find out how long it will take your eyes to adjust. The point is that school bus drivers must be aware that when driving at night they will experience very low light levels. Ultimately you have to think of the safety of your students.

Some of the telltale physical signs of night blindness include:

- 1) The inability of the driver to identify objects within the night driving environment.
- 2) When a driver isn't able to drive at safe speeds for the night driving conditions they are experiencing. For example, the driver has trouble driving with the flow of traffic. Or the driver has trouble distinguishing between driving slow or fast in traffic.
- 3) When a driver doesn't clearly recognize the lane they are driving in. This is a severe traffic hazard.

If you are unsure of your night blindness condition, contact your supervisor and they will work with you to determine the best course of action. Remember, night blindness is a physical condition. It's NOT a reflection of a driver's ability. It's important for school bus drivers to know their susceptibility to night blindness and to know how long it takes their eyes to adjust to night driving conditions.

Part Three - Pre Trip Inspection for Night Driving

The pre trip inspection for night driving covers the same items that you inspect during the day. However, particular attention must be placed on the windshield, the mirrors and the headlights. All three of these items are critical to the safety of the bus during night driving. Windshields should always be free of debris or dirt. This is critical at night because a dirty windshield will cut down on the driver's ability to see objects clearly. Take the time during your pre trip inspection to properly clean the windows.

The same holds true for mirrors. Even when clean, it's harder to see objects clearly at night versus during the day. So, take the time during your night pre trip to make sure your mirrors are clean and free of debris.

The headlights on the bus, during night driving, are your eyes. Without them you are blind. Increase your chances of being able to see objects clearly by taking the time to clean your headlights properly. Do the same with your turn indicators so other motorists will clearly see when they are activated. An important issue for the night pre trip inspection is familiarity with the switches that control the lights and other bus functions.

There are many reasons this is a crucial element of night driving. During the day, if a driver needs to activate switches, all they have to do is glance down at the control panel and hit the correct switch. But at night it becomes much more difficult to turn on the correct switch when there is no light to see which one you're reaching for. This becomes an important safety issue when the driver can't find the right switch. The driver may glance down at the panel, trying to find the right switch. When they take their eyes off the road they run the risk of losing control of the bus. The way to avoid this situation is to familiarize yourself with each switch on the panel.

In the first example from the video, it's a cold and snowy night. The driver needs to activate the heater and defroster. The driver must not take her eyes off the icy road. She knew where the switches were located on the panel and never had to take her attention from the dangerous road conditions.

In the second example, during daylight hours the driver wanted to turn on the fan inside the stuffy bus. She glanced down at the panel and quickly found the switch. When she tried to do the same thing again while driving at night, she was uncertain of the location of the switch she was looking for. She fumbled around trying to find it. She instead activated the dome light by accident and nearly blinded herself.

The message is simple. Know by feel and memory the configuration of the switches on the control panel inside your school bus. The pre trip inspection of the school bus before driving at night is critical to the safety of students, the public and the driver. Make sure you are up to speed on these procedures.

Part Four - Night Visibility and Driving Techniques

Driving at night obviously limits your visibility. Unlike daylight driving, night driving limits the bus driver to what their headlights can illuminate. In addition to this, there are several other night driving concepts that school bus drivers must be aware of. In this section we will be addressing these issues.

One of the most common problems that drivers experience is driving beyond their headlights. Exactly what this means is explained in the examples from the video.

In the video demonstration, the driver was using her high beams on a dimly lit back country road. The high beams illuminate the area in front of the bus for about 500 feet. In order to safely drive within her headlights the driver must be able to stop her bus within the 500 foot path her

high beams are illuminating.

In the next example the bus driver was driving with her low beams on. The low beams on her bus illuminated the area in front of her for approximately 150 feet. This means the driver will have to be able to stop her school bus within the 150 feet her low beams are illuminating.

In both of the examples the drivers were driving safely within their headlights. In order to drive safely within their headlights, drivers must reduce their speed. For instance, if your low beams are on you must drive slower because you have a shorter distance of visibility. Conversely, if your high beams are on you will be able to drive at a higher rate of speed because you have a larger illuminated area with greater visibility. The key concept here is to reduce your speed so that you don't drive beyond your headlights. Practice this concept before you begin driving a school bus at night.

You've already heard it dozens of times, but it's worth saying again. Darkness limits your visibility. What you can see is limited to what your headlights allow you to see. This means your ability to judge distances between objects will be severely diminished. During the day you can accurately judge the distance of approaching vehicles. The same situation at night is exponentially more difficult. Your ability to judge distances between objects at night will be drastically diminished. This means that school bus drivers must realize that at night, distant objects might be much closer than they appear.

Another major concern for drivers is the rate of closure. In darkness it's difficult to gauge the rate of deceleration of other vehicles. The video example showed a school bus driver approaching a semi trailer from the rear. From the distance there appears to be plenty of room. But once the bus closed in on the trailer, the bus driver suddenly noticed just how slow the trailer was actually traveling. The bus driver had to firmly brake to avoid an accident. To avoid a situation like this yourself, leave adequate room between the bus and the vehicles you are following. Leave approximately 300 feet following distance from your bus to the traffic in front of you. Keep in mind that the rate of closure between two vehicles at night is hard to judge, err on the side of caution and moderate your speed.

Drivers should be extra cautious when making a turn at an intersection at night because visibility is so limited. When entering the intersection the driver should keep their eyes scanning across the path of travel to identify any relevant clues concerning traffic, pedestrians, bicyclists or anything that might cause an issue.

One of the reasons that reducing your speed plays such a vital role in night driving has to do with the reaction time of the driver. When you get too close a vehicle in front of you, when you drive outside of your headlights or when you enter an intersection at night and don't slow down, your reaction time may not be able to prevent an accident. Your reaction time is fixed and will not change. The only way to improve your reaction time is to reduce your speed and use safe night driving techniques.

For school bus drivers there's a simple adage. When in doubt, dim your lights! You are school bus drivers and politeness towards the public is the rule, not the exception. So, whenever you're driving with your high beams on and you see oncoming traffic, immediately dim your

headlights.

There is also a safety issue to consider. The example in the video showed a driver forgetting to dim his high beams and the oncoming driver was temporarily blinded. An inexperienced driver could easily lose control of their vehicle.

School bus drivers need to concentrate on road signs, even if their visibility is drastically reduced. Signs that show sharp curves, traffic hazards or any other type of impediment must be seen by the driver. Not being able to read information on a sign is not an option.

Night driving encompasses a variety of environments. These include dark, rural roads, freeways, busy city streets and suburbs just to name a few. Each one of these environments presents different types of visibility issues. Be aware of your environment and alter your driving methods to meet those challenges.

Mirrors and Other Safety Precautions

Mirrors are a critical component of being able to see other vehicles during night driving. Proper adjustment of mirrors is absolutely necessary for night driving. However, a word of caution. Don't adjust your mirrors at night. At night you have very little depth perception, so take the time to do this during daylight hours. Adjust both the convex mirror and your flat mirrors.

It's going to be harder to distinguish objects in the convex mirrors at night. During the day you can clearly see vehicles in the convex mirror that are in close proximity to the bus. But at night it will be vastly more difficult to pick out vehicles using this mirror.

You will also notice that when you use your flat mirrors during the day you have excellent depth perception. At night you will not have a great deal of depth perception. You will be limited to how much you are able to see. Factor this into your driving when operating a school bus at night. Use your mirrors on the school bus at night takes practice and good judgment.

We've covered many of the most important concepts for night driving. However we still need to go over some issues that are unique to night driving. They will provide every school bus driver with a needed margin of safety. Night driving is difficult in clear weather, but when it's raining or snowing it raises the bar even further. When driving in snow or ice it will become harder to see the road clearly. Water reflects light into the air, so when you encounter these conditions use your low beams. It will make it easier to see the road and pick out dangerous driving hazards. Also, when condensation begins fogging up your windows, make sure to turn on the defroster and open the window.

When backing up at night, after adjusting your seat and steering wheel, check your mirrors carefully before proceeding. Once you can see your bus is clear, pick out an object to use as a reference point to guide you during the backing up procedure.

Most of the latest buses have multiple lighting switches. Drivers can use these switches to illuminate the rear of the bus, the left or right side of the bus or all the lights may be turned on simultaneously. There are many advantages to this lighting system and bus drivers should

become familiar with the positions of these switches.

Late at night drivers may experience fatigue. Particularly on long field trips such as athletic events. Preventative techniques include keeping adequate circulation inside the bus. Keep the fans running and open up the side windows to circulate the air. Even with the best preparation and preventative techniques, some drivers will get drowsy during a long night's bus trip. If this is the case, pull off the road and find a safe and well lit mall or shopping center. Stop the bus and take a short break. If possible, plan ahead for safe places to stop if the need arises.

During the course of the video we covered most of the important issues that bus drivers should follow when driving a school bus at night. Keep in mind that night driving, with limits on visibility, requires that drivers must stay alert and focused on the rapidly changing conditions that occur at night.

All of you are making a major difference to the students you transport each school day. Keep up the great work!

Night Driving Safety - Test Questions:

- 1) 75% of a school bus driver's reaction time results from what they are able to see.

TRUE or FALSE

- 2) A good way to help yourself from getting fatigued or overly drowsy while driving at night is to:

- a) Turn on the defrosters and heater and crack the driver's side window.
- b) Turn on the fan and open the driver's side window.
- c) Drink a cup of coffee or tea before you begin driving at night.
- d) Set an alarm like the one on your cell phone to ring every 10 minutes.
- e) a & d
- f) b & c
- g) a & c
- h) b & d
- i) All the above
- j) None of the above

- 3) Drivers should condition their bodies to stay awake during night driving, rather than rely on stimulants like the caffeine in teas or coffee.

TRUE or FALSE

- 4) Night blindness is a physical condition. It is NOT a reflection of a driver's ability. Choose the correct telltale physical sign of night blindness listed below.

- a) Inability to identify objects within the night driving environment.
- b) Inability to drive at safe speeds with the flow of traffic.
- c) Trouble distinguishing between driving slow and driving fast.
- d) When a driver doesn't clearly recognize the lane they are driving in.
- e) a & d
- f) b & c
- g) a & c
- h) b & d
- i) All the above
- j) None of the above

- 5) Drivers should familiarize themselves with the position of the switches on the control panel. This will prevent the driver needed to take their attention off the road while driving at night to find the correct switch

TRUE or FALSE

- 6) One of the most common problems drivers experience is driving beyond their headlights. Driving beyond your headlights means:
- a) The driver is traveling faster than they can stop within the area illuminated by their headlights.
 - b) The driver is traveling faster than 500 feet a second while using his or her high beams.
 - c) The driver is traveling faster than 150 feet a second while using his or her low beams.
 - d) All the above
 - e) None of the above
- 7) Darkness limits your visibility. What you are able to see at night is restricted to the area your headlights allow you to see. This means your ability to judge distances between objects will be severely diminished.

TRUE or FALSE

- 8) At night, in the dark, it's difficult to gauge the rate of deceleration. This is a major concern, especially for school bus drivers with a bus full of sleeping students. This judgment of another vehicle's speed, acceleration and deceleration is called:
- a) Estimated Rate of Travel
 - b) Transit Shift Theory
 - c) Rate of Closure
 - d) Stationary Rate of Travel
- 9) Your reaction time is fixed and will not change. When you get too close to a vehicle in front of you, when you drive outside of your headlights or when you enter an intersection at night and don't slow down, your reaction time may not be able to prevent an accident. The **only** way to improve your reaction time is to reduce your speed and use safe night driving techniques.

TRUE or FALSE

- 10) Mirrors are a critical component of the bus at night. Proper adjustment is very important because at night you have very little depth perception. Remember:
- a) To adjust your mirrors and your seat every time you drive.
 - b) To pay special attention to your convex mirror.
 - c) To make sure your flat mirror is at a wider angle at night.
 - d) Don't adjust your mirrors at night!

Night Driving Safety - Answer Key:

- 1) FALSE
- 2) b - Turn on the fan and open the driver's side window.
- 3) FALSE
- 4) i - All the above
- 5) TRUE
- 6) a - The driver is traveling faster than they can stop within the area illuminated by their headlights.
- 7) TRUE
- 8) c - Rate of Closure
- 9) TRUE
- 10) d - Don't adjust your mirrors at night!