

# AAA CDL School

## **Class rules and guidelines:**

1. Unless otherwise indicated, class hours are:  
Sunday 08:30 am – 04:30 pm  
Monday 08:30 am – 04:30 pm  
Tuesday 08:30 am – 04:30 pm  
Wednesday 08:30 am – 04:30 pm  
Thursday 08:30 am – 04:30 pm  
Friday 08:30 am – 12:30 pm  
Saturday 08:30 am – 04:30 pm
2. Class starts promptly at 08:30 am every day unless otherwise indicated. Don't be late.
3. You are required to sign in at the beginning of class every day.
4. If you know you will not be at AAA CDL School a particular day, let the instructors know.
5. You are required to have your drivers license, CDL learners permit and DOT card with you at all times.
6. Cell phone usage is NOT permitted during class as well as behind the wheel.
7. Be respectful of others.
8. Be patient with others.
9. Clean up after yourself! This includes the classroom, the backup skills yard and the trucks.

## **Testing fees:**

You will see by the following fee schedule that it is in your best interest to know the material provided in this document and listen to the instructors.

1. The first test is included by the class fee that must be paid in full prior to testing.
2. The second test will cost you \$250 paid to AAA CDL School.
3. The third test will cost you \$250 paid to AAA CDL School.
4. The forth test will cost you \$1500 paid to AAA CDL. You are required to perform a certain number of hours at AAA CDL School and a certificate from DMV before retesting at DMV.
5. Any additional tests will cost you \$250 per DMV test.

# AAA CDL SCHOOL

## Pre-Trip Inspection for Class A Vehicles

**Background:** Safety is the most important reason a driver should inspect his vehicle. Federal and state laws require drivers to inspect their vehicle before (Pre-Trip) and after (Post-Trip) every trip.

**Students:** During the pre-trip inspection, you must show that the vehicle is safe to operate. You need to touch or point to each of the parts of your vehicle listed below. Name the part and explain what damage or problems you might find. All axles touching the ground on the driver side of the vehicle must be inspected.

**Duration:** The Pre-trip inspection must be completed in 60 minutes or less.

**DMV Pre-trip Test Points:** You are required to get a minimum 67% to pass. You start with 100 points. Each item you fail to point out or correctly describe points are deducted.

Coupling System – If this is skipped you fail. If you get parts wrong you will fail.

Brake Integrity Test – If you get any step of this wrong and fail to start the brake integrity test over from the beginning you will fail.

**DMV Driving / Backing Skills:** You are given 12 points total for the backing skills.

Points are deducted for the following:

1. Crossing or touching the line – 1 point per tire that touches the line.  
(ex. If you cross the line with the front tire, 1 point is deducted. If you pull forward and cross the line again, 1 more point is deducted)
2. Hitting a traffic cone – 2 points per tire.
3. Exceeding the allowed number of pull-ups per test – 1 point per pull-up.  
(A pull-up means anytime the vehicle moves forward 1 inch or 2.54 cm)
4. Indicating you are complete with a test when you are not – 10 points  
(ex. Straight backup your vehicle needs to pass completely through the box. If you indicate you are done by honking the city horn and the front bumper is still inside the coned off area.)

### Youtube links:

[https://www.youtube.com/watch?v=xb\\_OotgnCDQ](https://www.youtube.com/watch?v=xb_OotgnCDQ)

<https://www.youtube.com/watch?v=DYb8aHQ-Hc4>

### **Front of the Vehicle Leaks:**



Check under the engine for any kind of leaks and tell the tester:

"I'm looking for engine oil, transmission oil, power steering fluid and coolant fluid. I see no leaks."

### **Front of the Vehicle Lights:**



Touch every light or point to it if you can not reach it. Going from top to bottom:

- I have 3 ID lights clear in color on the tractor
- I have 2 Clearance lights clear in color
- This is my right turn signal, left turn signal and 4-way flasher amber in color
- These are my headlights and high-beams clear in color

All the lights on the front of my vehicle are clean, not cracked or broken, no missing screws, properly attached and no condensation.

### **CHECK YOUR LIGHTS:**

Ask the tester "Mr. / Mrs. tester, would you like to help me check my lights please?"

Get in the truck and check ALL your lights. Make sure the Key is in the ON POSITION.



- **Front:**
  1. Headlights?
  2. High-beam?
  3. Left turn signal?
  4. Right turn signal?
  5. 4-way flashers?
  6. ID and clearance lights?
- **Combination lights:**
  1. Left turn signal?
  2. Right turn signal?
  3. 4-way flashers?
  4. Brake lights?
  5. Reverse light?
- **Back of the trailer:**
  1. Left turn signal?
  2. Right turn signal?
  3. 4-way flasher?
  4. Brake lights
  5. ID lights?



**SAY THANK YOU TO THE TESTER WHEN YOU FINISH THE LIGHTS  
and BRING THE KEY OUT WITH YOU.**



### **Exhaust System:**

I 'm checking my exhaust pipe for cracks, holes and missing or loose bolts and nuts. I don't see rust or black/carbon soot that will indicate leaks. The exhaust system is connected tightly and mounted securely.

## Engine Compartment - Passenger Side

(Open the hood)

### **Alternator:**

This is my alternator, it is not cracked, dented or broken. There are no non-factory or illegal welds. It does not have any missing or loose bolts and nuts. The wires are not burnt or damaged. The alternator is belt driven. The belt is not cracked, frayed or dry rotted. The belt has proper tension and has about  $\frac{3}{4}$  inch play at the center.

### **Water Pump:**

This is my water pump. It is not cracked, dented or broken. There are no non-factory or illegal welds. It does not have any missing or loose bolts or nuts. It is not leaking. The tube (or hose) is not cracked, bent, or broken. The tube is not leaking and the connections or fittings are tight. The water pump is belt driven. The belt is not cracked, frayed or dry rotted. The belt has proper tension and has about  $\frac{3}{4}$  inch play at the center.

### **Engine Oil Level:** *ONLY explain how to check the oil.*

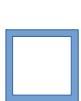
Here is the Engine oil dip stick and Engine oil fill tube. I check the oil level like this:

1. I pull out the dip stick
2. Wipe the dipstick off
3. Re-insert the dipstick
4. Pull the dipstick out again
5. See the level

I will add oil in the oil fill tube if it's low. I do not need to add oil now; the level is in the normal range.

## Engine Compartment - Drivers Side

### Coolant Level:



This is my coolant fluid reservoir. I can see that it is filled to the proper level. It is properly or securely mounted. The hose is not cracked, frayed or dry rotted. The hose is not leaking. If I need to add more coolant, I will remove the cap only **when the engine is cold** and add coolant as needed.



### Air Compressor:

This is my air compressor. It is not leaking air. It is not cracked, dented or broken. There are no non-factory or illegal welds. It does not have any missing or loose bolts or nuts. The hoses are not cracked or frayed. They are not leaking and the connections or fittings are tight. The air compressor is not belt driven, it is gear driven.



### Power Steering Fluid:

This is my power steering reservoir. I can see that it is filled to the proper level. It is properly or securely mounted. The hoses are not cracked, frayed or dry rotted. If I need to add more power steering fluid, I will remove the cap and add it here. The power steering is pump driven.

## Steering and Linkage – Drivers Side



### Steering and Linkage:

This is the Steering Wheel Shaft and U-Joint. It is not cracked, bent or broken. There are no non-factory or illegal welds. It does not have any missing or loose bolts or nuts. The u-joint is properly lubricated.



This is my Steering Gear Box. It is not cracked, dented or broken. There are no non-factory or illegal welds. It does not have any missing or loose bolts or nuts. It is not leaking. The hoses are not cracked, frayed or dry rotted. They are not leaking and the connections or fittings are tight.



This is the Pitman Arm and this is my Drag Link. They are not cracked, bent or broken. There are no non-factory or illegal welds. They are properly lubricated. These are my 3 castle nuts. They are tight and the cotter pins are present. (Point to the 3 castle nuts)

# Tractor - Front Suspension, Brakes, Wheel and Tire

## Front Tractor Suspension:



This is my front leaf mount, my rear leaf spring mount and U-Bolts. They are not cracked, dented or broken. There are no non-factory or illegal welds. They do not have any missing or loose bolts or nuts.



These are my leaf springs. They are not cracked, bent or broken. There are no non-factory or illegal welds. They are aligned and not shifted. They are not missing; if  $\frac{1}{4}$  (25%) or more are missing my truck would be taken out of service.



This is my shock absorber. It is not cracked or leaking. It does not have any missing or loose bolts or nuts. It is securely mounted.

## Front Tractor Brakes:



This is my air brake chamber. It is not cracked, dented or broken. It is not leaking air and it is securely attached. The air hose is not cracked, frayed or dry rotted. It is not leaking air and the connections or fittings are tight.



The slack adjuster and push rod is not cracked, bent or broken. There are no non-factory or illegal welds. There are no loose or missing bolts or nuts. The cotter pins are not missing.

**Pull on the slack adjuster.** I have no more than 1 inch of play where the push rod attaches to the slack adjuster, so I do not need to adjust it. My slack adjuster should not have more than a 90 degree angle with the brakes applied.



My brake drum is free of grease and oil. It is not cracked, dented, or broken. There are no non-factory or illegal welds. There are no holes. The Brake lining is not excessively worn or thin.

## Front Tractor Wheel:



The inside and outside of my rim is not cracked, bent or broken. There are no non-factory or illegal welds. My front tire has no cuts or bulges. I have no less than 4/32 of an inch of tread. The tread is evenly worn.



This is my metal valve stem. It is not missing, broken or damaged. I check my tire pressure daily with a tire pressure gauge. The cap is present.



These are my lug nuts. They are not missing or loose. (Touch ALL of the lug nuts to make sure). Rust or shiny metal around the lug nuts would indicate the lug nuts might be loose. I do not see Rust or shiny metal.



This is my hub oil seal. It is not cracked or leaking. There are no missing or loose bolts or nuts. If equipped with a sight glass, I will check the level through the sight glass.



This is my splash guard. It is not damaged. There are no missing or loose bolts or nuts. It is securely mounted.

## Fuel Area – Drivers Side

- This is my mirror mount. It is not cracked, bent or broken. There are no missing or loose bolts or nuts.
  - These are my mirrors. The mirrors are clean, not cracked, not broken or damaged. There are no missing or loose bolts or nuts. My mirrors are mounted securely.
  - This is my door. My door is not damaged. My door opens and closes properly. The door hinges are not cracked, dented or broken. The hinges are not sticking or binding.
  - This is my door seal. It is not dry rotted. The seal is intact. It is mounted securely.
  - This is my window. It is clean and clear. It is not cracked or broken. The window operates correctly.
  - This is my grab handle. It is not broken. There are no missing or loose bolts or nuts. The grab handle is mounted securely.
- (Open/Release the Safety/Emergency equipment door as a reminder to talk about the Safety equipment later)
- These are my steps. They are not cracked, bent or broken. There are no non-factory or illegal welds. There are no missing or loose bolts or nuts. The steps are securely mounted to the tractor frame. They are clear of objects. They are free of oil and grease. The steps are safe for me to stand on.
  - This is my fuel tank. It is not cracked, dented or broken. It has no non-factory or illegal welds. It is not leaking.
  - These are my fuel tank straps. They are not cracked, dented or broken. They have no non-factory or illegal welds. There are no missing or loose bolts or nuts. My fuel tank is mounted securely.
  - This is the fuel cap. The rubber seal is not cracked or dry rotted. The fuel cap is present and tight. The fuel cap is not leaking.
  - These are my primary and secondary air pressure tanks (behind the fuel tank). They are not cracked, dented or broken. They have no non-factory or illegal welds. There are no missing bolts or nuts. They are mounted securely. They are not leaking. I drain the tanks daily especially in the winter to prevent brake failure.

- This is my Safety Equipment. By law I should have the following:
  - This is my 10 BC fire extinguisher. It is mounted securely. It is up to date and is fully charged.

These are my 3 reflective triangles.

My truck uses circuit breakers so I am not required to carry spare fuses.

## Rear of the Tractor and Front of the Trailer

- This is my service light. It is clear in color. It is clean, not cracked or broken, no missing screws, properly attached and no condensation.
- This is my blue service air hose. This is my red emergency air hose. The air hoses are not cut, chafed, spliced or torn. They are not tangled, dragging or leaking air. They are properly sealed. The hoses are in good condition.
- These are my glad hands. They are secure and locked in place. The rubber seal is not cracked or dry rotted . It is not split. They are not leaking air.
- This is my electrical cable (green in color). It is not cut, tangled, dragging, cracked or burnt. It is securely attached to the tractor and the trailer.
- These are my steps. They are not cracked, bent or broken. There are no non-factory or illegal welds. There are no missing or loose bolts or nuts. The steps are securely mounted to the tractor frame. They are clear of objects. They are free of oil and grease. The steps are safe for me to stand on.
- This are my storage compartment. It is not cracked, bent or broken. There are no non-factory or illegal welds. There are no missing or loose bolts or nuts. It is mounted securely to the tractor frame. The door opens and closes properly.
- This is my frame and crossmembers. They are not cracked, bent or broken. There are no non-factory or illegal welds. There are no holes. There are no missing or loose bolts or nuts.
- This is my battery box. It is not cracked or damaged. It is mounted securely to the tractor frame.
- This is my driveshaft and U-Joints. They are not cracked, bent or broken. There are no non-factory or illegal welds. There are no missing or loose bolts or nuts. They are mounted securely. They are free from foreign objects and obstructions. The U-Joints are properly lubricated.
- This is the header board. It is secure, free of damage and strong. It is not cracked, dented or broken. There are no bulges or holes.

# Tractor - Rear Suspension, Brakes, Wheels and Tires

## Rear Tractor Suspension:

- This is my front leaf mount and U-Bolts. They are not cracked, dented or broken. There are no non-factory or illegal welds. They do not have any missing or loose bolts or nuts.
- These are my leaf springs. They are not cracked, bent or broken. There are no non-factory or illegal welds. They are aligned and not shifted. They are not missing; if  $\frac{1}{4}$  (25%) or more are missing my truck would be taken out of service.
- This is my shock absorber. It is not cracked or leaking. It does not have any missing or loose bolts or nuts. It is securely mounted.
- This is my Air Bellow. It is not cracked or dry rotted. It is not leaking air. It does not have any missing or loose bolts or nuts. It is securely mounted.

(NOTE: This suspension DOES NOT have a rear leaf spring mount. The new part is an Air Bellow)

## Rear Tractor Brakes:

- This is my air brake chamber. It is not cracked, dented or broken. It is not leaking air and it is securely attached. The air hose is not cracked, frayed or dry rotted. It is not leaking air and the connections or fittings are tight.
- This is my slack adjuster and push rod. They are not cracked, bent or broken. There are no non-factory or illegal welds. There are no loose or missing bolts or nuts. The cotter pins are not missing. I have no more than 1 inch of play where the push rod attaches to the slack adjuster, so I do not need to adjust it. My slack adjuster should not have more than a 90 degree angle with the brakes applied.
- This is my brake drum. It is free of grease and oil. It is not cracked, dented, or broken. There are no non-factory or illegal welds. There are no holes. The brake lining is not excessively worn or thin.

**Rear Tractor Wheels:**

- The inside and outside of my rims are not cracked, bent or broken. There are no non-factory or illegal welds. Because my vehicle uses BUDD rims, spacers are not required.
- My tires have no cuts or bulges. I have no less than 2/32 of an inch of tread on each tire. The tread is evenly worn.
- The tires are not rubbing against each other. There are no objects or obstructions between the wheels and tires.
- These are my metal valve stems. They are not missing, broken or damaged. I check my tire pressure daily with a tire pressure gauge. The caps are present.
- These are my lug nuts. They are not missing or loose. (Touch ALL of the lug nuts to make sure). Rust or shiny metal around the lug nuts would indicate the lug nuts might be loose. I do not see Rust or shiny metal.
- This is my axle oil seal. It is not cracked or leaking. There are no missing or loose bolts or nuts. If equipped with a sight glass, I will check the level through the sight glass.
- This is my splash guard. It is not damaged. There are no missing or loose bolts or nuts. It is securely mounted.

## Coupling System

- This is my apron. It is resting securely on the fifth wheel. There is no space or daylight between the apron and the fifth wheel. It is not cracked, bent or broken. There are no non-factory or illegal welds.
- This is my fifth wheel skid plate. It is not cracked, bent or broken. There are no non-factory or illegal welds. It is properly lubricated. It is securely mounted. All bolts and pins are present.
- This is the release arm. It is not cracked, bent or broken. There are no non-factory or illegal welds. It is in the locked position and the safety latch is in place.
- This is the pivot pin and locking pin. It is not cracked, bent or broken. There are no non-factory or illegal welds. It is not damaged. It is not missing the cotter pin. It is not loose. It is fully engaged.
- This is the platform. It is not cracked, bent or broken. There are no non-factory or illegal welds. It is securely mounted.
- These are my mounting bolts and nuts. All of the bolts and nuts are present and tight. There are no missing or broken bolts or nuts.
- This is my king pin. It is not cracked, bent or broken. There are no non-factory or illegal welds. It is not damaged. It is properly lubricated.
- These are my locking jaws. They are not cracked, bent or broken. There are no non-factory or illegal welds. They are securely locked or closed around the king pin shank. They are properly lubricated.

## Combination Lights and Trailer Support Frame

- These are my combination lights. This is my left turn signal. This is my right turn signal. They are also my 4-way flasher, brake lights and marker lights. They are red in color.  
This is my reverse light. It is clear in color.  
These are my 2 reflectors. They are red in color.  
All the combination lights are clean, not cracked or broken, no missing screws, properly attached and no condensation.
- This is my trailer support frame. It is not cracked, bent or broken. There are no non-factory or illegal welds. There are no missing or loose bolts or nuts. It is not damaged.

## Side of Trailer

- This is my landing gear frame, landing gear foot and crank handle. They are not cracked, bent or broken. There are no non-factory or illegal welds. There are no missing or loose bolts or nuts. It is not damaged. The landing gear foot is raised to the highest position. The crank handle is secure in place.
- These are my DOT stickers. They are clean, not damaged, not faded and properly attached to my vehicle.
- I have 1 marker light, amber in color, on the side of my tractor.  
I have 1 clearance light, amber in color, on the side of my trailer.  
I have 1 clearance light, red in color, on the side of my trailer.  
I have 1 left turn signal, amber in color, on the side of my trailer.  
All of my lights are clean, not cracked or broken, no missing screws, properly attached and no condensation.

# Trailer - Rear Suspension, Brakes, Wheels and Tires

## Rear Trailer Suspension:

- This is my front leaf mount, rear leaf spring mount and U-Bolts. They are not cracked, dented or broken. There are no non-factory or illegal welds. They do not have any missing or loose bolts or nuts.
- These are my leaf springs. They are not cracked, bent or broken. There are no non-factory or illegal welds. They are aligned and not shifted. They are not missing; if  $\frac{1}{4}$  (25%) or more are missing my truck would be taken out of service.
- This is my torsion bar. It is not cracked, bent or broken. There are no non-factory or illegal welds. There are no loose or missing bolts or nuts.

NOTE: This suspension DOES NOT have a shock absorber. The new part is a torsion bar.

## Rear Trailer Brakes:

- This is my air brake chamber. It is not cracked, dented or broken. It is not leaking air and it is securely attached. The air hose is not cracked, frayed or dry rotted. It is not leaking air and the connections or fittings are tight.
- This is my slack adjuster and push rod, They are not cracked, bent or broken. There are no non-factory or illegal welds. There are no loose or missing bolts or nuts. The cotter pins are not missing. I have no more than 1 inch of play where the push rod attaches to the slack adjuster, so I do not need to adjust it. My slack adjuster should not have more than a 90 degree angle with the brakes applied.
- This is my brake drum. It is free of grease and oil. It is not cracked, dented, or broken. There are no non-factory or illegal welds. There are no holes. The brake lining is not excessively worn or thin.

**Rear Trailer Wheels:**

- The inside and outside of my rims are not cracked, bent or broken. There are no non-factory or illegal welds. Because my vehicle uses BUDD rims, spacers are not required.
- My tires have no cuts or bulges. I have no less than 2/32 of an inch of tread on each tire. The tread is evenly worn.
- The tires are not rubbing against each other. There are no objects or obstructions between the wheels and tires.
- These are my metal valve stems. They are not missing, broken or damaged. I check my tire pressure daily with a tire pressure gauge. The caps are present.
- These are my lug nuts. They are not missing or loose. (Touch ALL of the lug nuts to make sure). Rust or shiny metal around the lug nuts would indicate the lug nuts might be loose. I do not see Rust or shiny metal.
- This is my axle oil seal. It is not cracked or leaking. There are no missing or loose bolts or nuts. If equipped with a sight glass, I will check the level through the sight glass.
- This is my splash guard. It is not damaged. There are no missing or loose bolts or nuts. It is securely mounted.

## **Back of the Trailer**

- These are my 3 ID lights. They are red in color.
- This is my left turn signal, 4-way flasher and marker light. It is red in color.
- This is my right turn signal, 4-way flasher and marker light. It is red in color.
- These are my brake and marker lights. They are red in color.
- All of my lights are clean, not cracked or broken, no missing screws, properly attached and no condensation.
- This is my trailer door. The door is not damaged. The door opens and closes properly. The door hinges are not cracked, dented or broken. The hinges are not sticking or binding. The door latch works properly and is not damaged.
- These are the door cables, wires or ties. They are not broken or missing. They are not damaged. They are secure.
- This is my DOT bumper. It is not cracked, bent or broken. There are no non-factory or illegal welds. There is no rust.
- These are my DOT stickers. They are clean, not damaged, not faded and properly attached to my vehicle.

**I am ready to perform my in-cab inspection.**

# In-cab Inspection

## General Inspection/Housekeeping:

- 1. (Adjust the seat as necessary) The seat is adjusted for me.
- 2. My seat belt is not torn, ripped, frayed or cut. It is securely mounted. It latches properly.
- 3. My rear view, spot and bumper mirrors are clean, not cracked or broken. The mirrors are properly adjusted for me.
- 4. My floor is free of bottles and objects that could roll under my pedals.

## Safe Start:

Let the tester know you are ready to perform your safe start.



- 1. My wheels are chocked.
- 2. My parking brakes are engaged.
- 3. (Put the transmission in neutral) My transmission is in Neutral.
- 4. (Depress the clutch and hold it down) My clutch is disengaged.
- 5. Start the engine
- 6. Slowly release the clutch

## Gauges:



All of my gauges are clean, not cracked or broken and no condensation.

- 1. These are my primary and secondary air pressure gauges. They are rising to the normal operating range of 100 to 125 psi. The governor cut off is between 120 and 140 psi.
- 2. My fuel gauge is no less than a quarter.
- 3. I will check my speedometer on the road.
- 4. My tachometer or RPM gauge is working properly. (press the gas pedal)
- 5. My battery gauge is between 12 and 14 volts. (Press the push-mode button on the dashboard)
- 6. This is my oil pressure gauge. It is rising to the normal range of 30 to 60 psi.
- 7. This is my water temperature gauge. It is at the normal operating range.
- 8. (Turn on the left turn signal) This is my left turn signal indicator. It is working properly.
- 9. (Turn on the right turn signal) This is my right turn signal indicator. It is working properly.
- 10. (Turn on the 4-way flashers) These are my 4-way flasher indicators. They are working properly.
- 11. (Turn on the headlights on then turn on the high-beams) This my high-beam indicator. It is working properly.

## Steering Wheel:



I have a 20 inch steering wheel. It has no more than 10 degrees or 2 inches of play.  
(demonstrate)

## Horns:



My city and highway horns are working properly. (demonstrate)

**Windshield:**

- My windshield is not cracked or broken. It is clean, clear and has no illegal stickers. My inspection sticker is up to date.

**Windshield Wipers:**

- My wiper arms are not bent or broken and they operate smoothly.

- The wiper blades are not cracked or dry rotted. They have the proper tension on my windshield. (Turn on the wipers and spray washer fluid to demonstrate)

**Heater and Defrost:**

- This is my heater. (Turn on to demonstrate)

- This is my defroster. (Turn on to demonstrate)

**Dome Lights:**

- (Turn on the dome light switch on the dash)

- (Turn on and off the dome lights above the drivers seat)

- All my dome lights are working properly. They are clear and red in color, properly attached and no condensation.

I am ready to perform my brake integrity test.

# Brake Integrity Tests

(Be sure to have a watch with you on your test day)

**FAILURE TO PERFORM ALL THREE COMPONENTS OF THE AIR BRAKE CHECK CORRECTLY WILL RESULT IN AN AUTOMATIC FAILURE OF THE VEHICLE INSPECTION TEST. MAKE SURE TO USE THE WHEEL CHOCKS DURING THE AIR BRAKE CHECK.**

## One minute timed leak test:



1. Verify the air pressure is built up to the normal range of 100-125psi.
2. Turn the engine off. Leave the key off so you hear the air equalize.
3. Tell the tester the wheels are chocked.
4. Release the tractor and trailer parking brakes (red and yellow valves).
5. After a couple seconds (let the air pressure settle)
6. Step on the brake pedal and hold.
7. Start the stopwatch or timer.
8. After 1 minute has passed, check the primary and secondary air pressure gauges. Tell the tester "I did not lose more than 4 psi in 1 minute. I do not have a leak"

## Fan down test:



1. ***Turn the key on engine off!***
2. Pump the brake pedal and do not stop.
3. At 60 psi the low air pressure warning indicator on the dash will illuminate and the low air pressure warning buzzer will sound. Point at the indicator and tell the tester the low air pressure warning light and buzzer have come on.
4. Keep pumping the brake pedal!
5. Once the air pressure has reached between 20 and 40 psi the parking brake valves should pop out. Do not stop pumping until BOTH valves have popped out.

Once the valves have popped out, point to the valves and say to the tester "My parking brakes valves have popped out. My parking brakes are engaged"

 **Tug test:**

1. Tell the tester “I will remove the wheel chocks”.
2. Take the ignition key with you and remove the wheel chocks.
3. Get back in the vehicle, put your seat belt on and ask the tester to put their seat belt on.
4. Start the engine.
5. DO NOT PRESS THE CLUTCH OR BRAKE PEDALS.
6. Raise the engine RPM to 1500. You will have to wait for the air pressure to build to the normal range of 100 – 125 psi.
7. Release the trailer parking brakes by pressing the trailer parking brake valve in. (The tractor brakes are still engaged).
8. Gently pull forward using **first gear**. (The vehicle should not move).
9. DO NOT PRESS THE BRAKE PEDAL.
10. Apply the trailer parking brakes by pulling the trailer parking brake valve out.
11. Release the tractor parking brakes by pressing the tractor parking brake valve in. (The trailer brakes are still engaged)
12. Gently pull forward using **first gear**. (The vehicle should not move).
13. DO NOT PRESS THE BRAKE PEDAL.
14. Apply the tractor parking brakes by pulling the tractor parking brake valve out.
15. Put the transmission in neutral.
16. Tell the tester “My tractor and trailer parking brakes are in good condition”.

This completes the tug test.

 **Service brake test:**

1. Put the transmission in **4<sup>th</sup> or 5<sup>th</sup> gear**.
2. Release the parking brakes.
3. Pull forward at 5 MPH.
4. Press the clutch and brake pedals bringing the vehicle to a complete stop.
5. Verify the vehicle does not pull to the left or right.
6. Tell the tester “My vehicle came to a complete stop and it did not pull to the left or right therefore, I do not need to adjust my brakes.”
7. Tell the tester “My speedometer is working properly, the needle rose to 5 MPH”

This completes the service brake test.

 **Look at the tester and tell him/her, “I have completed my pre-trip inspection, in-cab inspection and the brake integrity test / air brake check. I will now let the air pressure rise to 100-125 psi so I can perform my basic control / skills and road examination. Thank you.”**

## Questions you need to know for your test

- Q. How far away do you need to stop from the Railroad Crossing / nearest track?  
A. 15 to 50 feet. (Explain and demonstrate what you can; the railroad crossing procedure)

1. Stop the vehicle.
2. Turn on the 4-way flashers.
3. Roll down the driver and passenger windows.
4. Look and listen for any trains.
5. Proceed with caution across the tracks.
6. Do not shift the transmission until the vehicle has cleared the tracks.
7. Turn off the 4-way flashers after the trailer bumper clears the tracks.

- Q. What gear should you be in when going downhill?  
A. A lower gear.

- Q. What do you do while going downhill to avoid speeding?  
A. I will shift in to a lower gear, press the brake pedal until I am 5 MPH below the speed limit then I will release the brake. If the vehicle reaches the speed limit again, I will press the brake pedal until I am 5 MPH below the speed limit. I will repeat these steps until I am on level ground. While I am doing this, I will be watching my mirrors for traffic behind me and I am looking for runaway ramps.

### Emergency Stop

*You will be asked to perform the first 3 steps of the emergency stop then explain the remaining steps.*

1. Look at mirrors and turn on the right turn signal. Get over when it is safe to get over.  
2. Stop completely, pull the parking brake valves out, turn off the right turn signal, turn on the 4-way flashers, and put the transmission in neutral.  
3. Look at the road to see if it is divided or undivided.  
4. Set my 3 reflective triangles, according to the road. I will need to do this in no more than 10 minutes.

- Q. Where should you place your triangles on a divided highway?  
A. 10, 100 and 200 feet behind my vehicle.

- Q. Where should you place your triangle on a undivided highway?  
A. 100 feet in front of my vehicle, 10 and 100 feet behind my vehicle.

- Q. How do you carry your triangles when placing them on the road?  
A. With my arms extended and the triangles open facing the traffic.

5. Look at mirrors and turn on the right turn signal. Get over when it is safe to get over.  
6. Stop completely, pull the parking brake valves out, turn off the right turn signal, turn on the 4-way flashers, and put the transmission in neutral.  
7. Look at the road to see if it is divided or undivided.  
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- Q. Where should you place your triangles on a divided highway?  
A. 10, 100 and 200 feet behind my vehicle.

- Q. Where should you place your triangle on a undivided highway?  
A. 100 feet in front of my vehicle, 10 and 100 feet behind my vehicle.



**Q. How do you carry your triangles when placing them on the road?**

- A. With my arms extended and the triangles open facing the traffic.



## Right to Left Offset

1. All the way to Right

Back up until you see landing gear mark in left spot mirror



2. All the way to Left

Back up until see side of rear tire (Make Truck & Trailer Straight)



3. Make front tire straight by turning 2 times to Right



4. Use Right mirror and straight back up as you see middle cone  
Back up until rear tire come to line



5. Turn one turn to Left side  
Back up, Look at Right mirror and see landing gear mark



6. Turn all the way to Right

Back up to make Truck & Trailer Straight

## Left to Right Offset



1. All the way to Left  
Back up until you see landing gear mark in left spot mirror



2. All the way to Right  
Back up until see side of rear tire (Make Truck & Trailer Straight)



3. Make front tire straight by turning 2 times to Left



4. Use Left mirror and straight back up as you see middle cone  
Back up until rear tire come to line



5. Turn ONE turn to Right side  
Back up, Look at Left mirror and see landing gear mark



6. Turn all the way to Left  
Back up to make Truck & Trailer Straight

# Manassas DMV CDL Test Site

(Image acquired from googlemaps)



## Straight Backup (1 come out – 1 pull up)

1. Place your hand at the top of the steering wheel (12 o' clock position). Do not turn the steering wheel more than 180 degrees (6 o' clock position) left or right.

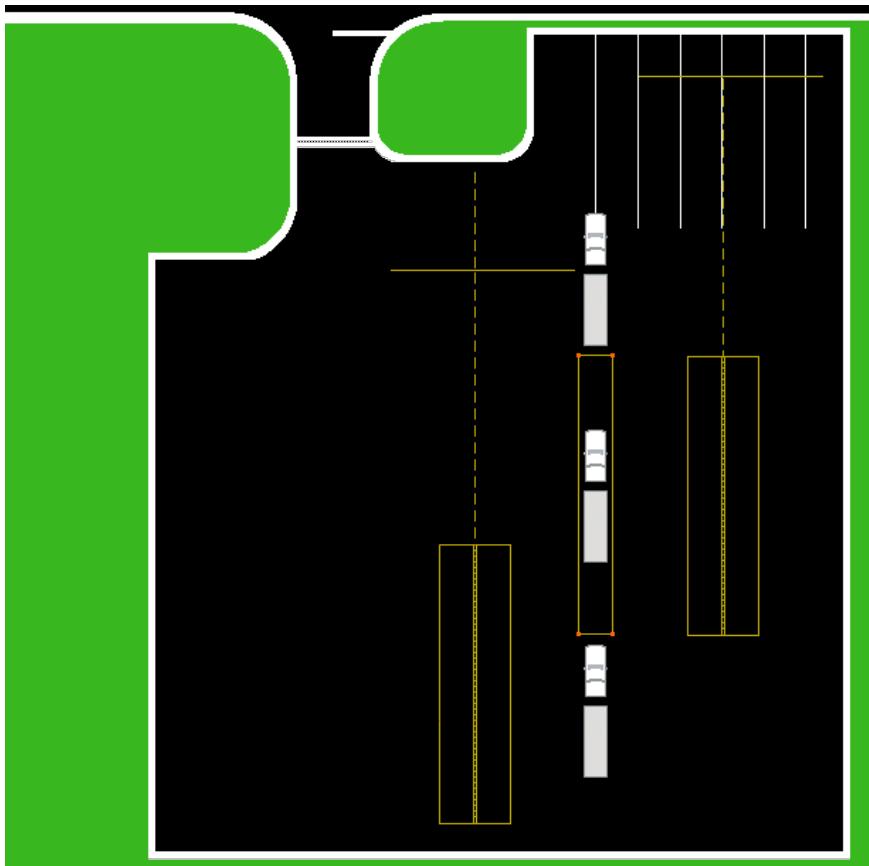


Continue to backup through the cones.

Once the front bumper clears the last cone come to a complete stop.

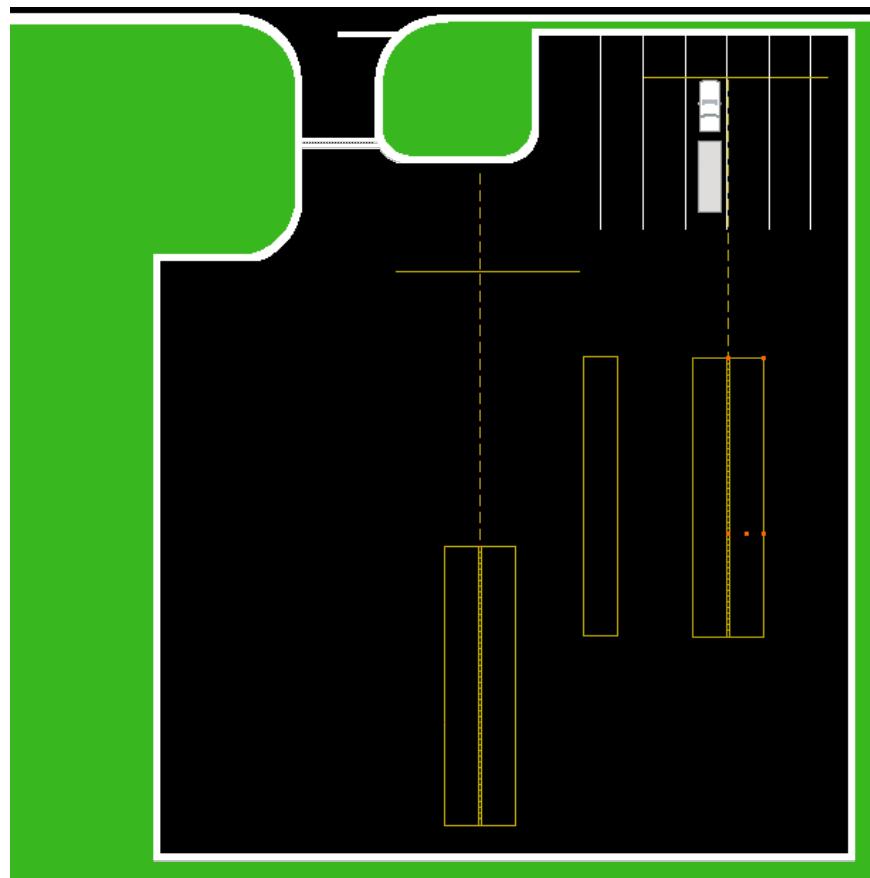
Get out of the vehicle to verify the truck is completely out of the box.

Honk the city horn when you are ready to let the tester know you are done.

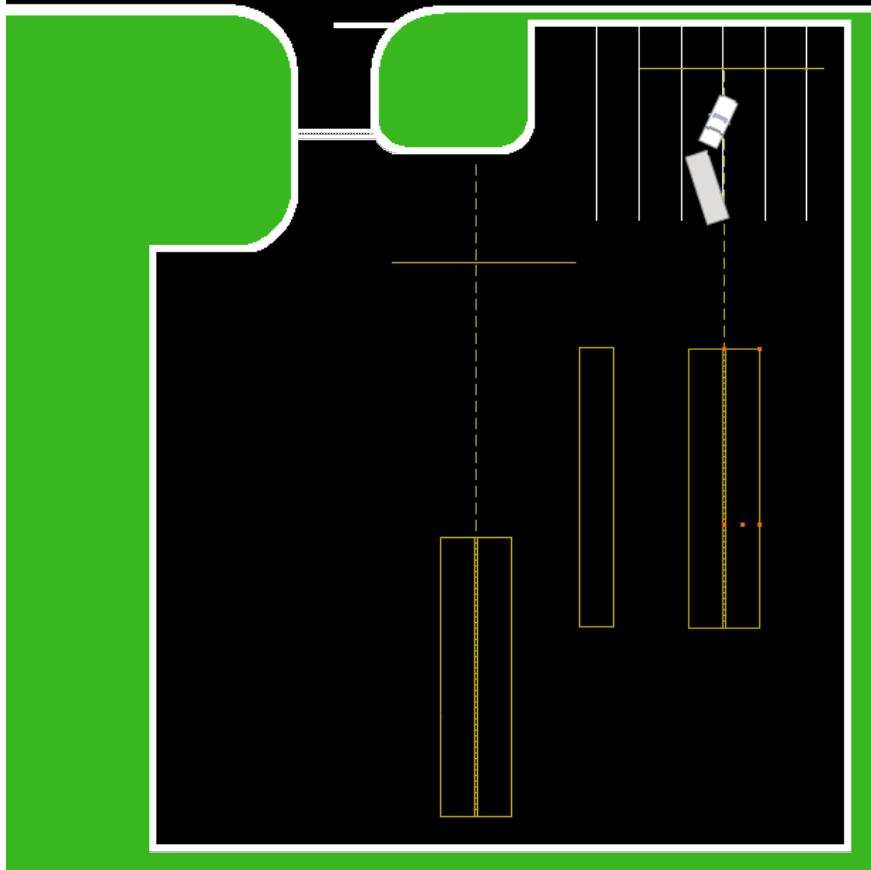


## Offset – Left To Right (2 come out – 2 pull up)

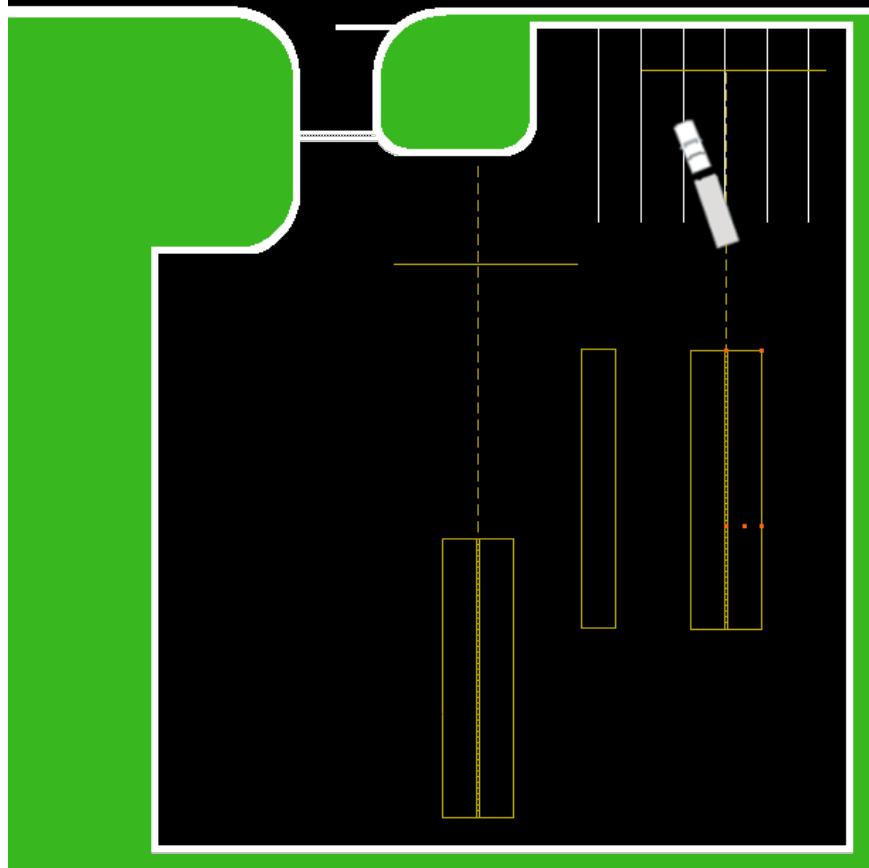
1. Pull up to the line keeping the tractor and trailer as parallel as possible to the dividing line.



2. Turn the steering wheel all the way to the left. Backup for 4 seconds / until the blue tape lines up with the landing gear mark in the spot mirror and STOP.



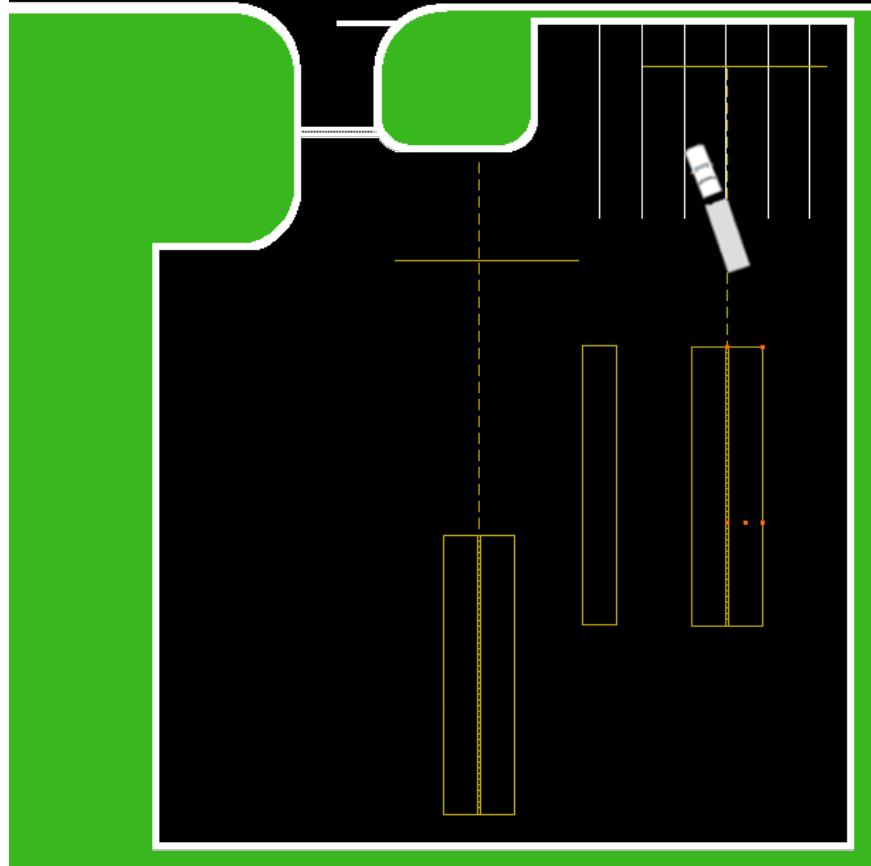
3. Turn the steering wheel all the way to the right. Backup for 4 seconds / until the tractor and trailer are straight and STOP. At this point you should see the center line cone in the left / driver side rear view mirror.



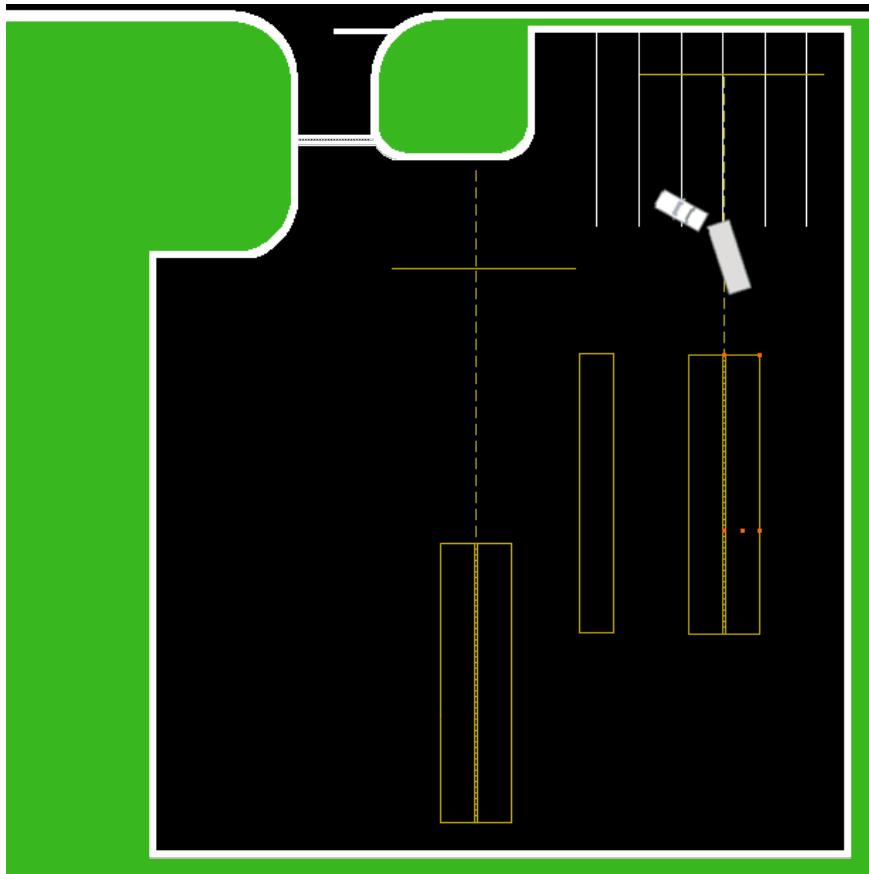
4. Turn the steering wheel 2 times to the left while stopped. This is to make the front wheels straight.



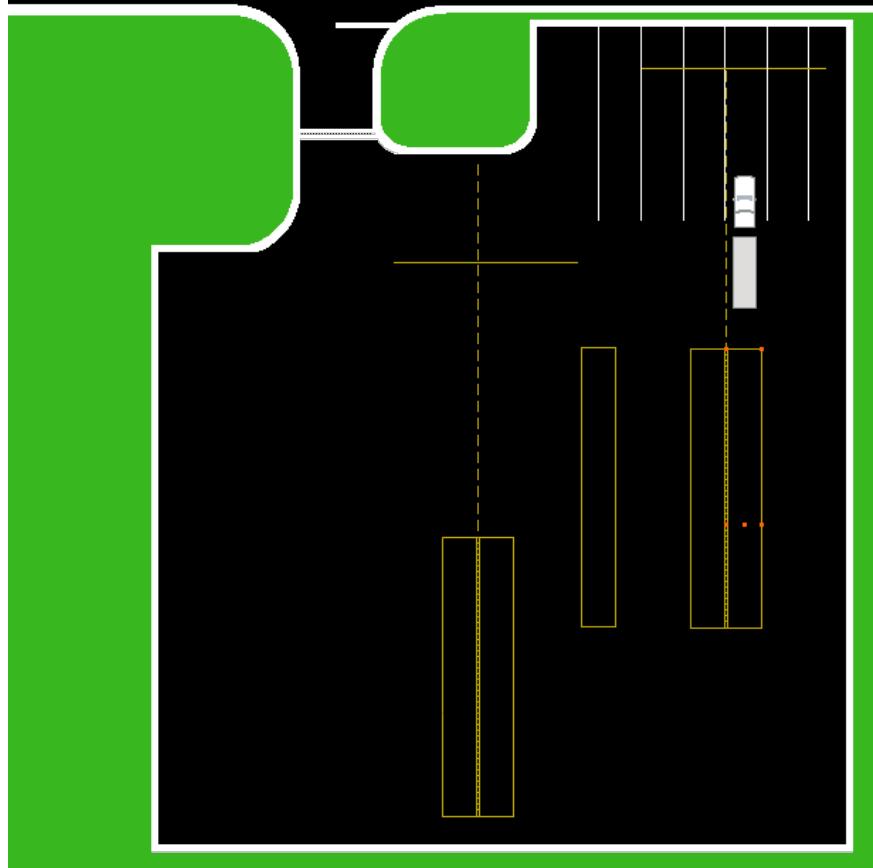
5. Straight backup until the left / driver side trailer tires are on top of the line.



6. Turn the steering wheel 1 turn to the right. Backup for 4 seconds / until the blue tape lines up with the landing gear mark in the spot mirror and STOP.



7. Turn the steering wheel all the way to the left. Backup for 4 seconds / until the tractor and trailer are straight and STOP.



8. Turn the steering wheel 2 times to the right while stopped. This is to make the front wheels straight.

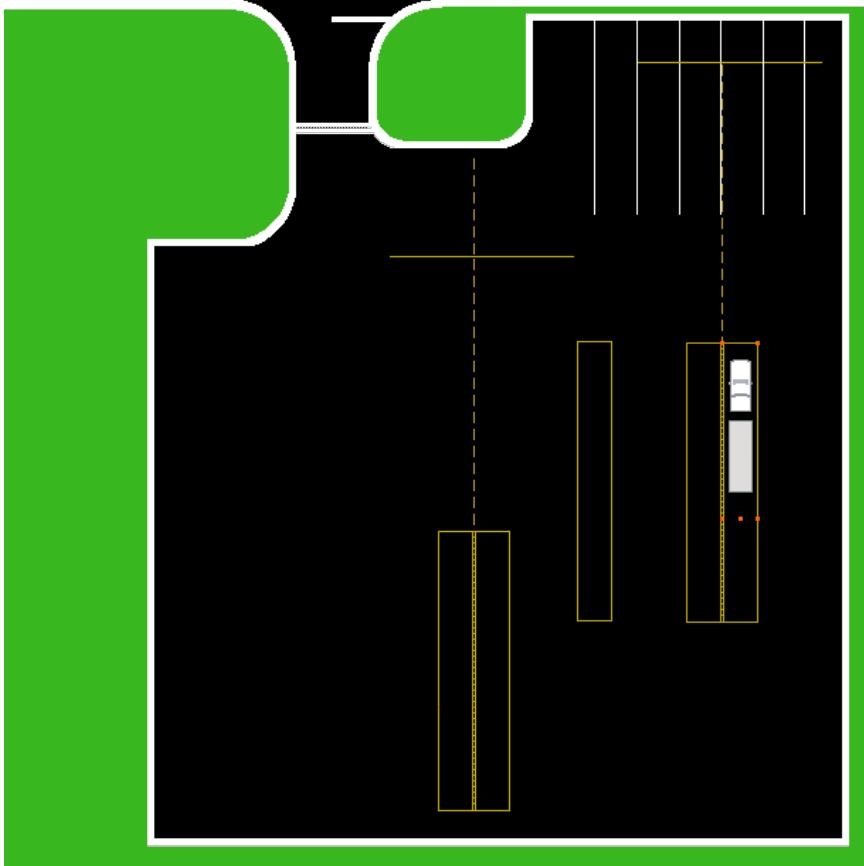


9. Straight backup until the front bumper passes the first set of cones.



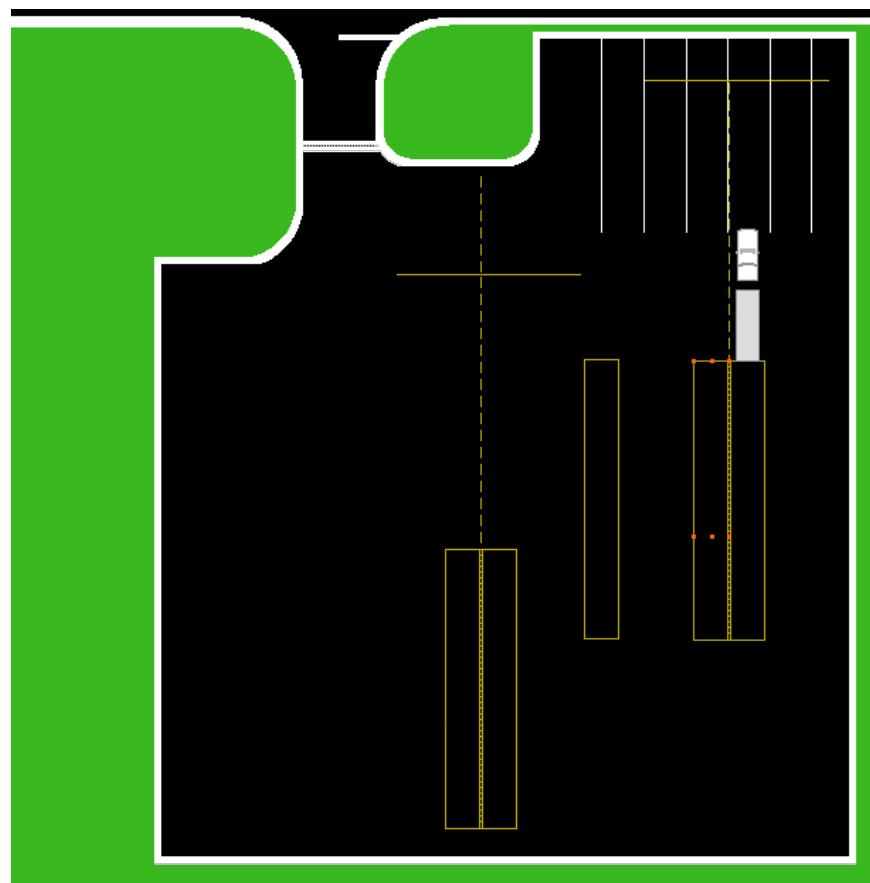
10. Get out of the vehicle to verify all parts of the vehicle are inside the lines / box.

Honk the city horn when you are ready to let the tester know you are done.

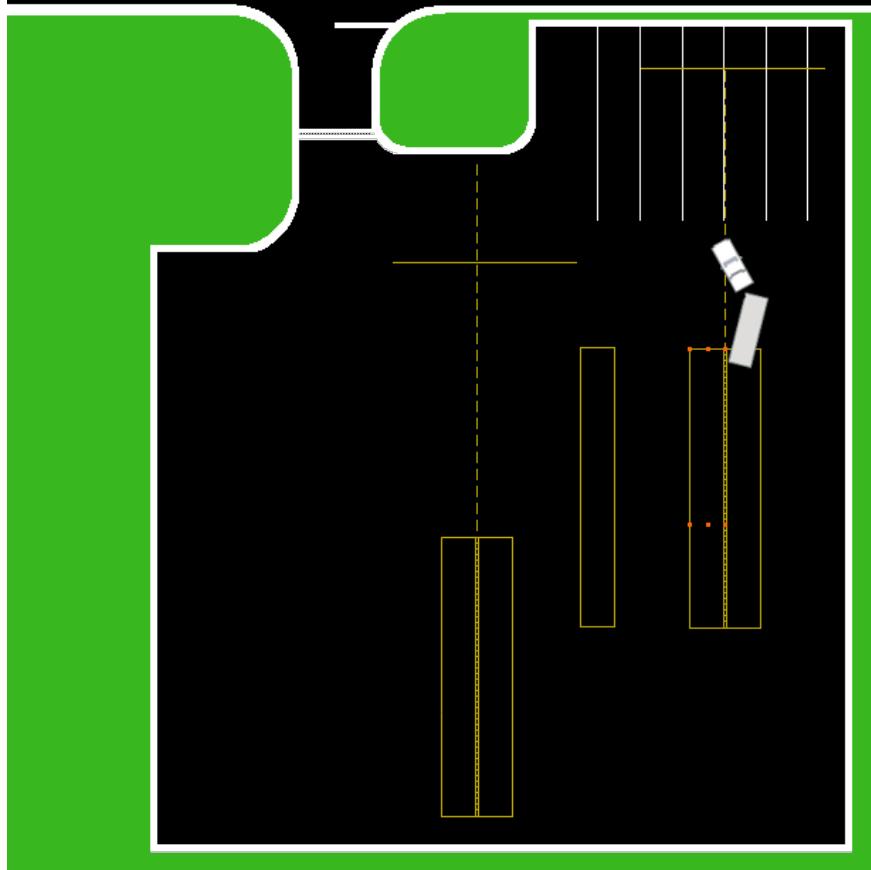


## Parallel Parking – Right To Left (2 come out – 2 pull up)

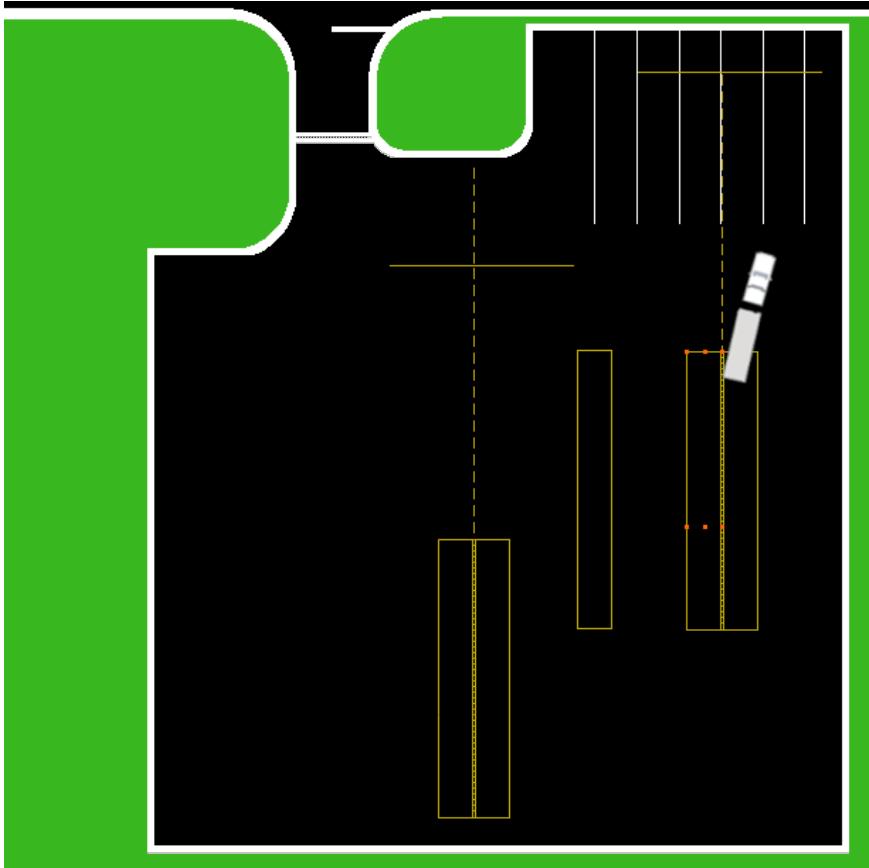
1. Align the rear trailer tire 2 feet (60 centimeters) in front of the cone.



2. Turn the steering wheel all the way to the right. Backup for 4 seconds / until the blue tape lines up with the landing gear mark in the spot mirror and STOP.



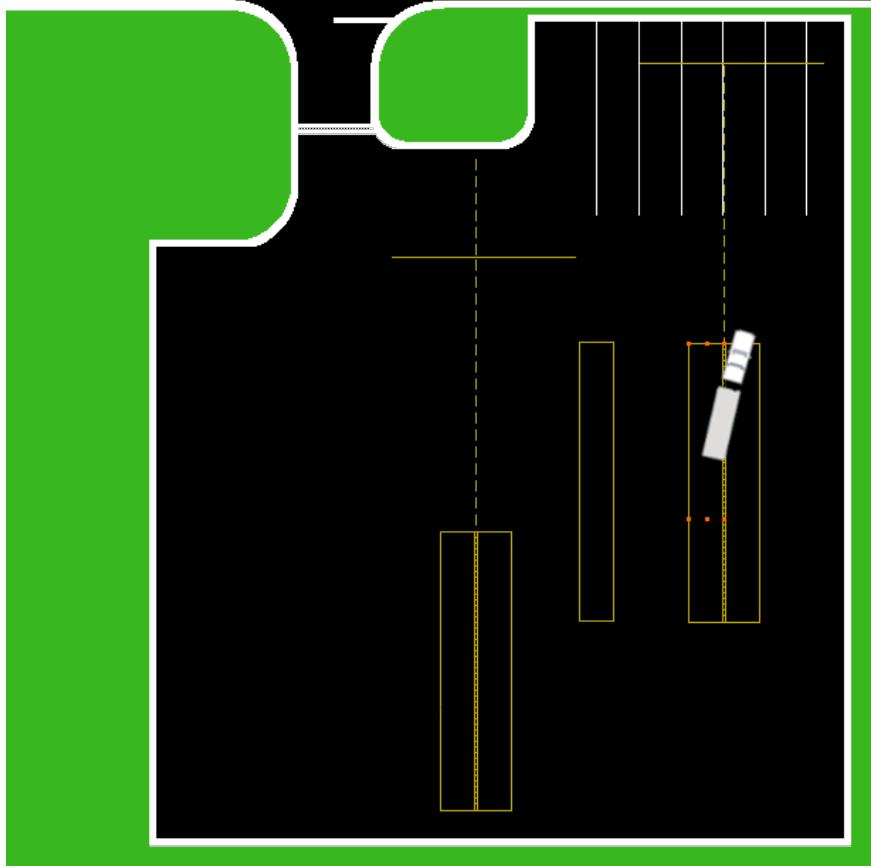
3. Turn the steering wheel all the way to the left. Backup for 4 seconds / until the tractor and trailer are straight and STOP. At this point you should see 2 cones in the right / passenger side rear view mirror.



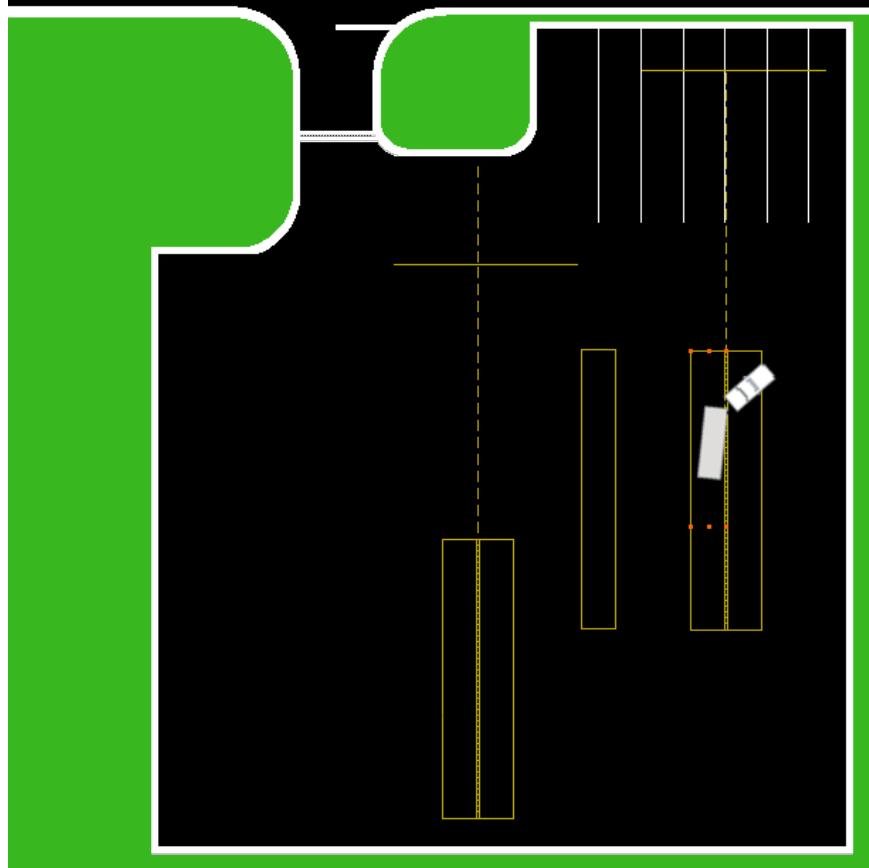
4. Turn the steering wheel 2 times to the right while stopped. This is to make the front wheels straight.



5. Straight backup until the passenger side trailer tires are on top of the line.



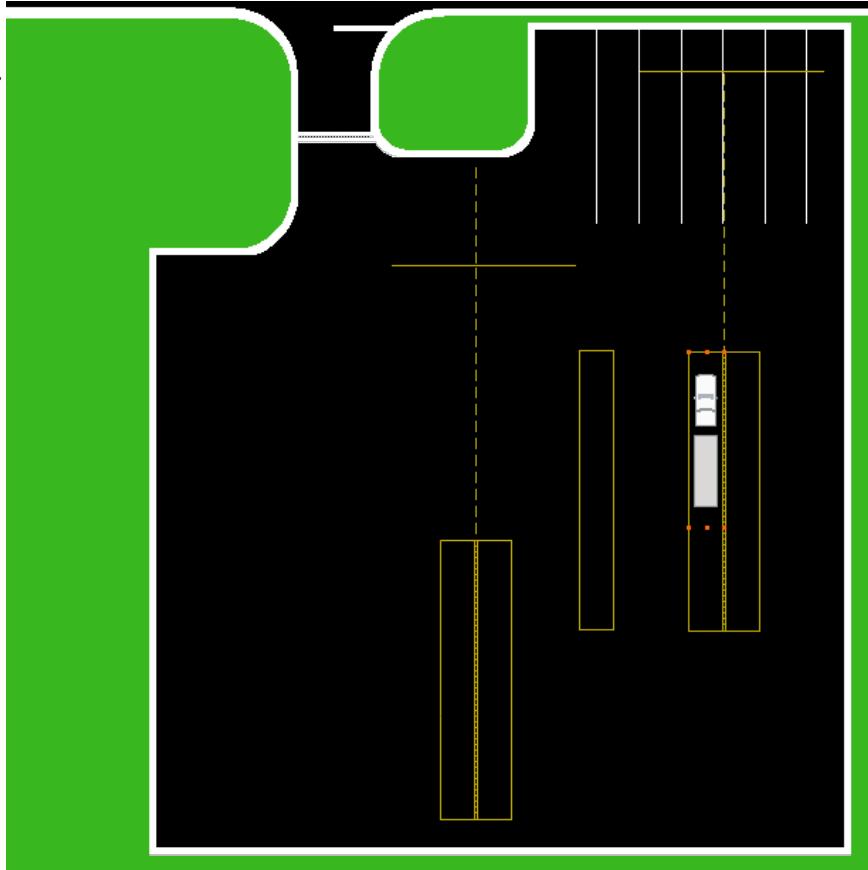
6. Turn the steering wheel all the way to the left. Backup for 4 seconds / until the blue tape lines up with the landing gear mark in the spot mirror and STOP.



7. Turn the steering wheel all the way to the right. Backup for 4 seconds / until the tractor and trailer are straight and STOP.

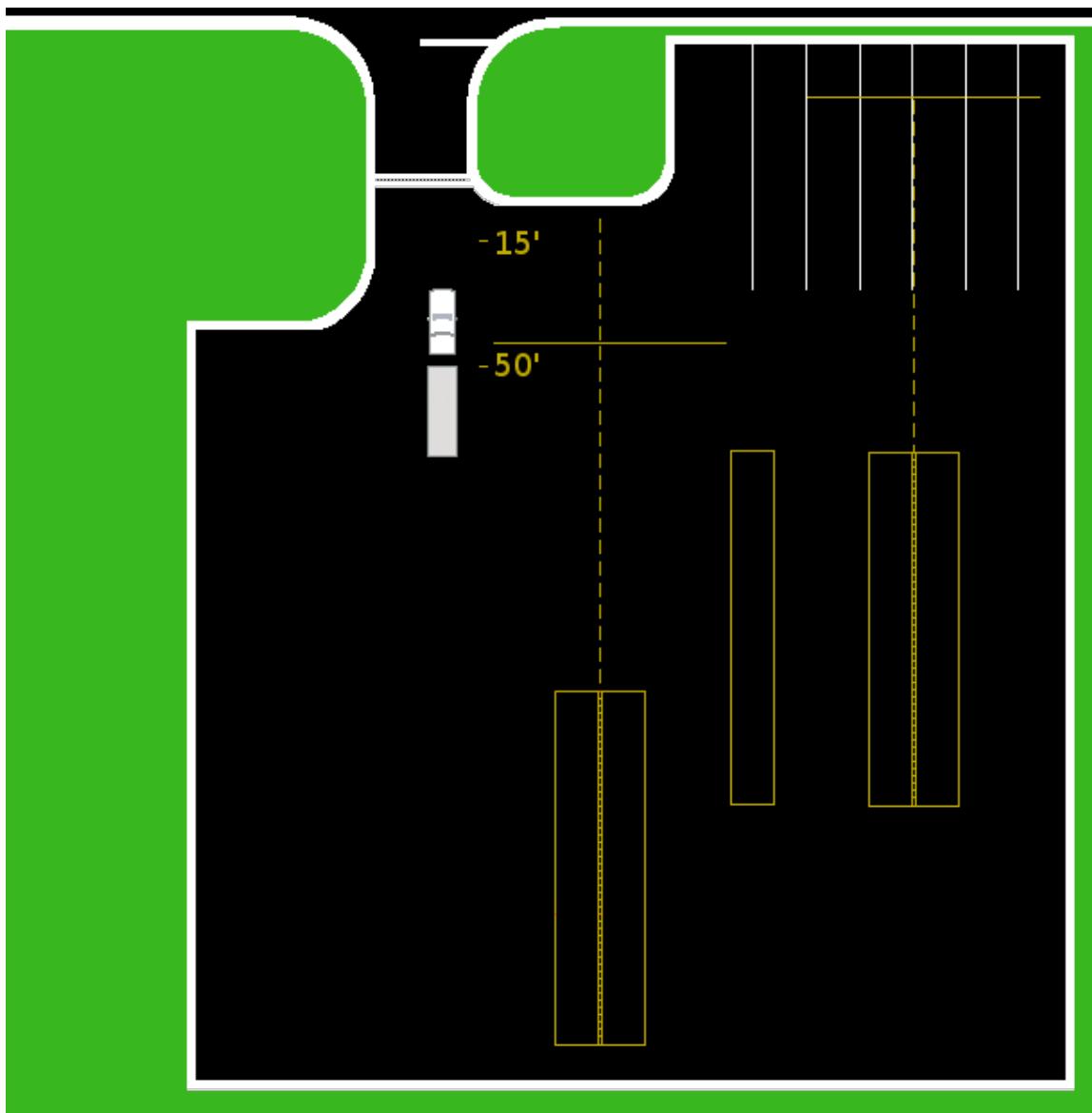
8. Get out of the vehicle to verify all parts of the vehicle are inside the lines / box.

Honk the city horn when you are ready to let the tester know you are done.



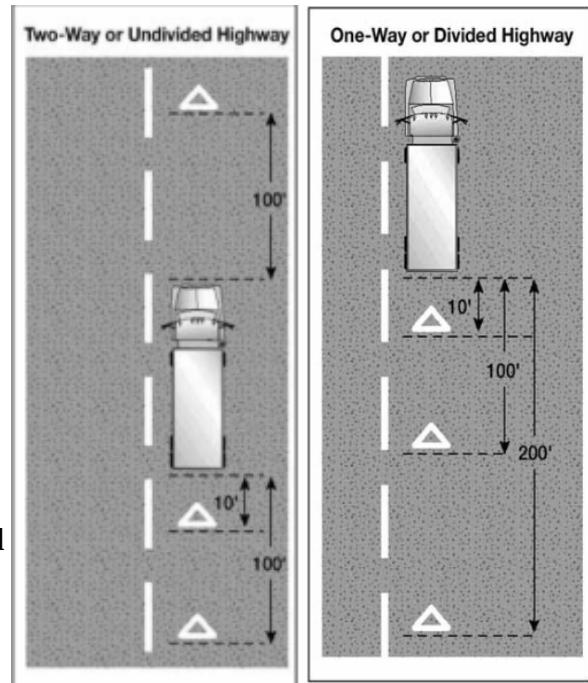
## Railroad Crossing

1. Stop (15 – 50 feet from the railroad tracks)
2. Turn on the 4-way flashers.
3. Roll down / open driver and passenger windows.
4. Look and listen for a train.
5. Proceed with caution.
6. Do not shift gears.
7. Once the entire vehicle (tractor and trailer) completely clear the tracks turn the 4-way flasher off.



## Emergency Stop / Pull Over

1. Turn the right turn signal on.
2. Check the mirrors to make sure it is safe to get over.
3. Move over to the right when it is safe to do so.
4. Come to a complete stop.
5. Set the parking brakes by pulling the parking brake valves out.
6. Put the transmission in neutral.
7. Turn off the right turn signal.
8. Turn on the 4-way flashers.
9. Look at the road to determine if it is divided or undivided.
10. You have 10 minutes to put the reflective triangles out.
11. Carry the open triangles with arms extended and the triangles open facing traffic .
12. Explain to the tester both divided highway and undivided highway triangle spacing.



**Q. Where should you place your triangles on a divided highway?**

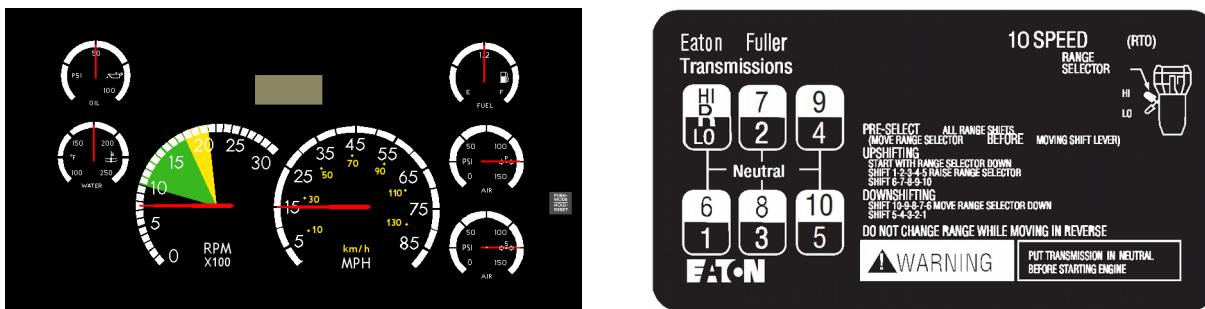
A. 10, 100 and 200 feet behind my vehicle.

**Q. Where should you place your triangle on a undivided highway?**

A. 100 feet in front of my vehicle, 10 and 100 feet behind my vehicle.

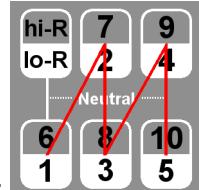
# Shifting Gears (Up and Down Shifting)

## Commercial Driver's License Manual – 2005 CDL Testing System Section 2.3



A 10 speed transmission is just a 5 speed transmission on top of another 5 speed transmission. (high and low range)

If you have driven a manual transmission before, you are probably familiar with the "M" pattern associated with shifting through the gears. Shown here.

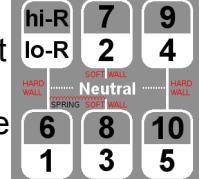


On the front of the shift handle is the range selector or splitter which is used to select low range gears in the down position and the high range gears in the up position. Low range gears are first (1) through fifth (5) and low reverse. The high range gears are sixth (6) through tenth (10) and high reverse.

The splitter talks to the transmission the transmission is in neutral which means pushing the splitter up and down while in gear doesn't change the gear you are in. So, If you put the truck in third (3) gear with the splitter down and then flip the splitter up, you are still in third (3) gear. With the splitter up in third, if you push the shifter to neutral and then back to third (3), you are now in eighth (8) gear. The splitter only talks to the transmission when the shifter is in neutral. We will talk more about this in a few minutes when we cover shifting from fifth (5) to sixth (6).

Let us take a look at the width of the shift pattern. You may assume that it's wider than it is because the vehicle is so large but as you can see here, this is neutral and from the right side to the left side is about seven (7) inches. The point at which the shifter stops is called a hard wall.

There is a right hard wall and a left hard wall. The right hard wall gives you access to fourth (4) and fifth (5) when the splitter is down and ninth (9) and tenth (10) when the splitter is up. The left hard wall gives you access to low reverse and first when the splitter is down and high reverse and sixth (6) when the splitter is up. You can also locate the soft wall which is in the middle. As you can see from the right hard wall, it is as easy as pushing the shifter to the left with a finger. If I want to pull the shifter to the left hard wall, I have to use a little force because I am overcoming a spring that sits between the middle soft wall and the left hard wall. If I ease off the pressure, the spring pushes the shifter back to the soft wall. By the way, it is called a soft wall because we can push through it. Finding the soft wall allows you to access second (2) and third (3) when the splitter is down and seventh (7) and eighth (8) when the splitter is up. If you can not find the soft wall when you are shifting on the road, it is probably because you are nervous. Nervousness causes some students to grip the shifter too tightly and muscle in the shift or makes it difficult to feel the spring and locate the soft wall. These big trucks require very little arm strength to shift. You will expend more energy pushing the stiff clutch pedal.

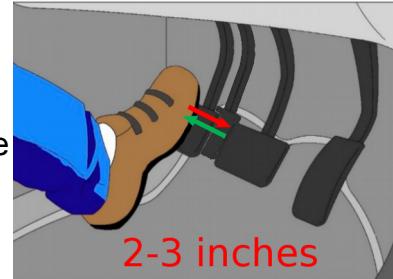


### **Double Clutching:**

Students are required to double-clutch every shift which means the clutch has to be pushed twice (2) every time you shift. In a semi-tractor you need to push the clutch and move the shifter at the same time. This takes some coordination but you can practice anywhere. Try this exercise in a chair... push an imaginary clutch pedal with your left foot and move your right hand at the same time. One, two; One, two; One, two. This exercise will develop your hand foot coordination and you will build a little muscle memory from the repetition that one, two speed is recommended for every up-shift when double-clutching.

You will want to push the clutch in just two (2) to three (3) inches. When you depress the clutch pedal, you should also move the shifter to neutral at the same time. With the second clutch, you will move the shifter to gear. Clutch to neutral, clutch to gear. One, two; clutch, clutch. Push the clutch pedal and move the shifter at the same time. One, two. Two (2) short clutches two (2) to three (3) inches.

You also have to remember which gear you are in and the location of your next gear in the shift pattern. Use the walls to find your gears and it will become second nature. Always remember that when you push the clutch pedal you have to release the gas pedal. The opposite is also true, when you push the gas pedal, release the clutch pedal. These two pedals must be operated independently of each other. Avoid pushing both of these pedals in at the same time.



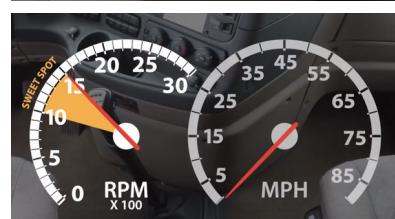
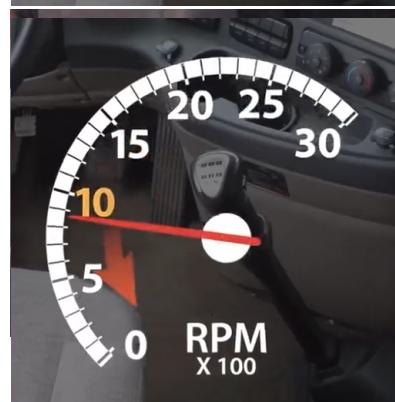
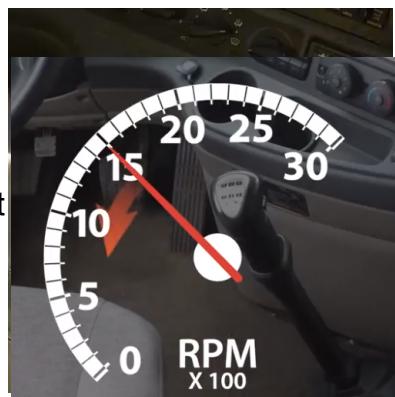
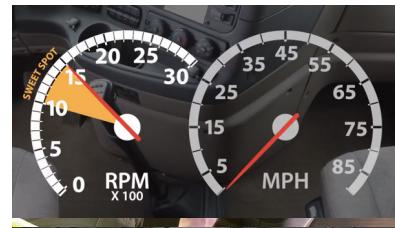
### **Clutch Pedal:**

The only time we push the clutch pedal to the floor is when the vehicle is stopped. Here is why; when the vehicle is stationary the gears in the transmission are turning. To put a stationary truck in gear we must stop those turning gears. For a stopped truck you must stop the gears. You can stop the gears by pushing the clutch pedal all the way to the floor. When you push the clutch pedal to the floor you engage the clutch brake which stops the gears from turning and allows you to put the truck in gear. By the way, if the vehicle is stopped and you are having trouble putting the truck into gear after fully depressing the clutch pedal, release the pedal just a hair. It is just the opposite when the truck is moving. If the vehicle is in motion, the gears have to be turning. A moving vehicle requires moving or spinning gears. The gears will continue spinning if you avoid pushing the clutch pedal to the floor. This is why we only push the clutch pedal in two (2) to three (3) inches when we are shifting. Keep the clutch pedal away from the floor when the truck is moving. If you find yourself fully depressing the clutch, you are probably nervous. Try pulling over and practicing two short clutches two (2) to three (3) inches deep at the one, two speed. Do it twenty (20) to thirty (30) times and hit the road again.

### The Side Grip: Shifting from 6th to 7th

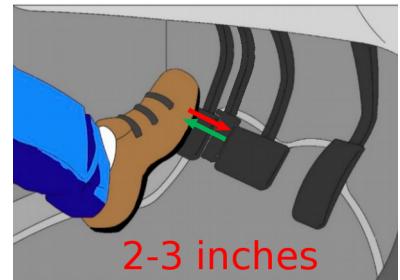
Consider using a side grip when you shift because there are some advantages to gripping the shifter from the side. First of all it is easy to manipulate the splitter when it is always between your second and third fingers and you have your thumb on top of the shifter for leverage but here is a better reason; shifting from sixth (6) to seventh (7). New students sometimes accidentally shift to ninth (9) when they are trying to hit seventh (7). Here is one way to fix that. In sixth (6) gear use the bottom part of your hand to push the shifter in neutral then allow the spring to push the shifter to the middle soft wall. Then push straight forward to seventh (7). When the spring pushed the shifter to the middle you will feel it in the palm of your hand with a side grip. Practice this a few times in a stationary truck with the engine idling and the clutch fully depressed.

Here is another way to use the walls. Shifting from fifth (5) to sixth (6) is the longest shift because you are shifting from one hard wall to the other. Here is an efficient way to make sixth (6) gear since you are required to double clutch. Why not take care of most of the shift with the first clutch. Here is what I mean, when you clutch to neutral, pull the shifter all the way over to the left hard wall then clutch again and pull straight down to sixth (6). Grab a truck that is not rolling and practice this a few times. Be sure you pre-select sixth (6) gear when you are in fifth (5) by pushing the splitter up. The splitter talks to the transmission when you shift to neutral so if you are in fifth (5) gear and push the splitter up, you are still in fifth (5) gear. When you shift to neutral, the splitter notifies the transmission that you want the higher gears and the transmission then makes those gears available. If you shift to neutral and then pull the splitter up, it may be awkward and prolong your shift. Better to get it out of the way while you are in fifth (5) so that you can concentrate on the long shift to sixth (6). One last item about the splitter; if you come to a stop and forget to push the splitter down before shifting to your start gear, the truck will likely stall when you try to pull forward. Try to remember, splitter down whenever you come to a stop.



## Upshifting:

When you are learning how to up-shift, try shifting early to avoid becoming frustrated. Shifting early means shifting between 1000 and 1500 RPM. Ten (10) to fifteen (15) is the sweet spot on most trucks. A car with a manual transmission will allow you to shift at almost any RPM. That is because many cars have synchronized transmissions. Truck transmissions are not synchronized so they require specific RPM. Here is a good rule of thumb when you are learning to shift. Try shifting the low gears, first (1) through fifth (5), at 1400 to 1500 RPM and the high gears, sixth (6) through tenth(10), at 1500 to 1600 RPM. Use that one, two speed; clutch, clutch; clutch to neutral, clutch to gear. Remember to push the clutch in just two (2) to three (3) inches when you are shifting; one, two; that is the speed for up-shifting. Here is what is happening when you up shift; let us assume you are in sixth (6) gear at 1500 RPM and you are ready to shift to seventh (7). When you depress the clutch and move the shifter to neutral the RPM needle begins to fall because you are not in gear. If it falls below 1000 before you make your next gear, the truck probably will not go into gear. So what you are really trying to do is beat the needle to ten (10) which means you are trying to make your next gear before the needle reaches 1000 RPM. If you fail to make your next gear before the needle falls below 10, you will have to kick the needle out into the sweet spot. Revving the engine once kicks the needle up. Rev the engine by depressing the fuel pedal using a short quick stab. Avoid depressing and holding the pedal down or you will push the sweet spot. If you are having trouble revving the engine to the correct RPM, try practicing in a stationary truck with the engine idling, the transmission in neutral and the brakes set; depress and release the fuel pedal quickly and watch the RPM needle. Did it rise to 1000 to 1500? If not, allow the needle to fall and then rev the engine again with a little more force. Push that needle up to 1300 to 1500. Practice revving the engine until you are consistently hitting the sweet spot. This exercise will help build muscle memory in your lower right leg. This is an important skill that you will use when you downshift because every downshift requires an engine rev.



### **Downshifting:**

Downshifting is a little different because there is an extra step involved. To down shift, the driver needs to rev the engine while in neutral so the proper procedure for down shifting is clutch to neutral, rev the engine, then clutch to gear. Recall up shifting; clutch to neutral, clutch to gear; one, two. Down shifting is clutch to neutral, rev, clutch to gear. When you give the truck fuel or rev the engine, kick the RPM needle up to 1300 to 1500 RPM. If you are having trouble down shifting, slow down before attempting to down shift. Slowing down will quickly improve your down shifts. We recommend slowing down to 1000 to 1100 RPM, 10 to 11, at these RPMs you can clutch to neutral, rev the engine, then clutch to gear. Kick that needle up to the sweet spot but avoid staring at the gauge. Glance at it after revving the engine. Take a few seconds to consider what is happening during a down shift. So you have prepared for the down shift by slowing down to 10 – 11. Well, 10 – 11 is at the bottom of the sweet spot so as soon as you shift to neutral the needle begins to fall below the sweet spot. To put the truck into the next lower gear you have to rev the engine to the sweet spot while in neutral. There is no one, two timing associated with down shifting because of the extra step of revving the engine. Also, if you don't kick the needle up high enough the first time, the truck will not go into gear and you have to try again by revving the engine a little higher. When you are down shifting, the same clutch rule applies; avoid pushing the clutch pedal to the floor when the truck is in motion or you will stop the gears in the transmission from turning. When the truck is in motion, the gears must also be in motion so use two (2) short clutches just as you do when up shifting.

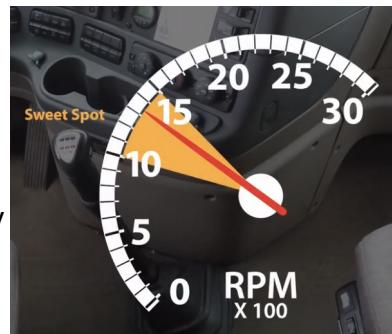


### **Fixing a Missed Gear:**

Patience over panic is the key to fixing a missed gear. Panic will cause you to grind your gears. Try to control that emotional response and practice this method instead. So I am going to miss my shift from sixth (6) to seventh (7) on purpose and then fix it the smart way. After I miss seventh (7) gear all I need to do is find the soft wall and then place the shifter at the opening of the gate to seventh (7) gear. You will feel the gears turning with just a little bit of pressure on the shifter then I will rev the engine to the sweet spot and the shifter will fall into gear. This method requires patience and the ability to locate the wall that is associated with your gear. If you apply too much pressure to the shifter you will create a grind. Light pressure on the shifter is all you need. Show the tester that you can fix a missed gear without panicking. Learning this technique in school will also impress your employer during your initial road test in their truck.

## High RPM / Low RPM: Shifting

If you push the RPMs above 1500, you can still shift and make your next gear but you will have to alter the timing of your shift. Shifting at the one, two speed may not work depending on how far you push the RPMs. So, lets assume that you have pushed the RPMs to 1800 without shifting. As soon as you begin your shift the RPM needle begins to fall. If you try to put the truck in gear before the needle has reached the sweet spot the transmission will grind. All you have to do is give the needle more time to fall into the sweet spot. You can do this by shifting slightly slower than one, two. Slightly slower means less than half a second. So instead of the one, two speed, try one – two. Very little difference because the needle falls rapidly. By the way, if you drive a company truck and you consistently shift at high RPMs they will notify you to stop wasting their fuel. Shifting early yields better fuel mileage. You will be a hero if you shift early because fuel is a trucking company's biggest cost. Let's move on to low RPM shifting. If you shift at low RPMs you can shift the transmission faster. Think about shifting every gear at 1300 RPM. As soon as you shift in neutral the needle starts falling but it doesn't have very far to fall before it is out of the sweet spot. To beat the needle to 10 you will have to shift faster; one,two; clutch, clutch.



## Shifting on Hills:

When you are traveling up hill and shifting, push the RPMs past 1500 and shift at the normal speed; one, two. Think about what's happening when you shift on a hill. As soon as you clutch to neutral, the needle begins to fall and gravity tries to pull down the hill which makes the needle fall faster. By pushing the needle to seventeen (17) or eighteen (18) hundred you are giving yourself extra time to shift because the needle has a greater distance to drop. If you are traveling down a hill, shift early because gravity speeds up your vehicle when you clutch to neutral. Try shifting at eleven hundred (1100) to twelve hundred (1200) RPM when cruising down a hill.

## Speedometer Math:

When students are learning how to shift a ten-speed transmission they tend to miss their gears. If it takes too long to find your next gear the truck will slow down because you are in neutral and you are coasting. If you are unsure of which gear to go to because your speed is decreased, check your speed and do some quick math. If you are traveling at roughly fifteen (15) miles per hour (MPH), add the two numbers in the number fifteen (15); one (1) plus five (5) and you get sixth (6) gear. If your speed is closer to twenty five (25) add the two (2) and the five (5) in twenty five (25) and you get seventh (7) gear. Thirty five (35) is eighth (8). forty five (45) is ninth (9). Fifty five (55), five (5) plus five (5) is tenth (10) gear. If you happen to be between those speeds, say, thirty (30) miles per hour (MPH) you have your choice of either seventh (7) or eighth (8) gear because thirty (30) is between twenty five (25) and thirty five (35). The numbers on your speedometer always end in five (5).



## **Why Does the Truck Jerk After Every Shift?**

This happens because your brain assumes that the shifting process is complete when you move the shifter into gear. Your shift is actually finished when you release the clutch pedal for the second time at the end of your double clutch. When shifting, you clutch to neutral and then clutch to gear and as soon as the shifter hits the gear you release the clutch pedal. Well, if you release it too quickly and from too great a depth, the truck will jerk after every shift. Look at it this way; if you push the clutch pedal in eight (8) to nine (9) inches, you will have to release the clutch pedal eight (8) to nine (9) inches. This causes the truck to jerk at the end of your shift. If you push the clutch pedal in just two (2) to three (3) inches during your double clutch, it will greatly improve the smoothness of your shifting. Pushing the clutch pedal in just two (2) inches means you only have to release it two (2) inches. That shorter distance keeps the truck from jerking.

## **Bad Habits:**

### **1. Pushing the clutch twice BEFORE moving the shifter**

This is usually a coordination issue. Your brain has not yet processed the idea of pushing the clutch and moving the shifter at the same time. That is okay. Try not to become frustrated. If you push the clutch in two (2) times before you try to shift, you will have a hard time moving your shifter to neutral. The proper way to double clutch is to depress the clutch pedal while moving the shifter. Your left leg and right hand should move at the same time. To help with your coordination you can perform the same time drill at a stationary truck or any chair.

### **2. Removing your hand from the shifter in neutral**

When you are shifting, it is best to keep your hand on the shifter. Some students will shift to neutral and then briefly remove their hand from the shifter before trying to shift to the next gear. If you remove your hand, you will have to put it back on the shifter and that will slow down your shift. If you shift too slow, the needle falls below the sweet spot and you have to rev the engine. Control the shifter during the shift process but try not to muscle it. You need to locate the hard walls and the soft wall while you are learning. Controlling the shifter while shifting will help you find your next gear.

### **3. Resting your hand on the shifter**

You will probably lose points on the driving part of the CDL skills test if you keep your hand on the shifter when you are not shifting. This is a car habit. The tester will expect you to use two (2) hands for every turn. If you have one (1) hand on the shifter while the vehicle is turning, you must be palming the steering wheel. Try to break this habit early in your training. Most professional truck drivers palm the wheel and shift through their turn, just do not do it while you are in school or during your test. You will likely be penalized.

### **4. Dancing in neutral**

Throwing the shifter around in neutral can be confusing to students. This is another car habit that does not translate to trucks. When you are learning how to shift you will want to establish a rhythm or timing for every shift. If you clutch to neutral and then throw the shifter around, the needle is falling out of the sweet spot. When you miss your gear you will have to rev the engine to find it. Instead of throwing the shifter around in neutral, find the wall that is associated with your next gear and then move the shifter into that gear. The walls provide a path to the gears.

## **10 – Speed Overview**

- A 10-speed is two 5-speeds, one on top of the other.
  - The shift pattern is an M.
  - Splitter Down: 1st - 5th and Low Reverse.
  - Splitter Up: 6th - 10th and High Reverse.
  - The splitter talks to the transmission when the shifter is in NEUTRAL
  - Use the hard and soft walls. The walls lead to the gears.
- 

### **Double Clutching**

- Clutch to neutral, clutch to gear; 1-2. Move the shifter and push the clutch in at the same time. Just 2-3 inches of clutch.
  - Up shift at 1500 RPM
  - Clutch brake: stops the gears in the transmission from spinning.  
Use only when the truck is stationary. Fully depress the clutch pedal
- 

### **Side Grip**

- Easy to manipulate the splitter. Assists with shifting from 6th to 7th.
- 

### **Upshifting**

- Shift every gear at the top of the sweet spot (1500 RPM).
  - Shift fast enough to beat the needle to the bottom of the sweet spot (1000 RPM).
  - Most shift take 2 seconds. 1 second clutch to neutral, 1 second clutch to gear.  
1 – 2.
  - Avoid gripping the shifter too tightly.
- 

### **Downshifting**

- Slow down before downshifting.
  - Shift every gear at the bottom of the sweet spot (1000 RPM).
- 

### **Missed Gears**

- Patience over panic. Find the wall associated with your gear, place the shifter at the gate opening of your gear (light pressure!), rev the engine and shift to gear.
- 

### **High / Low RPM Shifting**

- At high RPMs shift slower.
  - At low RPMs shift faster.
- 

### **Uphill / Downhill Shifting**

- Uphill: over-rev the engine (1700 – 1800 RPM) and shift at the normal speed.
  - Downhill: shift early (1200 – 1300 RPM).
- 

### **Speedometer Math**

- The numbers on your speedometer can be added together to determine your best gear at a particular speed.  
15 MPH:  $1 + 5 = 6$ th gear  
25 MPH:  $2 + 5 = 7$ th gear  
35 MPH:  $3 + 5 = 8$ th gear  
45 MPH:  $4 + 5 = 9$ th gear  
55 MPH:  $5 + 5 = 10$ th gear

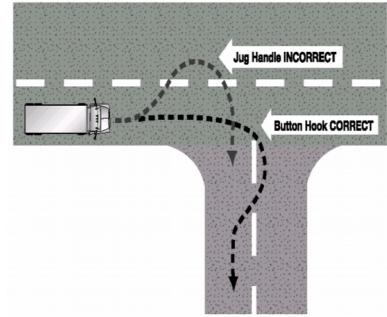
# Intersections

The space around a truck or bus is important in turns. Because of wide turning and off-tracking, large vehicles can hit other vehicles or objects during turns.

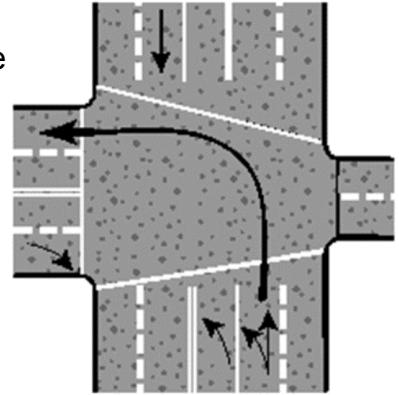
**Right Turns.** Here are some rules to help prevent right-turn crashes:

Turn slowly to give yourself and others more time to avoid problems.

If you are driving a truck or bus that cannot make the right turn without swinging into another lane, turn wide as you complete the turn. Keep the rear of your vehicle close to the curb. This will stop other drivers from passing you on the right. Don't turn wide to the left as you start the turn. A following driver may think you are turning left and try to pass you on the right. You may crash into the other vehicle as you complete your turn. If you must cross into the oncoming lane to make a turn, watch out for vehicles coming toward you. Give them room to go by or to stop. However, don't back up for them, because you might hit someone behind you.



**Left Turns.** On a left turn, make sure you have reached the center of the intersection before you start the left turn. If you turn too soon, the left side of your vehicle may hit another vehicle because of off-tracking. If there are two turning lanes, always take the right turn lane. Don't start in the inside lane because you may have to swing right to make the turn. Drivers on your left can be more readily seen.



**Entering Intersections.** Be aware of the size and weight of your vehicle when you cross or enter traffic. Here are some important things to keep in mind. Because of slow acceleration and the space large vehicles require, you may need a much larger gap to enter traffic than you would in a car. Acceleration varies with the load. Allow more room if your vehicle is heavily loaded. Before you start across a road, make sure you can get all the way across before traffic reaches you.

# **AAA CDL School**

## **Pre-Trip Inspection Quiz**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. What is the Primary and Secondary Air Pressure Range (PSI)?  
\_\_\_\_\_ - \_\_\_\_\_

2. What is the Governor Cut Off and Normal Driving Range (PSI)?  
\_\_\_\_\_ - \_\_\_\_\_

3. Describe the Emergency Stop Procedure?

4. What are the pre-requisites for the 1-Minute Timed Leak Test?

Primary and secondary air pressure gauges in the normal range 100-125  
Wheels chocked  
Tractor and trailer parking brake valves pressed in  
Service brake (brake pedal) pressed  
A timer / stop watch

5. Describe the Railroad Crossing Procedure.

STOP 15-50 feet away from the tracks  
Turn on the 4-way flashers  
Roll the windows down  
Look and listen for an approaching train  
Proceed across the tracks without shifting gears  
Once the trailer DOT bumper clears the last track turn off the 4-way flashers

6. What is the Battery Gauge Voltage Range? \_\_\_\_\_ - \_\_\_\_\_

7. What is the Oil Pressure Range? \_\_\_\_\_ - \_\_\_\_\_

8. Describe the Service Brake Check.

Press the service brake (Brake pedal)  
Release the parking brakes / press the parking valves in  
Put the transmission in 4<sup>th</sup> or 5<sup>th</sup> gear  
Accelerate up to 5MPH  
Stop the vehicle and tell the tester that the vehicle did not pull Left or Right

9. What should happen between 40-60 PSI during the Fan Down Test?

Low pressure warning light should come on  
Low pressure warning buzzer should sound

10. What should happen between 20-40 PSI during the Fan Down Test?

11. What position should the ignition key be in during the Fan Down Test?

12. Before which brake test should you or the tester remove the wheel chocks?

# **AAA CDL School**

## Pre-Trip Inspection Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. What do you check under the front of the vehicle?
  2. The front tires have no less than \_\_\_\_\_ of an inch of tread.
  3. By law what Safety / Emergency Equipment should my vehicle carry?
  4. On the back of the trailer I have 3 ID lights which are?
  5. What do you do to perform a Safe Start?