

# Pre- and post-trip inspections

## Risk Control services

from Liberty Mutual Insurance



### Highlights:

- Drivers play a key role in maintenance programs
- Effective inspections take little time
- How to make a pre- and post-trip inspection
- Recording inspection results
- Federal regulations

Keeping vehicles properly maintained requires a cooperative effort between driver and shop. Both parties must understand their roles in the maintenance program and put forth a conscientious effort to make it work.

The driver is on the road with the equipment for several hours each day, and is in the best position to observe the vehicle's performance under varied conditions. Through daily inspection reports, the driver plays a key role in the maintenance program.

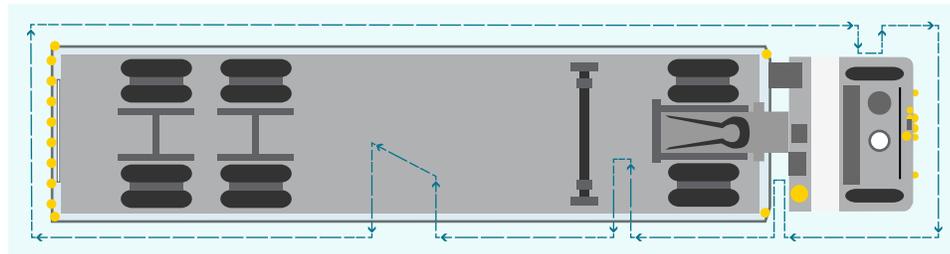
Effective pre- and post-trip inspections do not take a great deal of time. Drivers trained to make these inspections can detect changes

in the vehicle, and report mechanical conditions that might lead to breakdowns, accidents, or having vehicles placed "out of service" by Federal or State authorities in roadside inspections. Pre- and post-trip inspections should be made with emphasis on brakes, steering, tires, lights, suspension, and safety equipment. To protect the driver and the public, the vehicle must be roadworthy before it leaves the yard. (See Federal Regulations Overview below for more information covering these inspections.)

In many cases, a driver is the only contact between a company and its customers. The way a driver operates the company vehicle leaves a lasting impression on customers and the public. Driver morale, which in turn promotes safe driving, is influenced by clean, attractive, properly maintained vehicles. Properly maintained vehicles are not only safer, they also help build good public relations.

The object of pre- and post-trip inspections is to detect changes. It might be a change in fluid levels or colors, a belt that has stretched, or a bulge in a tire. Anything that has changed represents a potential problem.

## How to make a pre- or post-trip inspection



**Figure 1.** Recommended inspection path

While the details of the inspection will vary with the type of vehicle, Figure 1 shows the recommended inspection path. The list on the following pages gives a general overview of the steps involved in an inspection.

The following guidelines should be modified to match the specific vehicle and also to include any special equipment.

### 1. Approaching vehicle

Approach the vehicle and look for any leaks or loose-hanging objects. Also check unit numbers, proper tags, and placards if the cargo being carried requires them.

### 2. Engine compartment

- Inspect, then release the hood latches and lift the hood noting any difficulty or binding.
- Check the condition of the hood hinges, hydraulic assist struts, or limiting cables.

- Inspect the engine compartment for leaks (oil, water, or other fluids).
- Check all fluid levels (oil, radiator, power steering, windshield wipers, etc.) before starting the engine.
- Check all belts and pulleys for wear, tension, or slipping.
- Check all electrical wiring for signs of wear or arcing.
- Check all hoses for indications of wear, cracking, or leaking.
- Check the steering box for looseness. Make sure all components are secure, and moving parts move freely.
- Underneath, check U-bolts for looseness, inside of the springs, and the front tires for any deficiencies.

### 3. In vehicle

- Enter the cab and test headlights, four-way flashers, clearance and identification lights, and all other running lights.
- Measure the clutch free-play travel. It should be about 1 inch.
- Check the foot brake pedal to make sure that the pivot is working freely, and that the heel of the pedal is not obstructed by dirt or other objects. Do the same for the accelerator pedal.
- Start the engine and let it idle until all gauges are working. Check the gauges, horn, windshield wipers/washers, heater, defroster, air-conditioning, and other accessories.
- Measure the steering wheel free-play. It should be no more than 30 degrees.
- After chocking the unit to prevent movement, shut off the engine, release the parking brakes, then hold the foot brake pedal down and watch the air pressure gauge. Air loss should not exceed 2 pounds per minute for a single vehicle, or 3 pounds per minute for a combination. Regulations may vary between states or localities; check with your local regulatory body.
- Pull the trailer hand valve to check operation of trailer brakes. Release the valve and listen for air exhaust.
- Pump the air down with the foot brake, and check to make sure the "Low Air" warning light and buzzer operate when the air pressure falls to 50 percent below maximum pressure, or approximately 60 pounds.
- Start the engine and build air up to operating pressure.
- Set the parking brake, and test by pulling against it in low gear with the engine idling. Do the same to check the operation of the trailer emergency brake.

- Check to see that all necessary emergency equipment (fire extinguisher and emergency markers) are available and in good condition. Make sure you have all necessary documents and forms, such as cab cards, permits, trip reports, vehicle condition report forms, log book, accident reporting kit, etc.
- Shut off the engine, exit the cab, and begin the remainder of the inspection, starting at the driver's door.

*Depending on the make and model of the unit and special equipment, check points may vary from side to side on the unit. Regardless of which side they are located on (left or right) they should be checked.*

#### **4. Left (driver) side of cab**

- Check the left side mirror and brackets.
- Inspect the steering axle tires for cuts, bruises, wear, and inflation (use a gauge).
- Make sure no lug nuts are loose or missing.
- Check the oil level in the front axle hub.
- Check for looseness in the steering gear box and drag links (Note: if looseness is found, do not use the unit until corrected).
- Look for broken or loose spring leaves or spring U-bolts.
- Inspect the grab rails and steps.
- Listen for air leaks as you walk around unit.

#### **5. Front of cab**

- Check the clearance and identification lights.
- Inspect the wiper arms and blades by lifting them away from windshield.
- Verify the high- and low-beam headlight function, as well as the turn signals.

#### **6. Right (passenger) side of cab**

- Check the right side mirror and bracket.
- Follow the same procedure as the left side, checking tires, wheels, suspension, hubs, etc.
- Inspect the muffler, brackets, and air intake.
- Check the right fuel tank for leaks.
- Check the filler cap gasket and tank brackets.
- Check the fuel level (fuel gauges can fail).
- Make sure battery covers are in place and properly secured.
- Check the lights and reflectors.

- Inspect the right drive axle tires for wear and cuts, as well as for proper inflation.
- Look for loose or missing lugs, cracked rims, or leaking oil seals.
- Verify the condition of the tandem spring leaves, U-bolts, and bushings, looking for cracks or excessive wear.
- Check for loose mounting bolts on the brake chambers.
- Look at the brake assembly, the drum condition, and lining thickness (linings should be at least one-quarter inch thick).
- Make sure pins and springs are in place and shoes have proper contact with the drums.
- Check the fifth-wheel mounting bolts and the pivot pin for cracks or excessive wear.
- Verify that the locking lever is in the locked position and the jaws are completely around the trailer king pin.
- Check the air tank mounting brackets, hose, and drain the tank, (as required by the air system regulations in your state or local area).

#### **7. Right side of truck/trailer**

- Make sure the spare tire is secured to its carrier, preferably by a sturdy cable or chain with a bolt or lock.
- Inspect the frame rails for cracks and loose braces.
- Check the cargo or tarpaulin tie-downs, if applicable.
- Verify the proper suspension of air lines under the unit.
- Check the right-side tires, wheels, springs, brakes, lights, reflectors, and conspicuity markings, using the same procedures as recommended for the cab.
- Inspect the axles and spring assembly for missing or loose hangers, or U-bolts and broken springs.

#### **8. Rear of truck/trailer**

- Check the lights, reflectors, and conspicuity markings.
- Test the brake lights and turn signals.
- Inspect the mud flaps and bumper.
- Check the cargo door hardware and rear tie-downs, if applicable.
- Inspect the under-ride bumper.
- If an 800 number is used, verify that the 800 number is in place and legible.
- Also check any materials handling equipment such as power gates, dollies, or conveyors.

## 9. Left side of truck/trailer

- Check the left-side tires, wheels, springs, brakes, lights, reflectors, and conspicuity markings, as you did on the right side.
- Inspect the tandem slide locks and landing gear assembly.

## 10. Left (*driver*) side of cab

- After checking the left drive axle tires, wheels, brakes, spring assembly and fifth-wheel mounting, step up on the tractor deck and inspect the air hoses and trailer light cord.
- Look at the glad-hand grommets.
- Step down and make sure the battery covers are in place and properly secured.
- Check the left-side fuel tank.

## Recording the results of pre- and post-trip inspections

Record the results of each pre- and post-trip inspection, and turn them over to the maintenance department to make necessary repairs. FMCSA regulations do not require documenting the results of a pre-trip inspection for most equipment/operations, but drivers should show it took place when documenting their hours of service. Post-trip inspections should be documented using an inspection report which identifies the vehicle, driver, date, and other details such as a driver signature. Some types of operations may still be required to document a pre-trip inspection.

## Federal regulations - overview

According to Part 396.13 of the Federal Motor Carrier Safety Regulations, before driving a motor vehicle, the driver must:

- Be satisfied that the vehicle is in safe operating condition,
- Review the last vehicle inspection report, and
- Sign the inspection report if defects or deficiencies were noted.

The signature acknowledges that the driver has reviewed the report, and certification that any required repairs have been performed.

In Part 396.11, the Federal regulations say that at the completion of each day's work, every motor carrier must require its drivers to prepare a written report on each vehicle operated, covering at least the following parts and accessories:

- Service brakes, including trailer brake connections
- Parking brake
- Steering mechanism
- Lighting devices and reflectors

- Horns
- Windshield wipers
- Rear vision mirrors
- Coupling devices
- Wheels and rims
- Emergency equipment

On these reports, drivers must identify the vehicle, and list any defect or deficiency they discover or are notified of that might affect safe operation of the vehicle or result in its mechanical breakdown. In all instances, the driver must sign the vehicle inspection report. Drivers who operate more than one vehicle during the day must prepare a report for each vehicle operated.

If the vehicle inspection report identifies conditions that are likely to affect the safe operation of the vehicle, the motor carrier or their agent must repair those items, and certify on the report that the defect has been corrected before the vehicle is operated again.

The original copy of each vehicle inspection report and the certification of repairs must be retained for at least three months, and a legible copy of the last vehicle inspection report, certified if required, must be carried on the power unit.

## **Additional resources**

The following forms are provided as part of this reference package:

*Pre- and post-trip inspection worksheet for heavy straight trucks, RC 896*

*Pre- and post-trip inspection for multi-trailers, RC 899*

*Pre- and post-trip inspection worksheet for pick-ups, light trucks, and vans, RC 889*

*Pre- and post-trip inspection worksheet for school buses, RC 887*

*Pre- and post-trip inspection worksheet for tractor-trailers, RC 895*



The illustrations, instructions, and principles contained in the material are general in scope and, to the best of our knowledge, current at the time of publication. Our risk control services are advisory only. We assume no responsibility for: managing or controlling customer safety activities, implementing any recommended corrective measures, or identifying all potential hazards.

No attempt has been made to interpret any referenced codes, standards, or regulations. Please refer to the appropriate government authority for interpretation or clarification.

Insurance underwritten by Liberty Mutual Insurance Co. or its affiliates or subsidiaries.

© 2019 Liberty Mutual Insurance, 175 Berkeley Street, Boston, MA 02116.

[libertymutualgroup.com/riskcontrolservices](http://libertymutualgroup.com/riskcontrolservices)

07/17

RC 222 R6