

## **WHY INSPECT?**

Safety is the most important reason you inspect your vehicle. Safety for yourself and for other road users. A vehicle defect found during an inspection could save you problems later. You could have a breakdown on the road that will cost time and money, or even worse, a crash caused by the defect. Federal and state laws require that drivers inspect their vehicles. Federal and state inspectors also may inspect your vehicles. If they judge the vehicle to be unsafe, they will put it "out of service" until it is fixed.

## **SEVEN STEP INSPECTION METHOD**

Establish a routine and be consistent. You should do a pre-trip inspection the same way each time so you will learn all the steps and be less likely to forget something. The following seven-step method should be useful.

### **APPROACHING THE VEHICLE**

Notice general condition. Look for damage or vehicle leaning to one side. Look under the vehicle for fresh oil, coolant, grease, or fuel leaks. Check the area around the vehicle for hazards to vehicle movement (people, other vehicles, objects, low-hanging wires, limbs, etc.).

### **STEP 1: VEHICLE OVERVIEW**

#### ***Review Last vehicle Inspection Report.***

Drivers may have to make a vehicle inspection report in writing each day. The motor carrier must repair any items in the report that affect safety and certify on the report that repairs were made or were unnecessary. You must sign the report only if defects were noted and certified to be repaired or not needed to be repaired.

### **STEP 2: CHECK ENGINE COMPARTMENT**

#### ***Check that the Parking brakes are on and/or Wheels Chocked.***

You may have to raise the hood, tilt the cab (secure loose things so they do not fall and break something) or open the engine compartment door. Check the following:

- Engine oil level.
- Coolant level in radiator; condition of hoses.
- Power steering fluid level; hose condition (if so equipped).
- Windshield washer fluid level.
- Battery fluid level, connections, and tie-downs (battery may be located elsewhere).
- Automatic transmission fluid level (may require engine to be running).
- Check belts for tightness and excessive wear (alternator, water pump, air compressor) - learn how much "give" the belts should have when adjusted right, and check each one.
- Leaks in the engine compartment (fuel, coolant, oil, power steering fluid, hydraulic fluid, battery fluid).
- Cracked, worn electrical wiring insulation.
- Lower and secure hood, cab or engine compartment door.

### **STEP 3: START ENGINE AND INSPECT INSIDE THE CAB**

#### ***Get In and Start Engine***

- Make sure parking brake is on
- Put gearshift in neutral (or "park" if automatic).
- Start engine; listen for unusual noises.
- If equipped, check the Anti-lock Braking System (ABS) indicator lights. Light on dash should come on and then turn off; if it stays on the ABS is not working properly.
- For trailers only: if the yellow light on the left rear of the trailer stays on, the ABS is not working properly.
- Look at the Gauges
  - Oil pressure should come up to normal within seconds after engine is started
  - Build air pressure to governor cut-out (usually around 120 – 140 psi). Know your vehicle's requirements.
    - Air pressure should build from 50 to 90 psi within three (3) minutes.
    - At 1800 RPM's, air pressure should build from 85psi to 100psi within 45 seconds in dual air systems.
  - Ammeter and/or voltmeter should be in normal range(s).
  - Coolant temperature should begin gradual rise to normal operating range.
  - Engine oil temperature should begin gradual rise to normal operating range.
- Warning lights and buzzers for oil, coolant, charging circuit warning and anti-lock brake system lights should go out right away.

### ***Check Condition of Controls***

Check all of the following for looseness, sticking, damage, or improper setting:

- Steering wheel
- Clutch
- Accelerator ("gas pedal")
- Brake controls:
  - Foot brake
  - Trailer brake (if vehicle has one)
  - Parking brake
  - Retarder controls (if vehicle has them)
- Transmission controls
- Interaxle differential lock (if vehicle has one)
- Horn(s) (air and city)
- Windshield wiper and washer
- Lights:
  - Headlights
  - Dimmer switch
  - Turn signal
  - Four-way flashers
  - Parking, clearance, identification, marker switch(es)

### ***Check Mirrors and Windshield***

Inspect mirrors and windshield for cracks, dirt, illegal stickers, or other obstructions to seeing clearly. Clean and adjust as necessary.

### ***Check Emergency Equipment***

Check for safety equipment:

- Properly charged and rated fire extinguisher
- Three (3) red reflective triangles
- Spare electrical fuses (unless vehicle has circuit breakers)

Check for optional items such as:

- Chains (where winter conditions require)
- Tire changing equipment
- List of emergency phone numbers
- Crash reporting kit (packet)

### **STEP 4: TURN OFF ENGINE AND CHECK LIGHTS**

Be safe, make sure the parking brake is set, turn off the engine, and take the key with you so no one else can start the vehicle. Turn on headlights (low beams) and four-way emergency flashers, and get out of the vehicle.

### **STEP 5: PERFORM WALKAROUND INSPECTION**

- Go to front of vehicle and check that low beams are on and both of the four-way flashers are working.
- Push dimmer switch and check that high beams work.
- Turn off headlights and four-way emergency flashers.
- Turn on parking, clearance, side-marker and identification lights.
- Turn on right turn signal, and start walk around inspection.

### ***General***

- Walkaround and inspect.
- Clean all lights, reflectors and glass as you go along.
- Check for cracked, chipped or missing windows and mirrors

### ***Left Front Side***

- Driver's door glass should be clean.
- Door latches or locks should work properly.
- Left front wheel:
  - Condition of wheel and rim - missing, bent, broken studs, clamps, lugs, or any signs of misalignment.
  - Condition of tires - properly inflated, valve stem and cap okay, no serious cuts, bulges, or tread wear.

- use wrench to test rust-streaked lug nuts, indicating looseness.
- Hub oil level okay, no leaks.
- Left front suspension:
  - Condition of spring, spring hangers, shackles, u-bolts.
  - Shock absorber condition.
- Left front brake:
  - Condition of brake drum or disc.
  - Condition of hoses.

#### Front

- Condition of front axle:
- Condition of steering system.
  - No loose, worn, bent, damaged or missing parts.
  - must grab steering mechanism to test for looseness.
- Condition of windshield:
  - Check for damage and clean, if dirty.
  - Check windshield wiper arms for proper spring tension.
  - Check wiper blades for damage, "stiff" rubber and securement.
- Lights and reflectors:
  - Parking, clearance and identification lights clean, operating and proper color (amber at front).
  - Reflectors clean and proper color (amber at front).
- Right front turn signal light clean, operating and proper color (amber or white on signals facing forward).

#### Right Side

- Right front: check all items as done on left front.
- Primary and secondary safety cab locks engaged (if cab-over-engine design).
- Right fuel tank(s):
  - Tank strap in proper condition
  - Securely mounted, not damaged or leaking
  - Fuel crossover line secure
  - Tank(s) contain enough fuel
  - Cap(s) on and secure
- Condition of visible parts:
  - Rear of engine - not leaking
  - Transmission - not leaking
  - Exhaust system - secure, not leaking, not touching wires, fuel or air lines
  - Frame and cross members - no bends or cracks
  - Air lines and electrical wiring - secured against snagging, rubbing, wearing
  - Spare tire carrier or rack not damaged (if so equipped)
  - Spare tire and/or wheel securely mounted in rack
  - Spare tire and wheel adequate (proper size, properly inflated)
- Cargo securement (trucks):
  - Cargo properly blocked, braced, tied, chained, etc.
  - Header board adequate, secure (if required)
  - Side boards, stakes strong enough, free of damage, properly set in place (if so equipped)
  - Canvas or tarp (if required) properly secured to prevent tearing, billowing or blocking of mirrors
  - If oversize, all required signs (flags, lamps, and reflectors) safely and properly mounted and all required permits in driver's possession
- Curbside cargo compartment doors in good condition, securely closed, latched/locked and required security seals in place

#### Right Rear

- Condition of wheels and rims--no missing, bent, or broken spacers, studs, clamps, or lugs
- Condition of tires--properly inflated, valve stems and caps okay, no serious cuts, bulges, tread wear, tires not rubbing each other, and nothing stuck between them
- Tires same type, e.g., not mixed radial and bias types
- Tires evenly matched (same sizes)

- Wheel seals/bearings not leaking.
- Suspension:
  - Condition of spring(s), spring hangers, shackles, and u-bolts
  - Axle secure
  - Powered axle(s) not leaking lube (gear oil)
  - Condition of torque rod arms, bushings
  - Condition of shock absorber(s)
  - If retractable axle equipped, check condition of lift mechanism. If air powered, check for leaks
  - Condition of air ride components
- Brakes:
  - Brake adjustment
  - Condition of brake drum(s) or discs
  - Condition of hoses--look for any wear due to rubbing
- Lights and reflectors:
  - Side-marker lights clean, operating, and proper color (red at rear, others amber)
  - Side-marker reflectors clean and proper color (red at rear, others amber)

### **Rear**

- Lights and reflectors:
  - Rear clearance and identification lights clean, operating, and proper color (red at rear)
  - Reflectors clean and proper color (red at rear)
  - Taillights clean, operating, and proper color (red at rear)
  - Right rear turn signal operating, and proper color (red, yellow, or amber at rear)
- License plate(s) present, clean, and secured
- Splash guards present, not damaged, properly fastened, not dragging on ground, or rubbing tires
- Cargo secure (trucks)
  - Cargo properly blocked, braced, tied, chained, etc.
  - Tailboards up and properly secured
  - End gates free of damage, properly secured in stake sockets
  - Canvas or tarp (if required) properly secured to prevent tearing, billowing, or blocking of either the rearview mirrors or rear lights
  - If over-length, or over-width, make sure all signs and/or additional lights/flags are safely and properly mounted and all required permits are in driver's possession
- Rear doors securely closed, latched/locked

### **Left Side**

Check all items as done on right side, plus:

- Battery(ies) (if not mounted in engine compartment)
- Battery box is securely mounted to vehicle
- Box has secure cover
- Battery(ies) secured against movement
- Battery(ies) not broken or leaking
- Fluid in battery(ies) at proper level (except maintenance-free type)
- Cell caps present and securely tightened (except maintenance-free type)
- vents in cell caps free of foreign material (except maintenance-free type)

### **STEP 6: CHECK SIGNAL LIGHTS**

#### ***Get In and Turn off Lights***

- Turn off all lights
- Turn on stop lights (apply trailer hand brake or have a helper put on the brake pedal)
- Turn on left turn signal lights

#### **Get out and Check Lights**

- Left front turn signal light clean, operating and proper color (amber or white on signals facing the front)
- Left rear turn signal light and both stop lights clean, operating, and proper color (red, yellow, or amber)

### **Get In vehicle**

- Check Safety Belt
- Turn off lights not needed for driving
- Check for all required papers, trip manifests, permits, etc.
- Secure all loose articles in cab (they might interfere with operation of the controls or hit you in a crash)
- Start the engine

### **STEP 7: START THE ENGINE AND CHECK BRAKE SYSTEM**

- While seated in the driver's seat for the below tests, make sure your seat belt is on and properly fastened.
- Test for hydraulic or air leaks
  - Hydraulic: Pump the pedal three times then apply firm pressure to the pedal and hold for five seconds. The pedal should not move. If it does, there may be a leak
  - Air: Air up to cut off, release all brakes, place vehicle in a low gear or chock tires, turn engine off but keep key in "ON" position.
    - STATIC TEST: Do nothing and make sure you lose less than 2 psi of air in a minute for a single vehicle and 3psi in a minute for a combination.
    - APPLIED TEST: Press and hold brake pedal for one-minute watching air pressure gauge. No more than 3 psi in a minute for a single vehicle or 4 psi loss in a minute for a combination.
- Test Alarms (air)
  - Fan the foot brake to ensure that lights and audible alarm activate around 60psi.
  - Continue fanning foot brake and tractor protection valve should close around 30psi.
- Test parking brakes
  - Set parking brake
  - Place power unit in low gear
  - Gently pull forward against parking brake
- Test service brakes
  - Note any "pulling", feel or noise

Please remember, if you find anything unsafe during this inspection, follow your company policies and procedures to report the deficiency and have it repaired. Federal and state laws forbid operating any unsafe vehicle.