

# Unit H - Transit Buses



## Unit H - Transit Buses (Type D)

### Learning Objectives

After completing this unit the trainee will be able to:

1. Compare and contrast the dimensions of a transit school bus.
2. Identify the differences of the transit school bus vs. conventional.
3. Define and describe the characteristics and handling of transit school buses.
4. Identify the potential dangers when operating a transit school bus.

**Suggested Time: 2-3 hours**

### **I. Introduction**

#### H.1 and H. 2

*Discussion: At first glance what are some differences between the transit and conventional style bus?*

Transit buses come in various sizes with a capacity rating of up to 90 passengers. Compared to comparable rated conventional buses, transit buses are longer and the wheelbase is shorter (the wheelbase is the distance

between the front and rear tires). The shorter the wheelbase of the bus, the tighter the turning radius will be. Consequently, transit buses turn tighter than their conventional counterparts.

#### H.3

The transit bus has increased visibility around the front of the bus. This greatly increases the safety of students crossing in front of the bus.

#### H.4

The driver seating position is different in a transit bus; the driver sits in “front” of the front axle. By comparison, the driver sits “behind” the front axle in a conventional bus.

### **II. Dimensions and Turning Radius**

#### H. 5

The turning radius of a Type D transit bus is tighter than the Type C conventional bus.

See “School Bus Dimensions” chart.

### **III. Adjustment/Use of Mirrors**

#### H.6

1. Inside flat rearview mirror (located over the windshield). Adjust so the driver can view the top of the rear window in the top of the mirror. The driver should be able to see students, including the top of the students directly behind the driver’s seat. The driver should be

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able to see somewhat outside of the passenger side windows, but will not be able to see below the window level.

2. Outside flat rearview mirrors (rectangular mirror on both sides of the bus). Adjust so the driver can see 200 feet or 4 bus lengths behind the bus, see the side of the bus, and see the rear tires touching the ground.

Note: On older transit buses, it may be impossible to see the tire touching the ground, but you should see the rubber skirting around the wheel well.

3. Convex Mirrors (located below the flat mirror on both sides of the bus). Adjust so that the driver can see the entire area to the rear of the mirror along the side of the bus. The driver should be able to see at least one traffic lane on either side of the bus. If adjusted properly, all blind spots in front of and along both sides of the bus will be eliminated. There are still blind spots behind the bus.
4. Crossover Mirrors. Adjust to see the entire area in front of the

vehicle as well as the front bumper.

*Discussion: Discuss Federal Motor Vehicle Safety Standard 111, mirror adjustment.*

## IV. Steering Position

### H.7

Hand positions on the wheel should be at the “8 and 4 o’clock” or “9 and 3 o’clock” position with the thumbs up and hands placed on the outside of the wheel. Many drivers use a “9 and 3” position due to the flat angle of the wheel. In addition, many drivers use the “push/pull” hand position technique when driving transit buses.

## Stopping

### H.8

The driver should place the entire foot gently on the brake pedal and then push softly with the toe or ball of the foot on the top of the pedal.

The driver should not push pedal at the bottom because it is hinged at the bottom and pressure there will not stop the bus. Before coming to a complete stop, the driver must release pressure to the brake slightly then reapply pressure to come to a smooth stop.

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Note: Drivers should be aware that on transit buses, the brake pedal is much closer to the accelerator pedal than in conventional school buses.

***Discussion: Pedal misapplication occurs when the bus operator applies the accelerator instead of the brake—discuss the risk.***

## VI. Turns

### H.9

#### 1. Right Turns

Utilize the four-foot rule (distance from the bus to the side of the road). Most right turns will begin when the driver can see down the curb line (looking out the entrance doorway) of the street onto which the driver will be turning. A sharp right turn may require more distance from the bus to the curb than the usual four feet. Be sure to watch all mirrors carefully, especially the 84-passenger bus, which has a greater tail-swing. If there is a parked car on the street on which you are turning, less than 40 feet from the intersection, use the left side of that car as your “curb line.”

#### 2. Left turns

Left turns begin when the front of the bus is in the middle of the intersection. Check for tail-swing, clearance, and execute your turn. Transit buses have a tail-swing from a minimum of 1 foot on the 48-passenger bus, to 3+ feet on the 90-passenger bus.

***Discussion: When making a right or left turn, the rear wheels of the bus will track differently than the front causing the rear of the bus to project outward as the turn is being made.***

## VII. Backing

### H.10

Backing a transit bus should be avoided unless necessary. Transit buses afford very little visibility through windows and mirrors from the driver’s seat of what is located behind the bus. Backing a transit bus is especially dangerous, and drivers must be particularly cautious if the need for backing becomes a necessity.

***Discussion: Discuss the dangers of backing a transit school bus. Cite examples.***

### H.11

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## VIII. Lane positioning

### H.12

With the driver sitting much closer to the left side of the bus, there is a tendency to steer the bus too close and often over the right side white line or edge of roadway when first driving the transit bus. Therefore, it is extremely important to effectively use mirrors. The driver must position the bus in the center of the lane. The driver should use the left and right mirrors to assure that the bus is not drifting to the right. Avoid staring straight down in front of the bus. The driver must keep vision aimed high.

### H.13

The driver must be observant of conditions down the road.

## IX. Space Cushion

### H.14

#### 1. When Stopped

When stopped, the driver should maintain a “space cushion” that will allow him/her to pull out and go around a disabled vehicle in front of the bus using only one lane to the right or left. Due to better forward visibility in the transit bus, seeing the rear tires, of the vehicle ahead touching the ground, may not provide an adequate space cushion. The

driver should adjust spacing for visibility, road and traffic conditions.

Allow additional space. This will:

- a. Prevent the bus from striking a vehicle in front of it (if the bus is hit from behind)
- b. Prevent the bus from being hit (if the vehicle in front rolls back)
- c. Afford enough room to proceed around a disabled vehicle to the front using only the lane next to you

#### 2. When Moving

The driver should leave a clear space to the left, right, or front of the bus. Leave two 45-degree angle escape routes to the sides whenever possible. The driver needs at least two escape route choices. Continuously check the mirrors for vehicles that stay within your space cushion. Slightly decreasing speed will allow vehicles to pass and move out of the space cushion.

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## **X. Caution notes for driving transit buses**

### **H.15**

Drivers should be aware of the following when operating a transit bus:

- Position and action of the accelerator and brake pedals (the two are very close together).
- Dips in the road (the front of the bus sits considerably lower to the ground than the rear).
- Underpass height clearance signs.
- Bridge and overpass weight limit signs.
- Leaning signs and objects close to the roadway.
- Uneven shoulders of a roadway.
- Vehicles along the side of the bus while making a turn.
- Narrow stairway of the bus and the tightly spaced driver's area.
- Turbo charged engines need additional time to cool down before turning them off. This gradual "cool down" period helps keep the metal turbo parts from contracting too quickly and cracking. Turbo engines should be idled between two and five minutes before shutting off (per manufacture's specifications)
- Be sure to continually check mirrors in order to avoid drifting off the road on the right side.

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## Unit Review

1. The \_\_\_\_\_ the wheelbase of the bus, the tighter the turning radius will be.
2. The driver's seating position is different in a transit bus. The driver sits in "front" of the \_\_\_\_\_.
3. The transit bus has increased \_\_\_\_\_ around the front of the bus.
4. Be aware, on many transit buses, the \_\_\_\_\_ is much closer to the accelerator pedal than in conventional school buses.
5. Unless necessary, avoid \_\_\_\_\_ a transit bus.
6. Be \_\_\_\_\_ of conditions down the road.
7. When stopped, maintain a \_\_\_\_\_ that will allow you to pull out and go around a disabled vehicle in front of you using only one lane to the right or left.
8. Drivers should be aware of \_\_\_\_\_ height clearance and signs warning of clearances.

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## Answers

1. shorter
2. front axle
3. visibility
4. brake pedal
5. backing
6. observant
7. space cushion
8. underpass