

# Section 10

## SCHOOL BUS

### This Section Covers

- **Danger Zones and Use of Mirrors**
- **Loading and Unloading**
- **Emergency Exit and Evacuation**
- **Railroad-Highway Grade Crossings**
- **Student Management**
- **Antilock Braking Systems**
- **Special Safety Considerations**

School bus drivers subject to Article 19-A of the NYS Vehicle and Traffic Law must have a Commercial Driver License (CDL). School bus drivers who drive a school bus designed to transport 15 or more passengers, excluding the driver, must have a "school bus" endorsement in addition to a "passenger" endorsement on their CDL. To get the "school bus" endorsement, you must pass a knowledge test based on the information in this guide. You may also have to pass a skills test required for the class of school bus you drive or intend to drive.

Article 19-A requires school bus drivers to have a medical examination every two years and to obtain a signed and dated medical examination form. Pursuant to Article 19-A, only a licensed doctor of medicine (MD) or osteopathy (DO), a certified nurse practitioner (NP), or a registered physician assistant (PA) may conduct and sign the bus driver medical examination form. If the examination is conducted by a physician's assistant (PA) or advanced practice nurse (APN), the examination form must also be signed by a supervising or collaborating physician. Federal medical examination forms with medical examiner signatures that do not adhere to this requirement are not acceptable for Article 19-A purposes. The NYS Education Department (SED) has additional requirements concerning the frequency of the medical examinations performed for school bus drivers (see Section 1.5 for details). SED should be contacted if more information concerning their requirements is needed.

This section does NOT provide information on all the federal and state requirements with which you must comply before you can drive a school bus. You should be thoroughly familiar with all specific school bus procedures, laws and regulations in New York State and your local school district.

### 10.1 - Danger Zones and Use of Mirrors

#### 10.1.1 - Danger Zones

The danger zones are any area outside of the bus that extend as much as 15 feet from the front bumper, 15 feet from the left and right sides of the bus and 15 feet behind the rear bumper of the school bus. These areas are where children are in the most danger of being hit, either by another vehicle or their own bus. In addition, the area to the left of the bus is always considered dangerous because of passing vehicles. Figure 10.1 shows these danger zones.

#### 10.1.2 - Correct Mirror Adjustment

Proper adjustment and use of all mirrors is vital to the safe operation of the school bus. It is vital that drivers observe the danger zone around the bus and look for students, traffic, and other objects. You should always check each mirror before operating the school bus so you have a maximum viewing area consistent with the vision requirements of Federal Motor Vehicle Safety Standard No. 111, "Mirror Systems". If necessary, have the mirrors adjusted to ensure that you can clearly observe all areas around the bus.

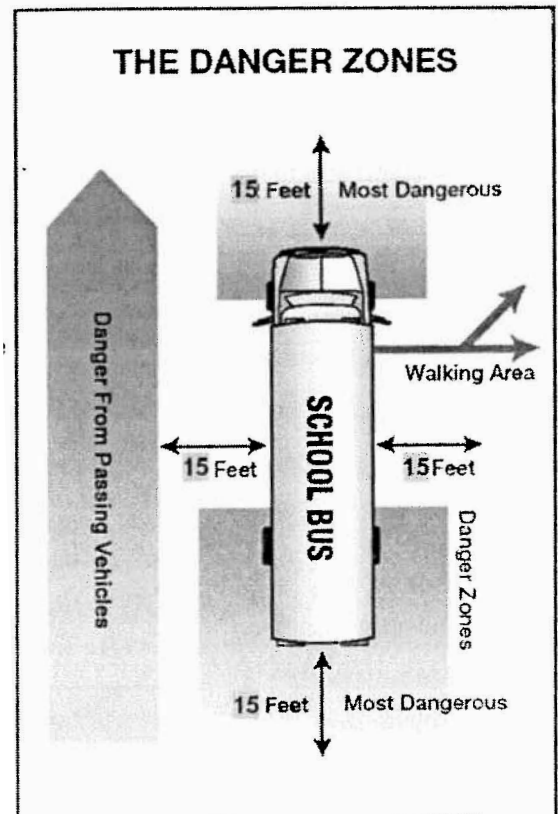


Figure 10.1

**10.1.3 - Outside Left and Right Side Flat Mirrors**

These mirrors are mounted at the left and right front corners of the bus, at the side or front of the windshield. They are used to monitor traffic and to check clearances and students on the sides and to the rear of the bus. There is a blind spot immediately below and in front of each mirror, and directly in back of the rear bumper. The blind spot behind the bus extends 50 to 150 feet and could extend up to 400 feet, depending on the length and width of the bus.

Ensure that the mirrors are properly adjusted so you can see:

- 200 feet (or 4 bus lengths) behind the bus.
- along the sides of the bus.
- the rear tires touching the ground, and six inches of pavement in front of the rear tires.

Figure 10.2 shows how both the outside left and right side flat mirrors should be adjusted.

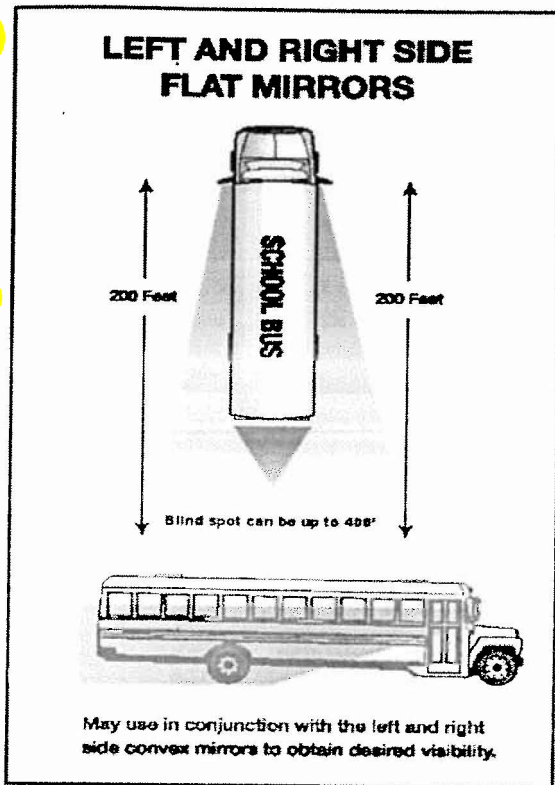


Figure 10.2

**10.1.4 - Outside Left and Right Side Convex Mirrors**

If the bus is equipped with convex mirrors, they are located below the outside flat mirrors. They are used to monitor the left and right sides at a wide angle. They provide a view of traffic, clearances and students at the side of the bus. These mirrors present a view of people and objects that does not accurately reflect their size and distance from the bus.

Ensure that the mirrors are properly adjusted so you can see:

- the entire side of the bus up to the mirror mounts.
- the front of the rear tires touching the ground.
- at least one traffic lane on either side of the bus.

Figure 10.3 shows how both the outside left and right side convex mirrors should be adjusted.

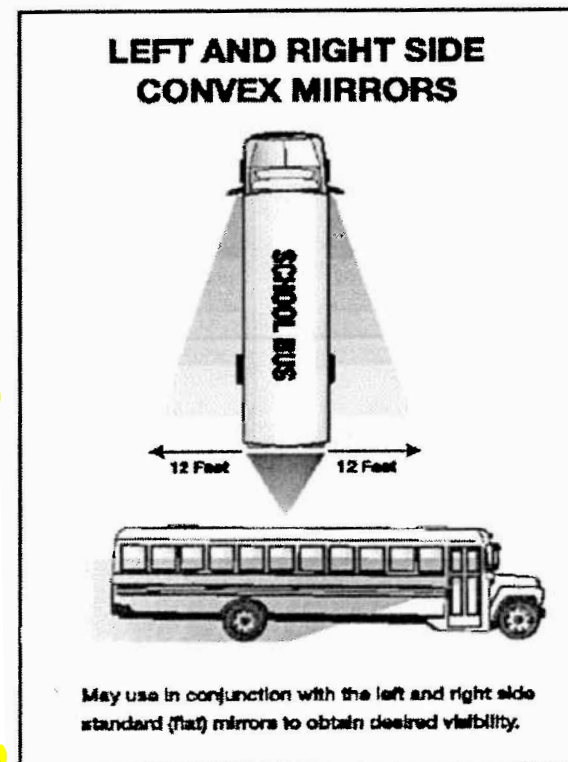


Figure 10.3

### 10.1.5 - Outside Left and Right Side Cross View Mirrors

These mirrors are mounted on both left and right front corners of the bus. They are used to see the “danger zone” area directly in front of the bus that is not visible by direct vision, and to view the “danger zone” areas to the left side and right side of the bus, including the service door and front wheel areas. These mirrors present a view of people and objects that does not accurately reflect their size and distance from the bus. The driver must ensure that these mirrors are properly adjusted.

Ensure that the mirrors are properly adjusted so you can see:

- the entire area in front of the bus from the front bumper at ground level to a point where direct vision is possible. Direct vision and mirror view vision should overlap.
- the right and left front tires touching the ground.
- the area from the front of the bus to the service door.

The driver should look at these mirrors, along with the convex and flat mirrors, in a logical sequence to ensure that a child or object is not in any of the danger zones.

Left Cross View Mirror Right Cross View Mirror

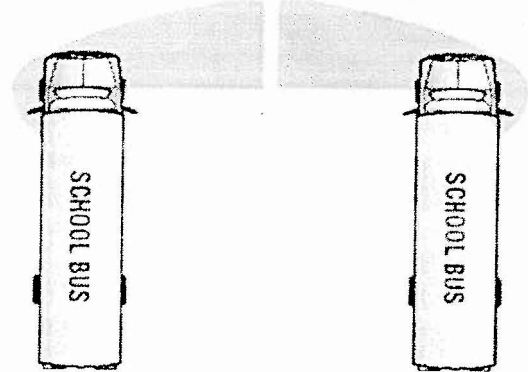


Figure 10.4a

Figure 10.4b

Figures 10.4a and 10.4b illustrate how the left and right side cross view mirrors should be adjusted.

### 10.1.6 - Overhead Inside Rearview Mirror

This mirror is mounted directly above the windshield on the driver's side area of the bus. This mirror is used to monitor passenger activity inside the bus. It may provide limited visibility directly in back of the bus if the bus is equipped with a glass-bottomed rear emergency door. There is a blind spot area directly behind the driver's seat, as well as a large blind spot area that begins at the rear bumper and that could extend up to 400 feet or more behind the bus. You must use the exterior side mirrors to monitor traffic that approaches and enters this area.

Ensure that the mirrors are properly adjusted so you can see:

- the top of the rear window in the top of the mirror.
- all of the students, including the heads of the students right behind you.

## 10.2 - Loading and Unloading

More students are killed while getting on or off a school bus each year than are killed as passengers inside of a school bus. As a result, knowing what to do before, during and after loading or unloading students is critical. This section will give you procedures to help you avoid unsafe conditions that could result in injuries and fatalities during and after loading and unloading students.

### 10.2.1 - Approaching the Stop

Each school district establishes official routes and official school bus stops. All stops should be approved by the school district prior to making the stop. You should never change the location of a bus stop without approval from the appropriate school district official.

You must **use extreme caution when approaching a school bus stop**. You are in a very demanding situation when entering these areas. It is critical that you understand and follow all state and local laws and regulations regarding approaching a school bus stop. This would involve the proper use of mirrors, alternating flashing lamps and, when equipped, the moveable stop signal arm and crossing control arm.

**When approaching the stop, you should:**

- **approach cautiously, at a slow rate of speed.**
- **look for pedestrians, traffic or other objects before, during and after coming to a stop.**
- **continuously check all mirrors.**
- **activate alternating flashing amber warning lamps at least 300 feet before the school bus stop.**
- **continuously check mirrors to monitor the danger zones for students, traffic and other objects.**

**When stopping, you should:**

- **bring the school bus to a full stop on the right side of the roadway, with the front bumper at least 10 feet away from students at the designated stop. This forces the students to walk to the bus, and that will give you a better view of their movements.**
- **place the transmission in "Park" (if there is no "Park" shift point, use "Neutral"), and set the parking brake every time you stop.**
- **activate alternating flashing red lamps when traffic is a safe distance from the school bus, and ensure stop arm is extended.**
- **make a final check to see that all traffic has stopped before completely opening the door and signaling students to approach.**

**10.2.2 - Loading Procedures**

- **Perform a safe stop, as described in section 10.2.1.**
- **Students should wait in a designated location for the school bus, facing the bus as it approaches.**
- **Students should board the bus only when signaled to do so by the driver.**
- **Have students fill up the middle rows first.**
- **Monitor all mirrors continuously.**
- **Count the number of students at the bus stop, and be sure all of them board the bus. If possible, know the names of the students at each stop. If a student is missing, ask the other students where that student is.**
- **Have the students board the school bus slowly, in single file, and use the handrail. The dome light should be on when loading in the dark.**
- **Wait until the students are seated and facing forward (and, in NYC, wearing seat belts) before moving the bus.**
- **Check all mirrors. Make certain that no one is running to catch the bus.**
- **If you cannot account for a student outside, secure the bus, turn off the engine, take the key, set the brake and check around and underneath the bus.**
- **When all students are accounted for, prepare to leave by:**
  - **closing the door.**
  - **engaging the transmission.**
  - **releasing the parking brake.**
  - **turning off the alternating flashing red lamps.**
  - **checking all of the mirrors again.**
- **When it is safe, move the bus and continue the route.**

The loading procedure is essentially the same wherever you load students, but there are slight differences. When students are loading at the school campus, you should:

- turn off the ignition switch, or turn it to the “accessory” position, if required to operate the red loading lamps.
- remain seated to supervise loading. If you must leave the driver’s compartment in case of an emergency, or to assist a student, remove the key from the ignition.

### **10.2.3 - Unloading Procedures on the Route**

- Perform a safe stop at designated unloading areas, as described in section 10.2.1.
- Have the students remain seated until they are told to exit.
- Check all mirrors.
- Count the number of students while unloading to confirm the location of all students before pulling away from the stop.
- Tell students to exit the bus and to walk at least 15 feet away from the side of the bus to a position where you can see all of the students clearly.
- Check all mirrors again. Make sure that no students are around, or returning to, the bus.
- If you cannot account for a student outside the bus, secure the bus, and check around and underneath the bus.
- When all students are accounted for, prepare to leave by:
  - closing the door.
  - engaging the transmission.
  - releasing the parking brake.
  - turning off the alternating flashing red lamps.
  - checking all mirrors again.
- When it is safe, move the bus and continue the route.

**Note:** If you have missed a student’s unloading stop, do not back up. Be sure to follow local procedures.

### **Additional Procedures for Students Who Must Cross the Roadway**

You should understand what students should do when exiting a school bus and crossing the street in front of the bus. In addition, the school bus driver should understand that students might not always do what they are supposed to do.

- If a student or students must cross the roadway, they should follow these procedures:
  - before exiting the bus, students should look down the right side of the bus for vehicles attempting to pass the bus on the right.
  - walk approximately 15 feet away from the side of the school bus to a position where you can see them.
  - walk to a location at least 10 feet in front of the right corner of the bumper, but still remaining away from the front of the school bus.
  - stop at the right edge of the roadway. You should be able to see the student’s feet.

- When students reach the edge of the roadway, they should:
  - stop and look in all directions, making sure that the roadway is clear and is safe.
  - check to see if the red flashing lamps on the bus are still flashing.
  - make eye contact with you.
  - wait for you to give the universal crossing signal before crossing the roadway.
  
- When you signal, the students should:
  - cross at least 10 feet in front of the school bus; far enough in front to be in your view.
  - walk to the left edge of the school bus, stop, and make eye contact with you.
  - go back, if you give the universal danger signal.
  - continue to cross the roadway if you give the universal crossing signal.
  - look for traffic in both directions, making sure that the roadway is clear.
  - proceed across the roadway, continuing to look in all directions.

**Note:** It is important for the driver to use the universal crossing and danger signals, with the understanding that any motorists who are stopped in the area could misinterpret a hand signal or other signal that you give to a student.

#### **10.2.4 - Unloading Procedures at School**

State and local laws and regulations regarding unloading students at schools, particularly in situations where such activities take place in the school parking lot or other location that is off the traveled roadway, are often different than unloading along the school bus route. It is important that the school bus driver understands and obeys state and local laws and regulations. The following procedures are meant to be general guidelines.

When unloading at the school, you should follow these procedures:

- perform a safe stop at designated unloading areas, as described in section 10.2.1.
- turn off the ignition switch, or turn it to the “accessory” position, if required to operate the red loading lamps.
- remain seated to supervise unloading. If you must leave the driver’s compartment in case of an emergency, or to assist a student, then remove the key from the ignition.
- have the students remain seated until they are told to exit.
- have the students exit in an orderly fashion.
- observe the students as they step from the bus to see that they all move promptly away from the unloading area.
- walk through the bus and check for hiding/sleeping students and items left by the students.
- check all mirrors. Make certain that no students are returning to the bus.
- if you cannot account for a student outside the bus and the bus is secure, check around and underneath the bus.
  
- When all students are accounted for, prepare to leave by:
  - closing the door.
  - starting the engine.
  - stepping on the service brake.
  - engaging the transmission.
  - releasing the parking brake.
  - turning off the alternating flashing red lamps.
  - checking all mirrors again.
  
- When it is safe, pull away from the unloading area.



### 10.2.5 - Special Dangers of Loading and Unloading

**Dropped or Forgotten Objects.** Always focus on students as they approach the bus, and watch for any who disappear from sight.

Students may drop an object near the bus during loading and unloading. Stopping to pick up the object, or returning to pick up the object, may cause the student to disappear from the driver's sight at a very dangerous moment.

Students should be told to leave any dropped object where it is, and to move to a point of safety out of the danger zones, and then attempt to get the driver's attention to retrieve the object.

**Handrail Hang-ups.** Students have been injured or killed when clothing, accessories or even parts of their body get caught in the handrail or door as they exit the bus. You should closely observe all students exiting the bus to confirm that they are in a safe location at least 15 feet away from the bus prior to moving the bus.

### 10.2.6 - Post-trip Inspection

When your route or school activity trip is finished, you should conduct a post-trip inspection of the bus.

You should walk through the bus and around the bus looking for:

- articles left on the bus.
- sleeping students.
- open windows and doors.
- mechanical/operational problems with the bus, with special attention to items that are unique to school buses – mirror systems, flashing warning lamps and stop signal arms.
- damage or vandalism.

Any problems or special situations should be reported immediately to your supervisor or school authorities.

## 10.3 - Emergency Exit and Evacuation

An emergency situation can happen to anyone, anytime, anywhere. It could be a crash, a stalled school bus on a railroad-highway crossing or in a high-speed intersection, an electrical fire in the engine compartment, a medical emergency to a student on the school bus, etc. Knowing what to do in an emergency—before, during and after an evacuation—can mean the difference between life and death.

### 10.3.1 - Planning for Emergencies

**Be Prepared and Plan Ahead.** Study your route and the types of children you will be transporting to determine in advance how you will evacuate the bus, according to the types of hazards you may encounter. When possible, assign two responsible, older student assistants to each emergency exit. Teach them how to assist the other students off the bus. Assign another student assistant to lead the students to a "safe place" after evacuation. However, you must recognize that there may not be older, responsible students on the bus at the time of the emergency. Therefore, emergency evacuation procedures must be explained to all students. This includes ensuring that they know the location of, and the operation of, the various emergency exits, and the importance of listening to and following all instructions given by you. You should rehearse these procedures during the three annual school bus emergency drills.

### 10.3.2 - Evacuation Procedures

#### Determine Need to Evacuate Bus

The first and most important consideration is for you to recognize the hazard. If time permits, school bus drivers should contact their dispatcher to explain the situation before making a decision to evacuate the school bus.

As a general rule, **student safety and control is best maintained by keeping students on the bus** during an emergency and/or impending crisis situation, if so doing does not expose them to unnecessary risk or injury. Remember, the decision to evacuate the bus must be a timely one.

**A decision to evacuate should include consideration of the following conditions:**

- **is there a fire or danger of fire?**
- **is there a smell of leaking fuel?**
- **is there a chance the bus could be hit by other vehicles?**
- **is the bus in the path of a sighted tornado or rising waters?**
- **are there downed power lines?**
- **would removing students expose them to speeding traffic, severe weather, or a dangerous environment such as downed power lines?**
- **would moving students complicate injuries such as neck and back injuries and fractures?**
- **is there a hazardous spill involved? Sometimes, it may be safer to remain on the bus and not come in contact with the material.**

**Mandatory Evacuations.** **The driver must evacuate the bus when:**

- **the bus is on fire or there is a threat of a fire.**
- **a bomb is reported to be on the bus**
- **the bus is stalled on or adjacent to a railroad-highway crossing.**
- **the position of the bus may change and increase the danger.**
- **there is an imminent danger of collision.**
- **there is a need to quickly evacuate because of a hazardous materials spill.**

**General Procedures.** **Once you have decided that evacuation is in the best interest of safety, proceed as described below.**

- **Determine the best type of evacuation:**
  - **front, rear or side door evacuation, or some combination of doors.**
  - **roof or window evacuation.**

**Secure the bus by:**

- **placing the transmission in "Park"; if there is no shift point, use "Neutral".**
- **setting the parking brakes.**
- **shutting off the engine.**
- **removing the ignition key.**
- **activating the hazard-warning lamps.**
- **notify the dispatch office of your evacuation location, the conditions and the type of assistance needed, EXCEPT IF A BOMB IS PRESENT, when you may NOT use the bus radio or cell phone. You must also warn the students not to use cell phones during bomb threats.**
- **dangle a radio microphone or telephone out of the driver's window for later use, if operable, except in the case of a bomb.**
- **if you do not have a radio, or if your radio is inoperable, or if there is a bomb, dispatch a passing motorist or area resident to call for help. As a last resort, dispatch two older, responsible students to go for help.**



- order the evacuation.
- evacuate students from the bus.
  - Do not move a student who you believe may have suffered a neck or spinal injury, unless his or her life is in immediate danger.
  - Special procedures must be used to move neck or spinal injury victims to prevent further injury.
- Direct a student assistant to lead students to the nearest safe place.
  - A safe place for the students will be at least 100 feet off the road in the direction of oncoming traffic. This will keep them from being hit by debris if another vehicle collides with the bus.
  - Lead students upwind of the bus if fire is present.
  - Lead students as far away from railroad tracks as possible, and in the direction of any oncoming train.
  - Lead students upwind of the bus at least 300 feet if there is a risk from spilled hazardous materials.
- If the bus is in the direct path of a sighted tornado, and evacuation is ordered, escort the students to a nearby ditch or culvert if shelter in a building is not readily available, and direct them to lie face down, hands covering their head. They should be far enough away so the bus cannot topple on them. Avoid areas that are subject to flash floods. Walk through the bus to ensure that no students remain on the bus. Retrieve emergency equipment.
- Join waiting students. Account for all students, and check for their safety.
- Protect the scene. Set out emergency warning devices, as necessary and appropriate.
- Prepare information for emergency responders.

## 10.4 - Railroad-Highway Crossings

### 10.4.1 - Types of Crossings

**Passive Crossings.** This type of crossing does not have any type of traffic control device. You must stop at these crossings and follow proper procedures. However, the decision to proceed rests entirely in your hands. Passive crossings require you to recognize the crossing, search for any train using the tracks and decide if there is sufficient clear space to cross safely. Passive crossings have yellow circular advance warning signs, pavement markings and crossbucks to assist you in recognizing a crossing.

**Active Crossings.** This type of crossing has a traffic control device installed at the crossing to regulate traffic. These active devices can include flashing red lights, flashing red lights with bells and flashing red lights with bells and gates.

### 10.4.2 - Warning Signs and Devices

**Advance Warning Signs.** The round, black-on-yellow warning sign is placed ahead of a public railroad-highway crossing. The advance warning sign tells you to slow down, to look and listen for the train, and to be prepared to stop at the tracks if a train is coming. See Figure 10.5.



Figure 10.5

**Pavement Markings.** Pavement markings mean the same as the advance warning sign. They consist of an “X” with the letters “RR” and a no-passing marking on two-lane roads. See Figure 10.6.

There is also a “No Passing Zone” sign on two-lane roads. There may be a white stop line painted on the pavement before the railroad tracks. The front of the school bus must remain behind this line while stopped at the crossing.

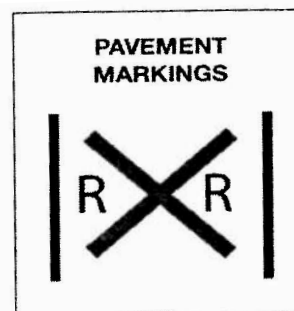


Figure 10.6

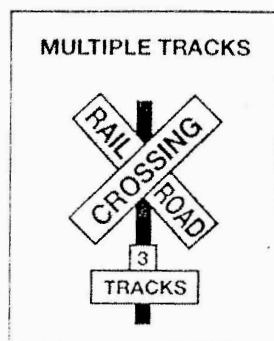


Figure 10.7

**Crossbuck Signs.** This sign marks a passive crossing. It requires you to yield the right-of-way to the train. When the road crosses over more than one set of tracks, a sign below the crossbuck specifies the number of tracks. See Figure 10.7.

**Flashing Red Light Signals.** At many active highway-rail grade crossings, the crossbuck sign has flashing red lights and bells. When the lights begin to flash, stop! A train is approaching. You are required to yield the right-of-way to the train. If there is more than one track, make sure that all tracks are clear before crossing. See Figure 10.8.

**Gates.** Many active railroad-highway crossings have gates with flashing red lights and bells. Stop when the lights begin to flash, and before the gate lowers across the traffic lanes. Remain stopped until the gates go up and the lights have stopped flashing. Proceed when it is safe. If the gate stays down after the train passes, do not drive around the gate. Instead, contact your dispatcher. See Figure 10.8.

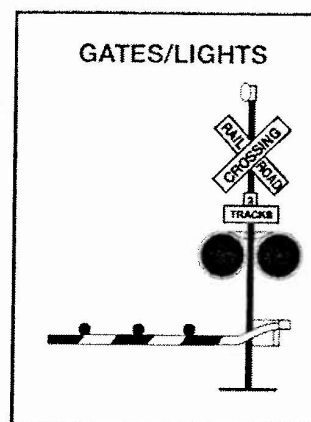


Figure 10.8

### 10.4.3 - Recommended Procedures

New York State has laws and regulations governing how school buses must operate at railroad-highway crossings. It is important for you to understand and obey these state laws and regulations. In general, school buses must stop at all crossings, and you must ensure that it is safe before proceeding across the tracks.

A school bus is one of the safest vehicles on the highway. However, a school bus does not have the slightest edge when involved in a crash with a train. Because of a train's size and weight, it cannot stop quickly. An emergency escape route does not exist for a train. You can prevent school bus/train crashes by following these recommended procedures.

#### Approaching the Crossing:

- slow down, including shifting to a lower gear in a manual transmission bus, and test your brakes.
- activate the hazard lamps approximately 200 feet before the crossing. Make sure that your intentions are known.
- scan your surroundings, and check for traffic behind you.
- stay to the right of the roadway, if possible.
- choose an escape route in the event of a brake failure or if there are problems behind you.

**At the Crossing:**

- stop no closer than 15 feet, and no farther than 50 feet, from the nearest rail, where you have the best view of the tracks.
- place the transmission in “Park”(if there is no “Park” shift point, use Neutral) and press down on the service brake or set the parking brakes.
- turn off all radios and noisy equipment, and tell the passengers to be silent.
- open the service door and driver’s window. Look and listen for an approaching train.

**Crossing the Track:**

- close the service door before crossing.
- check the crossing signals again before proceeding.
- at a multiple-track crossing, stop only before the first set of tracks. When you are sure that no train is approaching on any track, proceed across all of the tracks until you have completely cleared them.
- cross the tracks in a low gear. Do not change gears while crossing.
- if the gate comes down after you have started across, drive through it even if it means you will break the gate.
- after you have cleared all tracks completely, turn off the hazard lights, turn on the master switch and radio, and return all equipment that you had shut off back to normal operating condition.

**10.4.4 - Special Situations**

**Bus Stalls or Is Trapped on the Tracks.** If your bus stalls or is trapped on the tracks, **get everyone out of the bus and off the tracks immediately. Move everyone far from the bus at an angle, both away from the tracks and toward the train.**

**Law Enforcement Officer at the Crossing.** If a law enforcement officer is at the crossing, **obey the officer’s directions. If there is no officer, and you believe the signal is malfunctioning, contact your dispatcher** to report the situation and ask for instructions concerning what to do.

**Obstructed View of Tracks.** Plan your route so it provides maximum sight distance at highway-rail grade crossings. Do not attempt to cross the tracks unless you can see far enough down the track to know for certain that no trains are approaching. **Be especially careful at “passive” crossings.** Even if there are active railroad signals that indicate that the tracks are clear, you must look and listen to be sure it is safe to proceed.

**Containment or Storage Areas.** **If it won’t fit, don’t commit!** Know the length of your bus and the size of the containment area at highway-rail crossings on the school bus route, as well as any crossing you encounter in the course of a school activity trip. When approaching a crossing with a signal or STOP sign on the opposite side, pay attention to how much room there is. Be certain that the bus has enough containment or storage area to completely clear the railroad tracks on the other side if there is a need to stop. **As a general rule, add 15 feet to the length of the school bus to determine an acceptable containment or storage area.**

**10.5 - Student Management****10.5.1 - Don’t Deal With On-bus Problems When Loading and Unloading**

**To get students to and from school safely and on time, you have to be able to concentrate on the driving task.**

**Loading and unloading requires all your concentration. Don’t take your eyes off what is happening outside the bus.**

**If there is a behavior problem on the bus, wait until the students unloading are safely off the bus and have moved away. If necessary, pull the bus over to handle the problem.**

### **10.5.2 - Handling Serious Problems**

Tips on handling serious problems:

- follow your school's procedures for discipline or refusal of rights to ride the bus.
- stop the bus. Park in a safe location off the road, perhaps a parking lot or a driveway.
- secure the bus. Take the ignition key with you if you leave your seat.
- stand up and speak to the offender or offenders. Speak in a courteous manner with a firm voice. Remind the offender of the expected behavior. Do not show anger, but do show that you mean business.
- if a change of seating is needed, tell the student to move to a seat near you.
- never put a student off the bus except at school or at his or her designated school bus stop. If you feel that the offense is serious enough that you cannot safely drive the bus, calling for a school administrator or the police to come and remove the student may be appropriate. Always follow your local procedures for requesting assistance.

## **10.6 –Antilock Braking Systems**

### **10.6.1 - Vehicles Required to have Antilock Braking Systems**

The Department of Transportation requires that antilock braking systems be on:

- air brakes vehicles (trucks, buses, trailers and converter dollies) that were built on or after March 1, 1998.
- hydraulically braked trucks and buses with a gross vehicle weight rating of 10,000 lbs or more that were built on or after March 1, 1999.

Many buses built before these dates have been voluntarily equipped with ABS. Your school bus will have a yellow ABS malfunction lamp on the instrument panel if it is equipped with ABS.

### **10.6.2 - How ABS Helps You**

When you brake hard on slippery surfaces in a vehicle without ABS, your wheels may lock up. When your steering wheels lock up, you lose steering control. When your other wheels lock up, you may skid or even spin the vehicle.

ABS helps you to avoid wheel lock up and to maintain control. You may or may not be able to stop faster with ABS, but you should be able to steer around an obstacle while braking, and avoid skids caused by over braking.

### **10.6.3 - Braking With ABS**

When you drive a vehicle with ABS, you should brake as you always have. In other words:

- use only the braking force that is necessary to stop safely and to stay in control.
- brake the same way, regardless of whether or not you have ABS on the bus. However, in emergency braking, do not pump the brakes on a bus with ABS.
- as you slow down, monitor your bus and back off the brakes (if it is safe to do so) to stay in control.

### **10.6.4 - Braking if ABS is Not Working**

- Without ABS, you still have normal brake functions. Drive and brake as you always have.
- Vehicles with ABS have yellow malfunction lamps to tell you if something is not working. The yellow ABS malfunction lamp is on the bus instrument panel.
- As a system check on newer vehicles, the malfunction lamp comes on at start-up for a bulb check, and then goes out quickly. On older systems, the lamp could stay on until you are driving over five mph.

- If the lamp stays on after the bulb check, or goes on once you are under way, you may have lost ABS control at one or more wheels.
- Remember, if your ABS malfunctions, you still have regular brakes. Drive normally, but get the system serviced as soon as possible.

### 10.6.5 - Safety Reminders

- ABS does not compensate for bad driving habits, such as driving too fast, following too closely, or driving less carefully.
- ABS won't prevent power or turning skids—ABS should prevent brake-induced skids, but not those caused by spinning the drive wheels or going too fast in a turn.
- ABS won't necessarily shorten stopping distance. ABS will help maintain vehicle control, but will not always shorten stopping distance.
- ABS won't increase or decrease ultimate stopping power—ABS is an “add-on” to your normal brakes, not a replacement for them.
- ABS won't change the way you normally brake. Under normal brake conditions, your vehicle will stop as it always stops. ABS comes into play only when a wheel would normally have locked up because of over braking.
- ABS won't compensate for bad brakes or poor brake maintenance.
- Remember: The best vehicle safety feature is still a safe driver.
- Remember: Drive so you never have to use your ABS.
- Remember: If you need it, ABS could help to prevent a serious crash.

## 10.7 - Special Safety Considerations

### 10.7.1 - Strobe Lights

Some school buses are equipped with roof-mounted, white strobe lights. If your bus is so equipped, the overhead strobe light should be used when you have limited visibility (that is, if you cannot easily see around you – in front, behind or beside the school bus). Your visibility could be only slightly limited, or it could be so bad that you can see nothing at all. In all instances, understand and obey your state or local regulations concerning the use of these lights.

### 10.7.2 - Driving in High Winds

Strong winds affect the handling of the school bus! The side of a school bus acts like a sail on a sailboat. Strong winds can push the school bus sideways. They can even move the school bus off the road or, in extreme conditions, tip it over.

If you are caught in strong winds:

- keep a strong grip on the steering wheel with both hands. Try to anticipate gusts.
- you should slow down to lessen the effect of the wind, or pull off the roadway and wait.
- contact your dispatcher to get more information about what to do.

### 10.7.3 - Backing

Backing a school bus is strongly discouraged. You should back your bus only when you have no other safe way to move the vehicle. You should never back a school bus when students are outside of the bus. Backing is dangerous and increases your risk of a collision.

If you have no choice, and you must back your bus, follow these procedures:

- post a lookout, preferably inside the school bus looking out the rear window. The purpose of the lookout is to warn you about obstacles, approaching persons and other vehicles. The lookout should not give you directions about how to back the bus.
- signal for quiet on the bus.
- constantly check all mirrors and rear windows.
- back slowly and smoothly.
- if no lookout is available:
  - set the parking brake.
  - turn off the motor and take the keys with you.
  - walk to the rear of the bus to determine if the way is clear.
- if you must back-up at a student pick-up point, be sure to pick up students before backing, and watch for late comers at all times.
- be sure that all students are in the bus before backing.
- if you must back-up at a student drop-off point, be sure to unload the students after backing.

#### **10.7.4 – Tail Swing**

A school bus can have up to a three-foot tail swing. You need to check your mirrors before and during any turning movements to monitor the tail swing, especially when pulling away after loading or unloading students.

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### **Test Your Knowledge**

1. Define the danger zone. How far does the danger zone extend around the bus?
2. What should you be able to see if the outside flat mirrors are adjusted properly? The outside convex mirrors? The cross view mirrors?
3. You are loading students along the route. When should you activate your alternating flashing amber warning lamps?
4. You are unloading students along your route. Where should students walk to after exiting the bus?
5. After unloading at school, why should you walk through the bus?
6. What position should students be in, in front of the bus, before they cross the roadway?
7. Under what conditions must you evacuate the bus?
8. How far from the nearest rail should you stop at a highway-rail crossing?
9. What is a passive highway-rail crossing? Why should you be extra cautious at this type of crossing?
10. How should you use your brakes if your vehicle is equipped with antilock brakes (ABS)?

*If you can't answer these questions, read this section again.*