

# Section 10: Pre-trip Vehicle Inspection Test

During the pre-trip inspection, you must show that the vehicle is safe to drive. You may have to walk around the vehicle and point to or touch each item and explain to the examiner what you are checking and why. You will NOT have to crawl under the hood or under the vehicle.

## **This Section Covers**

- ***Internal and External Inspections***

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Study the following vehicle parts for the type of vehicle you will be using during the CDL skills tests. You should be able to identify each part and tell the examiner what you are looking for or inspecting.

## **10.1 All Vehicles**

### Leaks/Hoses

- Look for puddles on the ground.
- Look for dripping fluids on underside of engine and transmission.
- Inspect hoses for condition and leaks.

- ***Engine Compartment (Engine Off)***

### Oil Level

- Indicate where dipstick is located.
- See that oil level is within safe operating range. Level must be above refill mark.

### Coolant Level

- Inspect reservoir sight glass, or
- (If engine is not hot), remove radiator cap and check for visible coolant level.

### Power Steering Fluid

- Indicate where power steering fluid dipstick is located.
- Check for adequate power steering fluid level. Level must be above refill mark.

### Engine Compartment Belts

- Check the following belts for snugness (up to 3/4 inch play at center of belt), cracks, or frays:
  - Power steering belt.
  - Water pump belt.

- Alternator belt.
- Air compressor belt.

**Note: If any of the components listed above are not belt driven, you must:**

- Tell the examiner which component(s) are not belt driven.
- Make sure component(s) are operating properly, are not damaged or leaking, and are mounted securely.

- **Cab Check/Engine Start**

Clutch/Gearshift

- Depress clutch.
- Place gearshift lever in neutral (or park, for automatic transmissions).
- Start engine, then release clutch slowly.

Oil Pressure Gauge

- Make sure oil pressure gauge is working.
- Check that pressure gauge shows increasing or normal oil pressure or that the warning light goes off.
- If equipped, oil temperature gauge should begin a gradual rise to the normal operating range.

Temperature Gauge

- Make sure the temperature gauge is working.
- Temperature should begin to climb to the normal operating range or temperature light should be off.

Ammeter/Voltmeter

- Check that gauges show alternator and/or generator is charging or that warning light is off.

Mirrors and Windshield

- Mirrors should be clean and adjusted properly from the inside.
- Windshield should be clean with no illegal stickers, no obstructions, or damage to the glass.

Emergency Equipment

- Check for spare electrical fuses.
- Check for three red reflective triangles.
- Check for a properly charged and rated fire extinguisher.

**Note:** If the vehicle is not equipped with electrical fuses, you must mention this to the examiner.

### Steering Play

- **Non-power steering:** Check for excessive play by turning steering wheel back and forth. Play should not exceed 10 degrees (or about two inches on a 20-inch wheel).
- **Power steering:** With the engine running, check for excessive play by turning the steering wheel back and forth. Play should not exceed 10 degrees (or about two inches on a 20-inch wheel) before front left wheel barely moves.

### Wipers/Washers

- Check that wiper arms and blades are secure, not damaged, and operate smoothly.
- If equipped, windshield washers must operate correctly.

### Lighting Indicators

- Test that dash indicators work when corresponding lights are turned on:
  - Left turn signal.
  - Right turn signal.
  - Four-way emergency flashers.
  - High beam headlight.

### Horn

- Check that air horn and/or electric horn work.

### Heater/Defroster

- Test that the heater and defroster work.

### Parking Brake Check

- Apply parking brake only and make sure that it will hold the vehicle by shifting into a lower gear and gently pulling against the brake.

### Hydraulic Brake Check

- Pump the brake pedal three times, then hold it down for five seconds. The brake pedal should not move (depress) during the five seconds.
- If equipped with a hydraulic brake reserve (back-up) system, with the key off, depress the brake pedal and listen for the sound of the reserve system electric motor.
- Check that the warning buzzer or light is off.

### Air Brake Check (air brake equipped vehicles only)

- Failure to perform an air brake check will result in an automatic failure of the vehicle inspection test. Air brake safety devices vary. However, this procedure is designed to see that any safety device operates correctly as air pressure drops from normal to a low air condition. For safety purposes, in areas where an incline is present, you will use wheel chocks during the air brake check. The proper procedures for inspecting the air brake system are as follows:
  - With the engine running, build the air pressure to governed cut-out (100-125 psi). Shut off the engine, chock your wheels, if necessary, release the tractor protection valve and parking brake (push in), fully apply the foot brake and hold it for one minute. Check the air gauge to see if the air pressure drops more than three pounds in one minute (**single vehicle**) or four pounds in one minute (**combination vehicle**).
  - Begin fanning off the air pressure by rapidly applying and releasing the foot brake. Low air warning devices (buzzer, light, flag) should activate before air pressure drops below 60 psi.
  - Continue to fan off the air pressure. At approximately 40 psi on a tractor-trailer combination vehicle, the tractor protection valve and parking brake valve should close (pop out). On other combination vehicle types and single vehicle types, the parking brake valve should close (pop out).

### Safety Belt

- Check that the safety belt is securely mounted, adjusts, and latches properly.

### Lights/Reflectors

- Check that all external lights and reflective equipment are clean and functional. Light and reflector checks include:
  - Clearance lights (red on rear, amber elsewhere).
  - Headlights (high and low beams).
  - Taillights.
  - Turn signals.
  - Four-way flashers.
  - Brake lights.
  - Red reflectors (on rear) and amber reflectors (elsewhere).

**Note: Checks of brake, turn signal and four-way flasher functions must be done separately.**

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### Steering Box/Hoses

- Check that the steering box is securely mounted and not leaking. Look for any missing nuts, bolts, and cotter keys.
- Check for power steering fluid leaks or damage to power steering hoses.

### Steering Linkage

- See that connecting links, arms, and rods **from the steering box to the wheel** are not worn or cracked.
- Check that joints and sockets are not worn or loose and that there are no missing nuts, bolts, or cotter keys.

### Springs/Air/Torque

- Look for missing, shifted, cracked, or broken leaf springs.
- Look for broken or distorted coil springs.
- If vehicle is equipped with torsion bars, torque arms, or other types of suspension components, check that they are not damaged and are mounted securely.
- Air ride suspension should be checked for damage and leaks.

### Mounts

- Look for cracked or broken spring hangers, missing or damaged bushings, and broken, loose, or missing bolts, u-bolts or other axle mounting parts. (The mounts should be checked at each point where they are secured to the vehicle frame and axle[s]).

### Shock Absorbers

- See that shock absorbers are secure and that there are no leaks.

**Note:** Be prepared to perform the same suspension components inspection on every axle (power unit and trailer, if equipped).

### Slack Adjustors

- Look for broken, loose, or missing parts.
- The angle between the push rod and adjustor arm should be a little over 90 degrees when the brakes are released, and not less than 90 degrees when the brakes are applied.

## 10.2 External Inspection (School Bus/Truck/ Tractor)

- **Steering**

- **Suspension**

- **Brakes**

- When pulled by hand, the brake rod should not move more than one inch (with the brakes released).

#### Brake Chambers

- See that brake chambers are not leaking, cracked, or dented and are mounted securely.

#### Brake Hoses/Lines

- Look for cracked, worn, or leaking hoses, lines, and couplings.

#### Drum Brake

- Check for cracks, dents, or holes. Also check for loose or missing bolts.
- Brake linings (where visible) should not be worn dangerously thin.

#### Brake Linings

- On some brake drums, there are openings where the brake linings can be seen from outside the drum. For this type of drum, check that a visible amount of brake lining is showing.

**Note:** Be prepared to perform the same brake components inspection on every axle (power unit and trailer, if equipped).

- **Wheels**

#### Rims

- Check for damaged or bent rims. Rims cannot have welding repairs.

#### Tires

- The following items must be inspected on every tire:
  - **Tread depth:** Check for minimum tread depth (4/32 on steering axle tires, 2/32 on all other tires).
  - **Tire condition:** Check that tread is evenly worn and look for cuts or other damage to tread or sidewalls. Also, make sure that valve caps and stems are not missing, broken, or damaged.
  - **Tire inflation:** Check for proper inflation by using a tire gauge, or inflation by striking tires with a mallet or other similar device.

**Note:** You **will not** get credit if you simply kick the tires to check for proper inflation.

### Hub Oil Seals/Axle Seals

- See that hub oil/grease seals and axle seals are not leaking and, if wheel has a sight glass, oil level is adequate.

### Lug Nuts

- Check that all lug nuts are present, free of cracks and distortions, and show no signs of looseness such as rust trails or shiny threads.
- Make sure all bolt holes are not cracked or distorted.

### Spacers

- If equipped, check that spacers are not bent, damaged, or rusted through.
- Spacers should be evenly centered, with the dual wheels and tires evenly separated.

**Note:** Be prepared to perform the same wheel inspection on every axle (power unit and trailer, if equipped).

### Door(s)/Mirror(s)

- Check that door(s) are not damaged and that they open and close properly from the outside.
- Hinges should be secure with seals intact.
- Check that mirror(s) and mirror brackets are not damaged and are mounted securely with no loose fittings.

- **Side of Vehicle**

### Fuel Tank

- Check that tank(s) are secure, cap(s) are tight, and that there are no leaks from tank(s) or lines.

### Battery/Box

- Wherever located, see that battery(s) are secure, connections are tight, and cell caps are present.
- Battery connections should not show signs of excessive corrosion.
- Battery box and cover or door must be secure.

### Drive Shaft

- See that drive shaft is not bent or cracked.
- Couplings should be secure and free of foreign objects.

### Exhaust System

- Check system for damage and signs of leaks such as rust or carbon soot.
- System should be connected tightly and mounted securely.

### Frame

- Look for cracks, broken welds, holes or other damage to the longitudinal frame members, cross members, box, and floor.

## • **Rear of Vehicle**

### Splash Guards

- If equipped, check that splash guards or mud flaps are not damaged and are mounted securely.

### Doors/Ties/Lifts

- Check that doors and hinges are not damaged and that they open, close, and latch properly from the outside, if equipped.
- Ties, straps, chains, and binders must also be secure.
- If equipped with a cargo lift, look for leaking, damaged or missing parts and explain how it should be checked for correct operation.
- Lift must be fully retracted and latched securely.

## • **Tractor/Coupling**

### Air/Electric Lines

- Listen for air leaks. Check that air hoses and electrical lines are not cut, chafed, spliced, or worn (steel braid should not show through).
- Make sure air and electrical lines are not tangled, pinched, or dragging against tractor parts.

### Catwalk

- Check that the catwalk is solid, clear of objects, and securely bolted to tractor frame.

### Mounting Bolts

- Look for loose or missing mounting brackets, clamps, bolts, or nuts. Both the fifth wheel and the slide mounting must be solidly attached.
- On other types of coupling systems (i.e., ball hitch, pintle hook, etc.), inspect all coupling components and mounting brackets for missing or broken parts.

### Locking Jaws

- Look into fifth wheel gap and check that locking jaws are fully closed around the kingpin.
- On other types of coupling systems (i.e., ball hitch, pintle hook, etc.), inspect the locking mechanism for missing or broken parts and make sure it is locked securely. If present, safety cables or chains must be secure and free of kinks and excessive slack.

### Platform (fifth wheel)

- Check for cracks or breaks in the platform structure which supports the fifth wheel skid plate.

### Release Arm (fifth wheel)

- If equipped, make sure the release arm is in the engaged position and the safety latch is in place.

### Kingpin/Apron/Gap

- Check that the kingpin is not bent.
- Make sure the visible part of the apron is not bent, cracked, or broken.
- Check that the trailer is laying flat on the fifth wheel skid plate (no gap).

### Locking Pins (fifth wheel)

- If equipped, look for loose or missing pins in the slide mechanism of the sliding fifth wheel. If air powered, check for leaks.
- Make sure locking pins are fully engaged.
- Check that the fifth wheel is positioned properly so that the tractor frame will clear the landing gear during turns.

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### Emergency Equipment

- In addition to checking for spare electrical fuses (if equipped), three red reflective triangles, and a properly charged and rated fire extinguisher, school bus drivers must also inspect the following emergency equipment:
  - Three red-burning flares (fusees).
  - A nine-item first-aid kit.

### **10.3 School Bus Only**

### Lighting Indicators

- In addition to checking the lighting indicators listed in Section 10.2 of this manual, school bus drivers must also check the following lighting indicators (internal panel lights):
  - Alternately flashing amber lights indicator, if equipped.
  - Alternately flashing red lights indicator.
  - Strobe light indicator, if equipped.

### Lights/Reflectors

- In addition to checking the lights and reflective devices listed in Section 10.2 of this manual, school bus drivers must also check the following (external) lights and reflectors:
  - Strobe light, if equipped.
  - Stop arm light, if equipped.
  - Alternately flashing amber lights, if equipped.
  - Alternately flashing red lights.

### Stop Arm

- If equipped, check the stop arm to see that it is mounted securely to the frame of the vehicle. Also, check for loose fittings and damage.

### Passenger Entry/Lift

- Check that the entry door is not damaged, operates smoothly, and closes securely from the inside.
- Hand rails are secure and the step light is working, if equipped.
- The entry steps must be clear with the treads not loose or worn excessively.
- If equipped with a handicap lift, look for leaking, damaged, or missing parts and explain how lift should be checked for correct operation. Lift must be fully retracted and latched securely.

### Emergency Exit

- Make sure that all emergency exits are not damaged, operate smoothly, and close securely from the inside.
- Check that any emergency exit warning devices are working.

### Seating

- Look for broken seat frames and check that seat frames are firmly attached to the floor.
- Check that seat cushions are attached securely to the seat frames.

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### Air/Electrical Connections

- Check that trailer air connectors are sealed and in good condition.
- Make sure glad hands are locked in place, free of damage or air leaks.
- Make sure the trailer electrical plug is firmly seated and locked in place.

### Header Board

- If equipped, check the header board to see that it is secure, free of damage, and strong enough to contain cargo.
- If equipped, the canvas or tarp carrier must be mounted and fastened securely.
- On enclosed trailers, check the front area for signs of damage such as cracks, bulges, or holes.

### Landing Gear

- Check that the landing gear is fully raised, has no missing parts, crank handle is secure, and the support frame is not damaged.
- If power operated, check for air or hydraulic leaks.

### Doors/Ties/Lifts

- If equipped, check that doors are not damaged. Check that doors open, close, and latch properly from the outside.
- Check that ties, straps, chains, and binders are secure.
- If equipped with a cargo lift, look for leaking, damaged or missing parts and explain how it should be checked for correct operation.
- Lift should be fully retracted and latched securely.

### Frame

- Look for cracks, broken welds, holes or other damage to the frame, cross members, box, and floor.

### Tandem Release Arm/Locking Pins

- If equipped, make sure the locking pins are locked in place and release arm is secured.

## 10.4 Trailer

### • **Trailer Front**

### • **Side of Trailer**

- **Remainder of Trailer**

Remainder of Trailer

- Please refer to Section 10.2 of this manual for detailed inspection procedures regarding the following components:
    - Wheels.
    - Suspension system.
    - Brakes.
    - Doors/ties/lift.
    - Splash guards.
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## 10.5 Coach/Transit Bus

### Passenger Entry/Lift

- **Passenger Items**

- Check that entry doors operate smoothly and close securely from the inside.
- Check that hand rails are secure and, if equipped, that the step light(s) are working.
- Check that the entry steps are clear, with the treads not loose or worn excessively.
- If equipped with a handicap lift, look for any leaking, damaged or missing part, and explain how it should be checked for correct operation.
- Lift should be fully retracted and latched securely.

### Emergency Exits

- Make sure that all emergency exits are not damaged, operate smoothly, and close securely from the inside.
- Check that any emergency exit warning devices are working.

### Passenger Seating

- Look for broken seat frames and check that seat frames are firmly attached to the floor.
- Check that seat cushions are attached securely to the seat frames.

### Doors/Mirrors

- **Entry/Exit**

- Check that entry/exit doors are not damaged and operate smoothly from the outside. Hinges should be secure with seals intact.
- Make sure that the passenger exit mirrors and all external mirrors and mirror brackets are not damaged and are mounted securely with no loose fittings.

### Level/Air Leaks

- See that the vehicle is sitting level (front and rear), and if air-equipped, check for audible air leaks from the suspension system.

### Fuel Tank(s)

- See that fuel tank(s) are secure with no leaks from tank(s) or lines.

### Compartments

- Check that baggage and all other exterior compartment doors are not damaged, operate properly, and latch securely.

### Battery/Box

- Wherever located, see that battery(s) are secure, connections are tight, and cell caps are present.
- Battery connections should not show signs of excessive corrosion.
- Check that battery box and cover or door is not damaged and is secure.

### Remainder of Vehicle

- Please refer to Section 10.2 of this manual for detailed inspection procedures regarding the following components:
  - Wheels.

**Remember, the pre-trip vehicle inspection must be passed before you can proceed to the basic vehicle control skills test.**

- ***External Inspection of Coach/Transit Bus***

- ***Remainder of Coach/Transit Bus***