

ELDT.PRO Pre-Trip Inspection Master Study Guide

Train Smart. Drive Safe. Succeed.

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INTRODUCTION: THE ELDT.PRO METHOD

Welcome to the **ELDT.PRO Pre-Trip Bible**. This manual is designed to help you master the CDL Class A Pre-Trip Inspection. The DMV examiner will evaluate your ability to identify, inspect, and explain every critical safety component on your commercial vehicle. Memorization is easier when you use our core memory tricks and systematic workflows.

The Gold Formulas of Pre-Trip Inspection

Instead of memorizing long paragraphs for each part, use these acronyms to describe almost every component on the truck:

Acronym	English Definition	Technical Explanation
PMS	Properly Mounted and Secure	Component is firmly attached, not loose, and has no missing fasteners.
CBB	Not Cracked, Bent, or Broken	Metal parts are structurally intact, without cracks, warps, or damage.
MBN	No Missing Bolts or Nuts	All fasteners are present and securely tightened.
ABC	No Aberrations, Bubbles, or Cuts	Rubber hoses and tires show no abnormal wear, swelling, or lacerations.

Acronym	English Definition	Technical Explanation
WP	Working Properly	The gauge, light, indicator, or switch performs its intended function.

❑ **IMPORTANT — PSI numbers and exact wording vary by state.**

This guide follows the FMCSA model standards used in both the Arizona and Texas CDL programs. Most numbers are federal and identical in every state, but a few thresholds and the exact required speech can differ. Always confirm the exact figures in your state CDL handbook (Arizona DPS or Texas DPS) before your exam — the examiner scores you against your state's manual.

SECTION 1: IN-CAB INSPECTION & ENGINE START (AIR BRAKE TEST)

This section is the most critical part of your practical test. An error in the 3-Step Air Brake Test is an **automatic failure**. Follow this step-by-step guide carefully.

Step 1: Safe Start & Engine Start Sequence

- Seat Belt:** Fasten your seat belt. Verify it latches and unlatches smoothly. Check that the belt is PMS, not frayed or cut, and adjusts properly.
Speech: "My seat belt is PMS, not cracked, bent, or broken. The fabric has no cuts, rips, or frays. It latches and unlatches properly."
- Safe Start:** Depress the clutch fully, make sure the gear shifter is in Neutral, and verify that both the yellow parking brake and red trailer air supply valves are pulled out (applied). Turn the key to the "ON" position to let the ABS light perform its self-test and turn off, then start the engine.
Speech: "I am performing a safe start. The transmission is in Neutral, my clutch is in, and the parking brakes are applied."
- Compressor Governor Cut-Out:** Run the engine until air pressure builds up. Listen for the air compressor governor release ("sneeze") at approximately 120 to 140 PSI.
Speech: "My air pressure gauges indicate that the pressure is building up to between 120 and 140 PSI. I hear the air compressor governor cut out, which means it is Working Properly (WP)."

Step 2: The 3-Step Air Brake Test

IMPORTANT: You must verbally state the pressures and ask the examiner to time you where required.

1. Step 1: Applied Leak Test (Leak)

- With the air pressure fully charged (120-140 PSI), turn the engine OFF.
- Turn the ignition key back to the ON position (so the electrical gauges function).
- Push in both brake valves (yellow and red) to release the parking brakes. Let the air settle.
- Depress the brake pedal firmly and hold it down. Ask the examiner: *"Sir, please time me for one minute. The air pressure must not lose more than 4 PSI in one minute for this combination vehicle."*
- After one minute, release the pedal and say: *"The minute is up. My air gauges show we did not lose more than 4 PSI. The system has no leaks."*

2. Step 2: Low Air Warning Signal (Alarm)

- With the ignition key still in the ON position and the engine off, pump (fan) the foot brake pedal repeatedly.
- Watch the pressure gauges. The low-pressure warning light and buzzer must activate at or before 60 PSI.
- Point to the warning indicators and say: *"Both the low air warning light and buzzer have activated at or before 60 PSI. They are Working Properly."*

3. Step 3: Emergency Spring Brakes Activation (Pop-Out)

STEP 3: EMERGENCY SPRING BRAKES ACTIVATION (POP-OUT)

1. Continue fanning the foot brake pedal to lower the air pressure further.
2. Between **20 and 45 PSI**, both the **yellow** (parking) and **red** (trailer) valve buttons must **pop out** automatically.
3. Take your **hands off** the buttons so the examiner can see them pop out.
4. Say: **"Both emergency valves have popped out between 20 and 45 PSI. The emergency spring brakes are Working Properly."**

POP OUT

POP OUT

YELLOW (PARKING) VALVE

RED (TRAILER) VALVE

BETWEEN 20 AND 45 PSI

25 PSI

25 PSI

25 PSI

FAN THE FOOT BRAKE

BOTH EMERGENCY VALVES HAVE POPPED OUT BETWEEN 20 AND 45 PSI. THE EMERGENCY SPRING BRAKES ARE WORKING PROPERLY.

- ### Step 3: Emergency Equipment & Cab Controls

Component	Physical Action	Inspection Criteria & Verbal Speech
Fire Extinguisher	Touch and point to the extinguisher.	"My fire extinguisher is PMS, not CBB, fully charged, ABC rated, and the safety pin is present."

Component	Physical Action	Inspection Criteria & Verbal Speech
Reflective Triangles	Point to the red storage box.	<i>"I have three red reflective emergency triangles. They are PMS, not CBB, and ready for road use."</i>
Spare Fuses	Point to the glovebox / panel.	<i>"I have spare electrical fuses of various amperages in the glovebox."</i>
Windshield & Wipers	Touch the glass and activate wipers/washers.	<i>"My windshield is PMS, clean, has no cracks or illegal stickers. My wiper arms and blades are PMS, the rubber is not torn, and the washer fluid sprays WP."</i>
Heater & Defroster	Turn on fan and feel air on vents.	<i>"My heater blower and windshield defroster are Working Properly. I can feel the airflow."</i>
Horns (City & Air)	Honk the city horn and pull the air cord.	<i>"Both my city electric horn and air horn are Working Properly."</i>

SECTION 2: ENGINE COMPARTMENT (UNDER THE HOOD)

Perform this inspection on the passenger side first (for fluids and belts) and then the driver's side (steering and air systems).

Step 1: Fluids & Leaks

- Engine Oil:** Pull out the dipstick, wipe it clean, reinsert it, and verify the oil level is above the "Add" mark.
Speech: "My engine oil level is within safe operating range, above the fill line."
- Coolant Level:** Verify the coolant level is visible in the sight glass of the reservoir tank.

Check hoses for ABC and leaks.

Speech: "My coolant reservoir is PMS, not cracked, and filled to the proper level. Hoses are PMS, not ABC, and have no leaks."

- **Power Steering Fluid:** Check the dipstick or sight glass. Hoses must have no ABC or fluid leaks.

Speech: "My power steering reservoir is PMS, fluid is at the proper level, and there are no leaks."

Step 2: Belt-Driven vs. Gear-Driven Components

Identify each component and tell the examiner how it is powered:

Component	Drive Type	Inspection Speech
Water Pump	Belt-Driven	<i>"My water pump is PMS, not leaking, and is belt-driven. The belt is tight, with no more than 3/4 inch of play."</i>
Alternator	Belt-Driven	<i>"My alternator is PMS, wires are secure, and it is belt-driven. No frays or cracks on the belt."</i>
Air Compressor	Gear-Driven	<i>"My air compressor is PMS, gear-driven, has no air leaks, and no coolant/oil leaks."</i>
Power Steering Pump	Gear-Driven	<i>"My power steering pump is PMS, gear-driven, and has no fluid leaks."</i>

SECTION 3: STEERING SYSTEM & FRONT SUSPENSION

Step 1: Steering Linkage

Inspect from the steering column down to the wheel hub:

- **Steering Column / Shaft:** PMS, not bent or broken, U-joints are well-lubricated.
- **Steering Gear Box:** PMS, no missing bolts/nuts, and no fluid leaks.

- **Steering Linkage:** Drag link, pitman arm, steering arm, and tie rod. All are PMS, CBB, and secured with castle nuts and cotter pins.

Speech: "My steering linkage components are PMS, not cracked, bent, or broken. All castle nuts are locked with cotter pins."

Step 2: Suspension Components

- **Spring Mounts & Hangers:** PMS, not cracked, none missing. Securely attached to the frame.
- **Leaf Springs:** PMS, not shifted, cracked, bent, or broken. None are missing.
- **U-Bolts:** PMS, not CBB, no shiny metal threads indicating looseness, all nuts are tight.
- **Shock Absorber:** PMS, straight, and has no signs of hydraulic fluid leaks.

Step 3: Steering Wheel Play Test

With the engine running (power steering active), gently turn the steering wheel until you feel the front wheels begin to move. Free play should be no more than **10 degrees** (about 2 inches on a 20-inch wheel) for a vehicle with power steering. More play than that means worn steering components and is a defect.

Speech: "With the engine on, my steering wheel has no more than 10 degrees, or about 2 inches, of free play. The steering is tight and Working Properly."

SECTION 4: FRONT WHEEL END (BRAKES & TIRES)

Step 1: Brake Components

- **Brake Hose & Line:** PMS, no ABC, and no air leaks.
- **Brake Chamber:** PMS, not CBB, and no air leaks. Clamp is secure.
- **Slack Adjuster & Push Rod:** PMS, not CBB. When brakes are released, pulling the push rod by hand must not move more than 1 inch.
- **Brake Drum & Linings:** Brake drum is PMS, not CBB, and free of oil, grease, or contaminants. Brake linings are not worn dangerously thin (at least 1/4 inch thickness).

Step 2: Tires & Rims

- **Tire Tread Depth:** Minimum of **4/32 inch** on steering tires. Must be evenly worn, with no recaps allowed on steer tires.
- **Tire Condition:** Check inflation with a tire pressure gauge (approx. 100-110 PSI). Check sidewalls for ABC.
- **Rims:** PMS, not CBB, no welding repairs (which is illegal).
- **Lug Nuts:** PMS, all present, no rust trails or shiny metal threads (signs of loose nuts).
- **Hub Oil Seal:** PMS, not leaking, oil level is adequate.

SECTION 5: COUPLING SYSTEM (FIFTH WHEEL)

THIS SYSTEM *CONNECTS THE TRACTOR AND TRAILER.*
INSPECT EVERY CONNECTION CAREFULLY.



COMPONENT	WHAT TO INSPECT (VISUAL & PHYSICAL)	REQUIRED VERBAL SPEECH
AIR & ELECTRICAL LINES 	- Check glad hand seals and electric plug connection. - Lines must not drag on cat walk.	"My air lines have no ABC and no leaks." Glad hands are secure with good rubber seals. Electric line is insulated and locked."
APRON & SKID PLATE 	Check for grease and zero space between apron and skid plate.	"The trailer apron is PMS and not CBB. The fifth wheel skid plate is properly greased." There is zero gap between them."
KINGPIN & LOCKING JAWS 	Look underneath the coupling area.	"The kingpin is PMS and not CBB. The locking jaws are closed completely around the shank of the kingpin."
RELEASE ARM & PINS 	Check physical position of the arm and sliding pins.	"The release handle is in the fully locked position. Safety latch is engaged. Sliding fifth wheel pins are locked out."

A SECURE CONNECTION IS ESSENTIAL FOR SAFE OPERATION. ALWAYS INSPECT, TEST AND VERBALIZE.

This system connects the tractor and trailer. Inspect every connection carefully.

Component	What to Inspect (Visual & Physical)	Required Verbal Speech
Air & Electrical Lines	Check glad hand seals and electric plug connection. Lines must not drag on cat walk.	"My air lines have no ABC and no leaks. Glad hands are secure with good rubber seals. Electric line is insulated and locked."
Apron & Skid Plate	Check for grease and zero space between apron and skid plate.	"The trailer apron is PMS and not CBB. The fifth wheel skid plate is properly greased. There is zero gap between them."

Component	What to Inspect (Visual & Physical)	Required Verbal Speech
Kingpin & Locking Jaws	Look underneath the coupling area.	<i>"The kingpin is PMS and not CBB. The locking jaws are closed completely around the shank of the kingpin."</i>
Release Arm & Pins	Check physical position of the arm and sliding pins.	<i>"The release handle is in the fully locked position. Safety latch is engaged. Sliding fifth wheel pins are locked out."</i>

SECTION 6: TRAILER & REAR SUSPENSION

Walk along the side and inspect the structural integrity of the trailer.

- **Landing Gear:** PMS, not CBB, crank handle is secure, and fully raised for travel. Clearance pads are intact.
- **Trailer Frame & Crossmembers:** PMS, no cracks, bent sections, or broken welds in the main rails and supporting crossmembers.
- **Tandem Release Arm & Pins:** Locking pins must be fully extended through the slider rail holes. Release arm is locked.
- **Trailer Tires & Wheels:** Minimum tread depth is **2/32 inch**. Recaps are allowed on trailer axles. Spacing between dual tires must be free of debris and rims must not touch.

SECTION 7: LIGHTS, REFLECTORS & SIGNALS

Inoperative lights are a "gateway violation" — they give an officer probable cause for a full inspection. Walk the full perimeter with the lights on and confirm each one before the exam.

Front of Vehicle

4. **Headlights:** Both low beam and high beam work. Lenses are PMS, not cracked or discolored.
5. **Turn Signals & 4-Way Flashers:** Amber in front, red in rear. All flash Working Properly.
6. **Clearance & Marker Lights:** Amber side markers and clearance lights are PMS and function.

Rear of Vehicle

7. **Brake Lights, Tail Lights & Turn Signals:** All red/amber, PMS, and Working Properly. Lenses not cracked.

8. **License Plate Light:** White, works, and illuminates the plate.
9. **Reflectors & Reflective Tape:** Red on rear, amber on sides. Clean, PMS, and the correct color for their position.

Speech: "All my lights, signals, and reflectors are PMS, not cracked, the correct color, and Working Properly."

STUDENT CHECKLIST: THE QUICK REVIEW FLOW

Verify these steps before starting the exam:

- ☐ Clutch in, transmission in neutral, parking brakes applied.
- ☐ Engine started, air compressor built to 120-140 PSI.
- ☐ Key turned to ON, engine turned OFF.
- ☐ 1 minute held on brake pedal to check leaks (< 4 PSI loss).
- ☐ Fan brakes to test warning signal at/before 60 PSI.
- ☐ Continue fanning to check emergency valves pop out (20-45 PSI).

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Arizona & Texas Commercial Driver's License Training Programs