Video Communications
Presents

Reference Guide and Test Questions

Tail Swing Safety for School Bus Drivers

Introduction

Tail swing occurs whenever a bus makes a turn. The school bus driver must be aware of tail swing because unless the driver factors in tail swing, the rear of the bus could collide with problem objects.

The objective of this video will be to describe to drivers when tail swing occurs; and how to avoid contact with any problem objects that they will come into contact during tail swing.

The video will be divided into separate sections. The **first section** of the video will cover training exercises for a conventional school bus. The **second section** will follow a demonstration of tail swing on a transit bus.

Martin Ward, a California certified school bus instructor, will host the program and serve as our guide in demonstrating tail swing procedures.

Section one - The Conventional Bus

1. Martin explains tail swing procedures to a new school bus driver. Martin gives the trainee a heads up on what a school bus driver will need to know in order to safely execute the tail swing. He also places a cone at the rear of the bus so the new driver will be able to judge the tail swing in relation to the ground reference line.

2. The first exercise will demonstrate a **right turn for a conventional school bus.**

3. Martin lines up a conventional and transit bus and explains that the conventional school bus has a longer overhang than a transit school bus. He explains that the longer overhang means that more room will be needed when executing a turn for the conventional bus, due to its longer overhang.

4. Martin explains the exercise to new the driver: Right turn for a conventional bus. He talks her through the exercise.

a. He tells the new driver: make a full lock right turn. The bus will turn to the right and tail swing will occur out to the left.

b. Before the driver proceeds, she will check both flat mirrors and then when it's safe she will proceed. She stops when she completes the tail swing.

c. Martin and the driver leave the bus and when outside of the bus, Martin will critique the tail swing.

d. The back end of the bus has swung out over the ground reference line to the left.

e. Martin takes a ruler and measures the distance the bumper has swung out over the ground reference line. It measures 2 feet.

f. Martin explains that 2 feet is a safe distance to avoid hitting a problem object. He suggests that 3 feet would provide a larger margin of safety.

5. Martin explains the importance of leaving a large margin of error. An example of a bus leaving a parking stall without having sufficient room for tail swing, emphasizes this point.

6. Next example is making a tail swing with a conventional bus, when making a left turn.

a. In this example, the bus is positioned on the left hand side of the ground reference line.

b. Martin explains in this example the the bus will make a left hand turn and the back of the bus will swing out to the right.

c. The driver makes a full lock left on the steering wheel, checks both flat mirrors, then proceeds ahead until she has completed the maneuver. Next, they leave the bus to evaluate the left turn tail swing.

d. Martin explains that the back of the bus swings out to the right. He asks the driver how far over the ground reference line the back of the bus has swung out. She says about 2 feet.

e. Martin uses a ruler and measures the distance. It's exactly 20 inches. It's slightly less than the right turn. This could be a result of where the bus was set up initially.

f. Martin explains it's important to know the distance the bus swings out. This is important when you are navigating around parked cars, stop signs, etc.

g. Martin explains that if you are less than 2 feet from a problem object, you are at risk. But if you are 3 feet you won't have a problem.

Section Two - The Transit Bus

7. Martin does a demonstration for the new driver about the difference in overhang between the transit and Conventional bus.

8. **Right side tail swing on a transit bus**

a. Martin explains that on the transit bus with its shorter overhang the bus won't swing out as far on the right hand side.

b. Martin prepares for a right side tail swing making sure to check his mirrors and he puts the bus into a full lock left.

c. Demonstration of **right side tail swing.**

d. Martin kneels in front of right rear bumper and measures the tail swing. It's about 11 inches. He emphasizes the difference between the conventional and the transit.

e. Martin makes the point that the driver must understand the importance of the shorter tail swing with the transit bus.

f. Visual demonstration of the transit and conventional buses side by side. The demonstration provides drivers with a visual way to understand the difference between the 2 tail swings.

9. **Left tail swing on a transit bus**

a. Left hand side tail swing follows the same procedures as the right hand side tail swing.

b. Bus driver selects the gear, releases the brake, checks the mirrors and then does a full lock right on the steering wheel.

c. Bus stops and we see that the left rear bumper is approximately 12" over the ground reference line. This means that if the bus has clearance of 15" or more the bus will not collide with a problem object.

d. This concludes training exercise for tail swing. Next we will demonstrate how to evaluate tail swing when driving the bus in normal everyday conditions on the road.

10. **Stall Parking Exercise**

The hazards of leaving a parking stall:

a. In the first example Martin demonstrates some of the hazards in leaving a parking stall. Keep in mind that the bus is parked very close to another bus. They are side by side.

b. Martin goes through the proper sequence for making a full left turn. He makes a full lock left on the steering wheel.

c. The right side tail bumper of Martin's bus swings out directly at the bus in the adjacent stall.

d. Before Martin's bus collides with the bus next to him, he slams his foot on the brake, preventing a collision.

e In the second example, Martin doesn't make a full lock turn at the start of the turn. He makes a slight turn at the beginning.

f. When the bus gets further out, Martin makes a full lock turn. This allows the bus to clear the bus adjacent to it without any risk.

11. How to judge tail swing when approaching a problem object like a stop sign.

a. Driver must know the tail swing of the bus that they are operating. The driver must have an

understanding how much room is required to miss the problem object.

b. In this example, even thought it's a snug fit, there is sufficient room to clear the stop sign.

c. A critical component of judging the distance in knowing how to judge the distance, while looking into the flat mirror.

d. In this example, the driver was driving a conventional bus. The driver remembered to factor in the overhang of the bus he was operating.

12. Additional examples of judging tail swing when driving in the field.

a. In this example, the bus driver is driving in close proximity to traffic next to the bus.

b. If the driver turns the bus, before the car pulls ahead of him, the rear of the bus will collide with the car.

c. Drivers must be aware of tail swing whenever they are in close proximity to other vehicles.

d. In this final example, a bus enters an intersection and before completing the turn, the bus driver realizes that he's too close to a large truck that is sticking out into the traffic lane.

e. The driver stops the bus, waits for traffic to thin out and then backs the bus up and carefully navigates around the truck.

f. Bus drivers must never make a turn when they are unsure that they can clear a problem object.

g. All school bus drivers must understand and apply the principles of tail swing when operating their school bus.

TEST QUESTIONS

1. The overhang on all school buses is approximately the same, regardless of whether they are a transit or a conventional bus.
True_____ False_____

2. When 2 buses are parked side by side in a stall, the bus driver should make a full lock turn on the steering wheel at the beginning of the turn.
True_____ False_____

3. If a bus driver is 18” away from a problem object and is driving a transit bus, there will be sufficient room to clear the problem object.
True_____ False_____

4. If a bus driver is driving a conventional school bus and is 18” away from the problem object, there will be sufficient room to clear the problem object.
True_____ False_____

5. Using convex mirrors to monitor the tail swing on a bus is a good idea because the convex mirror covers a greater field of view than a flat mirror.
True_____ False_____

6. When making a right hand turn, tail swing occurs next to left rear bumper.
True_____ False_____

7. If a driver is in the middle of a busy intersection and he’s unsure that he can clear a problem object, the driver should back the bus back into the intersection, when it’s safe to do so, and then complete the turn.
True_____ False_____

8. It’s the responsibility of other drivers to make sure to stay clear of school buses when they are making turns, because buses are large and need more room to turn than cars.
True_____ False_____

9. The length of the bus determines the tail swing of the bus.
True_____ False_____

10. Drivers don’t have to worry about tail swing when approaching problem objects that aren’t on the street, because these objects are to far away to cause any problems.
True_____ False_____

Answers

1. False

2. False

3. True

4. False

5. False

6. True

7. True

8. False

9. False

10. False