Lesson Four: Pre-Trip Inspection - Truck

A. Overview

1. **Inspections are to be done daily or per shift as required by C.D.L. Law**
2. **Inspections are performed by the operator**
3. **Inspections save money**
    a. Repairs caught early are less expensive and easier to fix
    b. Repairs caught early reduce down time

B. Operator Selection

1. **Good eyesight**
    a. Depth perception, distance vision, and peripheral vision are all needed for proper operator performance
2. **Mobility**
    a. Ability to safely climb in and out of a machine
    b. Ability to move around inside the cab to improve visibility
3. **Hearing**
    a. Ability to detect and identify unusual noises
4. **Overall physical condition**
    a. Medical considerations prior to equipment operation include
        i. Back problems
        ii. Stiffness
        iii. Medication side affects
        iv. Any other physical limitation that could affect the ability to operate efficiently and safely
5. **Mental alertness**
    a. Potential hazards include
        i. Personal problems
        ii. Hangovers

iii. Attention deficit

iv. Stress

v. Lack of sleep

6. Experience

a. Experience must be considered, but inexperience can be overcome by formal or on-the-job training

7. Awareness

a. Operators must be aware of hazards associated with

i. Equipment

ii. Themselves

iii. Their crew

iv. ODOT

C. Operator Personal Protective Equipment (PPE) – Proper Safety Apparel

1. Clothing

a. Should not be bulky. Bulky clothing restricts movement.

b. Should be fitted not loose fitting. Loose fitting clothing can snag controls or get caught when entering or exiting equipment

c. Dress in layers and add or remove layers as needed

d. Do not wear

i. Rings or jewelry

ii. Watches

iii. Necklaces

iv. Any item which could become snagged and cause damage or injury

2. Footwear

a. Wear a leather boot with ankle protection

b. Do not wear tennis shoes

c. Employees shall wear protective footwear when working in areas where there is a danger of foot injuries. Light footwear such as tennis shoes shall not be worn. Safety or heavy work shoes that cover the ankle are recommended.

3. Head protection

a. A hard hat may be required by the district, especially when entering and exiting the truck cab in a designated hard hat area

i. The hard hat should fit snugly so that it does not move when turning the head, but not so tightly as to cause discomfort

4. Eye protection

a. Safety glasses are highly recommended and may be required by the district

i. Make sure they they are clean, properly fitting, and safety rated ANSI Z87.1

ii. Over the counter sunglasses are not considered proper eye protection unless they have the ANSI Z87.1 stamp on them

5. Gloves

a. May be needed depending on

i. Weather

ii. Site conditions

iii. Operator preference

b. Should fit snugly enough to allow the operator to feel the controls

6. Hearing protection

a. May be required, depending on the equipment. Check with the Safety Office

7. Safety Vests

a. A safety vest shall be worn at all times unless supervision deems it to be a secondary hazard

D. The EM-78 Form – Truck Vehicle Inspection Form

OHIO DEPARTMENT OF TRANSPORTATION
PRE-TRIP INSPECTION

TRUCK TAG #_____
EQUIPMENT #_____ END MILES_____ END HOURS_____
TRAILER #_____ START MILES_____ START HOURS_____
SERVICE DUE_____ TOTAL MILES_____ TOTAL HOURS_____

Optional Equipment: Truck Axles…….2 3 4 Trailer Axles…….1 2 3 Air Brakes…….. Yes No
0 = Checked and OK N= Not Satisfactory

All Vehicles

Engine Compartment

____ Dirt Evacuator
____ Check Belts
____ Oil Level
____ Coolant
____ Power Steering Fluid
____ Water Pump
____ Alternator
____ Washer Fluid
____ Air Compressor
____ Any Leaks
____ Slack Adjusters
____ Chambers
____ Hoses
____ Drums
____ Spring Leaves
____ Spring Mount/Shackles
____ Shock Absorber
____ Rims
____ Hub Oil Seal
____ Tires
____ Valve cap/stem
____ Wheel Fasteners (nuts)
____ Steering (All components)
____ Transmission Check (hot/cold)

Engine Start

____ Unusual Noises
____ Air Filter Ind.
____ Lighting Indicators
____ Clutch/Gearshift
____ Oil Pressure Builds
____ Air Pressure Gauge
____ Ampmeter/Voltmeter
____ Brake Check (Air/Hvd)
____ Steering Play
____ Parking Brake
____ Mirrors/Windshield
____ Wipers/Washer Fluid
____ Horn(s)
____ Heater/Defroster
____ Safety/Emergency Equipment
____ Doors/Mirrors Brackets

Walk Around

____ High/Low Beams
____ Tail Lights
____ Turn Signals
____ Emergency Flashers
____ Strobe Lights/Brackets
____ Brake Lights
____ Marker Lights
____ Reflectors

Drivers/Fuel Area

____ Fuel Tank
____ Exhaust System
____ Body & Lights
____ Mirror
____ Handrails

Rear Wheels

____ Rims
____ Tires
____ Valve cap/stem
____ Axle Seals
____ Wheel Fasteners (nuts)
____ Spacers

Rear Suspension

____ Springs
____ Spring Mount
____ Torsion/Shocks
____ Air Bags

Rear Brakes

____ Slack Adjuster
____ Chamber
____ Hoses
____ Drum

Under Vehicle – Rear of Truck/Tractor

____ Drive Shaft
____ Frame
____ Batteries
____ Air Dryer
____ Rear End
____ Tailgate/Hinge Pin
____ Tailgate Latch
____ Bed & Subframe
____ Lights/Reflectors
____ Hydraulic Oil
____ Mud Flaps

Plow

____ Hydraulic Lines
____ Frame
____ Blade
____ Shoes
____ Plow Lights
____ Snow Deflector

Trailer

____ Tie Down Points
____ Hitch/5 Wheel King Pin
____ Safety Chain
____ Tires
____ Wheel Fasteners (nuts)
____ Hubs
____ Suspension
____ Lights
____ Brakes
____ Landing Gear
____ Deck
____ Ramps

On the Move

____ Seat Belts
____ Steering
____ Park Brake Check
____ Service Brake Check
____ Clutch/Transmission
____ Backup Alarm

End Time_____
Start Time_____
Total Time_____
Date:_____

_____
Drivers Signature

1. **Created by the Office of Equipment Management as a tool to be utilized by the operator prior to operating any piece of power equipment at ODOT**

2. **Designed to be a check list for many types of equipment; therefore only sections that apply to a particular situation need to be completed**

    a. Engine compartment

        i. Dirt evacuator

Figure 4-1 Dump truck engine compartment, dirt evacuator

a) The dirt evacuator located at the bottom of the air filter canister must be checked daily (if the truck is equipped with one)

b) In order to empty the evacuator, the dust cap must be squeezed several times until no more dirt comes out

c) Once a week, remove the dust cup from the evacuator and check to make certain that the hole at the bottom of the canister is not plugged

ii. Belts

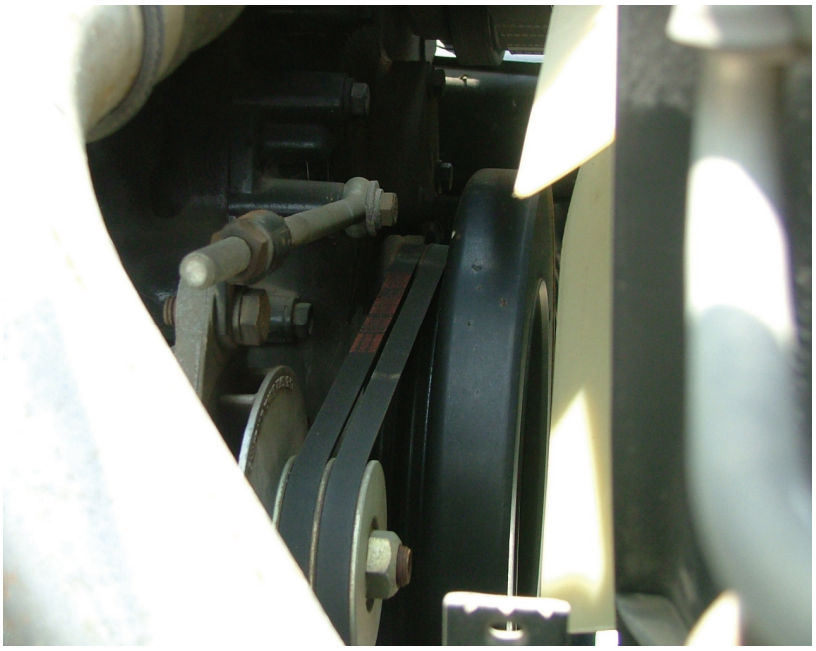

Figure 4-2 Dump truck engine belts

a) Check the belts for

1) Wear that can be on the inside of the belt

(a) This can be identified by running a finger across the ridges on the inside of the belt to make certain that the ridges have not worn off

2) Cracks that are normally on the inside of the belt but visible to the eye

3) Frays that occur on the sides of the belt

4) The tension must also be checked on the belt

(a) To check the tension, push on the belt in the center between two points

(b) The deflection should not be more than ½" to ¾"

(1) If the belt is not properly tensioned, it should be adjusted as necessary by a mechanic

iii. Oil level

Figure 4-3 Engine oil dip stick (showing oil level)

a) Check the oil level to ensure that it is properly filled to the manufacturer's specifications as indicated on the dipstick

    1) When checking the oil level, the equipment must be on fairly level ground, or the reading will not be accurate

b) Examine the oil color

    1) Unused oil is normally light brown to almost clear

    2) Look at the color, but not necessarily at how black the oil is

        (a) A diesel motor is a high carbon engine and can turn oil black quickly, yet the oil could still be good

    3) Look for discoloration

        (a) Oil that looks like chocolate milk indicates that water is present

        (b) If there is no discoloration in the oil but the level is high, smell the oil to see if it contains diesel fuel

4) Rub the oil between two fingers to feel for any grit or metal shavings (signs of internal engine problems)

   (a) With the oil on the fingers, pull the fingers slightly apart and see if the oil beads between them. If it does, the viscosity is most likely still good.

5) Replace the dipstick, and check the level a second time

6) NEVER Overfill – this may cause engine damage

iv. Coolant level

Figure 4-4 Dump truck coolant level fill bottle

a) Check the coolant levels to ensure that the equipment is properly filled

b) The most common problem is a low level of coolant, which can cause the engine to overheat

c) If the coolant system has a sight glass, there is no need to open the radiator to check the fluid

d) Follow these steps to check the coolant level

1) Check to make sure that the radiator is cool enough to open, but be careful to avoid burns

    (a) To check the radiator, use a bare hand. Wave the hand slowly over the radiator to detect whether it is giving off heat.

    (b) If the radiator is giving off heat, wait for the engine to cool down

        (1) NEVER open a hot radiator

    (c) If the radiator is not giving off heat, tap the cap to check for heat

2) If the radiator is cool enough to touch with a bare hand, then it is cool enough to open

    (a) It is advisable to use a rag over the cap since most equipment has a pressurized system

    (b) Even when cool, there is still pressure in the radiator

3) Once the cap is open, the level should be about an inch or two below the cap but covering the flow tube openings

4) The fluid should be a light green or red in color and should not be rusty looking

5) If the fluid is rusty or looks like plain water, the cooling system should be serviced

e) Year round, use antifreeze, not plain water

1) Approximately a 50/50 mix of antifreeze and water is recommended. Do not mix different antifreezes.

v. Power steering fluid

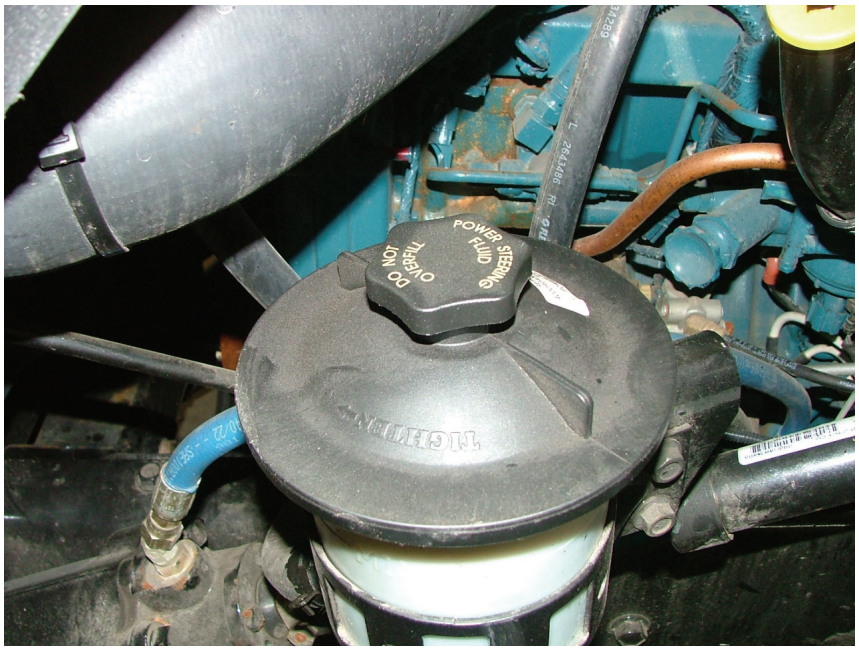

Figure 4-5 Dump truck power steering fluid reservoir

a) If the truck has power steering, check the fluid level and check for leaks

b) Look at the bottom of the reservoir and check the lines going to the power steering pump to ensure that there are no leaks

vi. Water pump

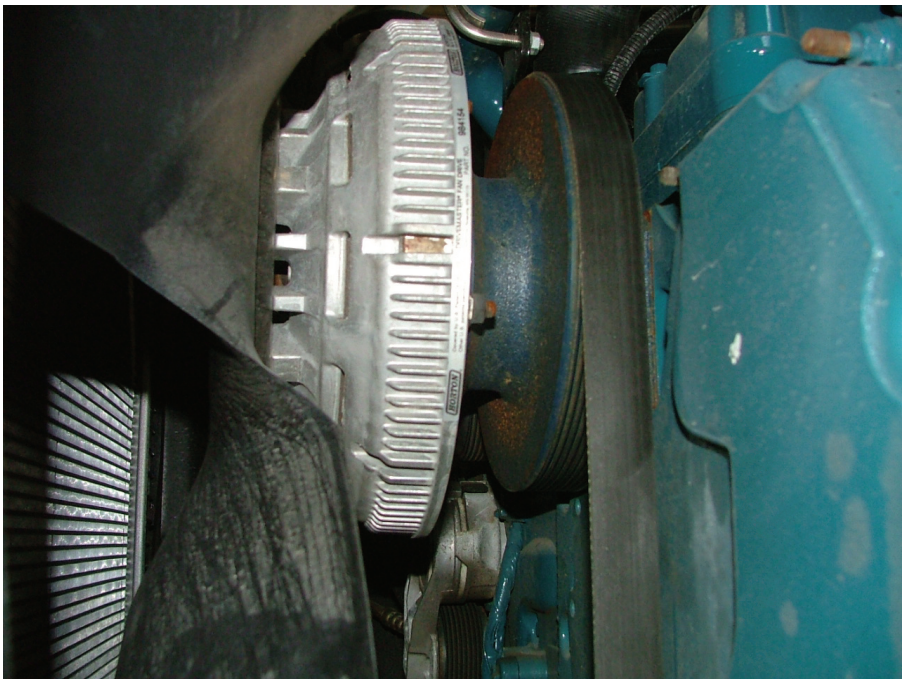

Figure 4-6 Dump truck water pump

a) Follow the top and bottom radiator hoses to the water pump

b) Examine the hoses where they attach to the pump, as well as the area between the pump and the block, for leaks

vii. Alternator

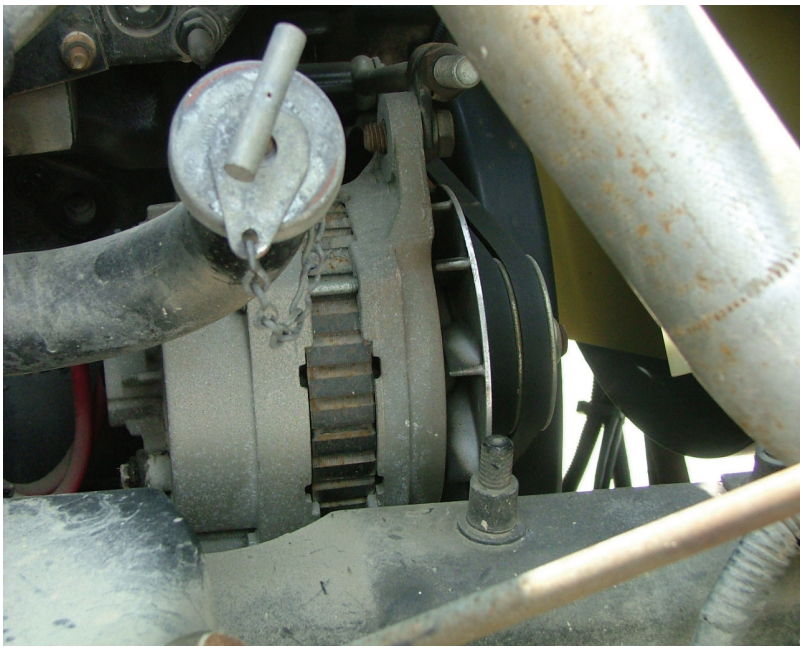

Figure 4-7 Dump truck alternator

a) Check the alternator and brackets for tightness

b) Check the electrical connections on the back of the alternator for

1) Tightness

2) Frayed wires

3) Corrosion

viii. Windshield washer fluid

a) Check the fluid level

b) Clean the cap and screen if applicable prior to adding fluid

ix. Air compressor

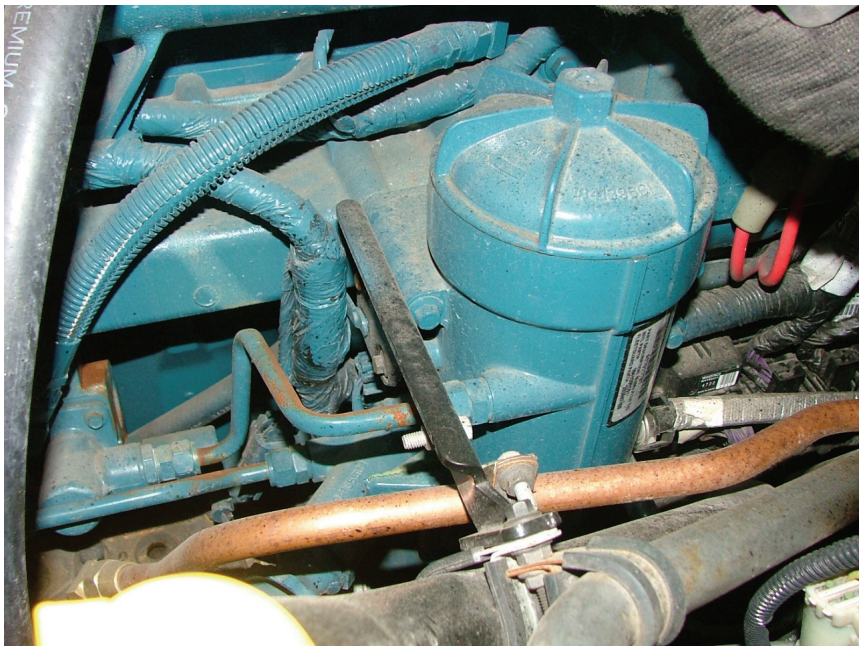

Figure 4-8 Dump truck air compressor

a) Check to see how the compressor is mounted to the engine

1) If it is belt driven, it is mounted on a bracket

(a) Check the tension and condition of the belt and the mounting bracket

2) If it is gear driven, it is mounted directly to the block

3) Check the air lines and fittings that run from the compressor to the air tanks for

(a) Leaks

(b) Cracks

(c) Wear

x. Leaks

a) Check the overall engine compartment for leaks of

1) Fluid

2) Air

3) Exhaust

xi. Slack adjusters

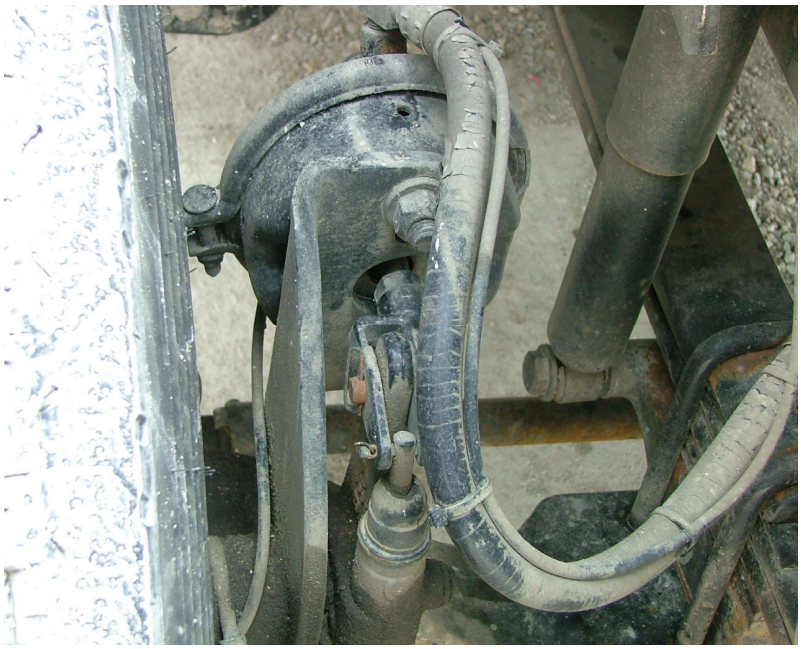

Figure 4-9 Dump truck front slack adjustor

a) While the hood is open, look at the front slack adjusters

b) Check the play in the adjusters by pulling them out by hand

c) The amount of travel should not exceed one inch

xii. Chambers

a) Check the condition of the front brake chambers

b) Look for dents or other damage that can cause the chambers to leak

c) Check to ensure that the chambers are securely mounted

xiii.Hoses

a) Check the hoses coming into the chambers for wear and cracks

b) Check the hose connections

xiv.Drums

Figure 4-10 Dump truck front brake drum

a) Look at the inside of the front wheels to check the brake drums

b) Check for cracks or other visible damage

xv. Spring leaves

a) Check the spring leaves for any cracked, bent, broken or missing leaves

xvi.Spring mounts/shackles

Figure 4-11 Spring mount at truck frame

a) Check the spring mounts connecting the springs to the truck frame

1) Look for loose or missing connector bolts

Figure 4-12 Truck spring shackle

b) Check the shackles that hold the spring leaves to the axle

c) Check the u-bolts and the nuts to make sure that they are tight and that none are missing

xvii. Shock absorbers

Figure 4-13 Truck shock absorber

a) Check the shock absorbers for leaks

1) If fluid is visible around the outside of the shock casing, this indicates a leak, and must be reported

b) Check the top and bottom of the shocks where they mount to ensure that the shocks are tight and the bolts are in place

xviii. Rims

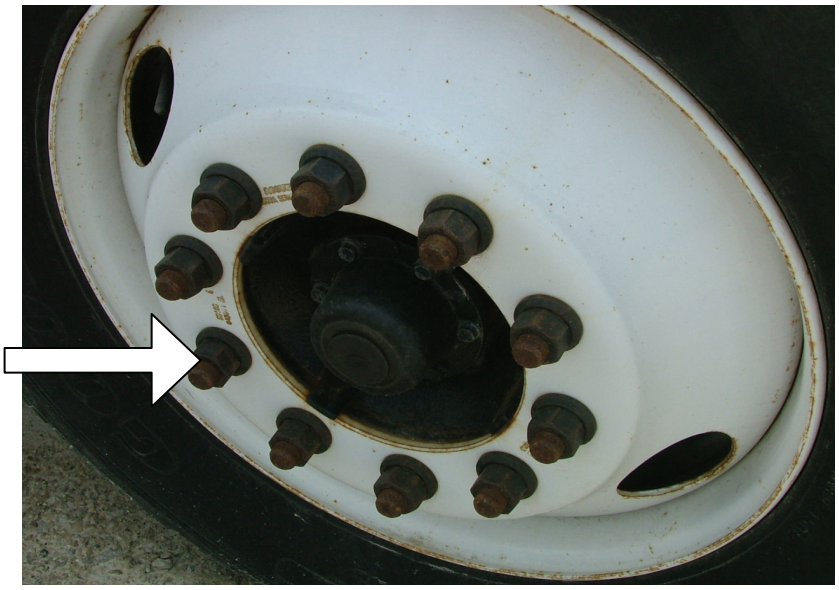

Figure 4-14 Truck front rim

a) Check the condition of the front rims

1) They should be free of rust, dents, cracks, and welds

xix.Hub oil seal

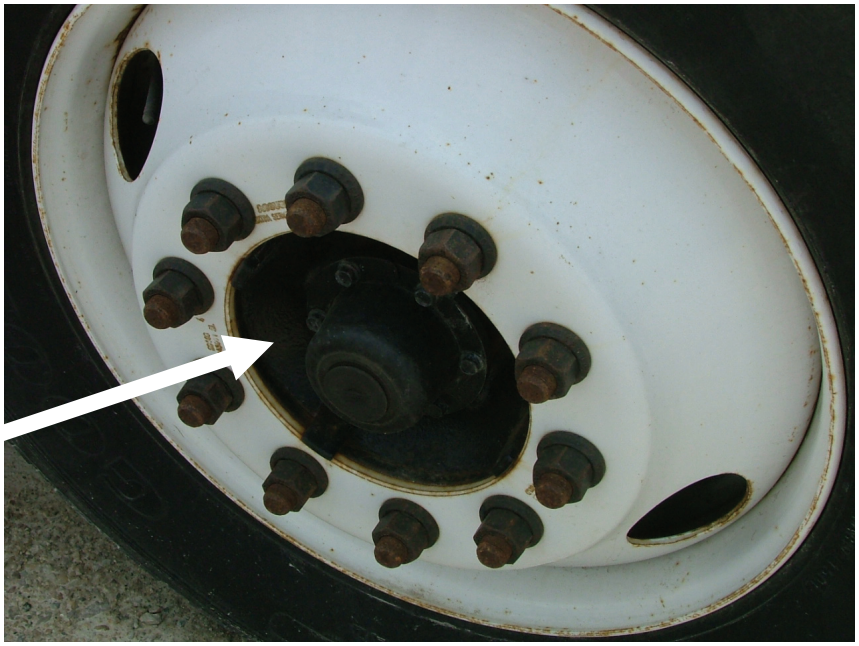

Figure 4-15 Truck front hub oil seal

a) Check the hub oil seal for leaks. The area around the seal should be dry and the seal should not be cracked.

b) If the seal is not clear, remove the seal and check the hub oil. The oil should be at or near the edge of the seal.

c) Replace the seal and make sure that it is secure

xx. Tires

a) Inspect the front tires for

1) Abrasions

2) Bulges

3) Cuts

b) Look for uneven tire wear and cupping

c) Check the tread depth of the front tires

1) They should have a minimum of 1/8 inch of depth left

d) Using a tire gauge, check the air pressure in the tires

1) Check the operator's manual for specific tire pressure recommendations

xxi. Valve stem and cap

a) Check the valve stem for leaks

b) Look for bent stems**,** broken stems, or stems that are being pinched by the rim

c) Check that the valve cap is on and that it is tight

xxii. Wheel fasteners (lug nuts)

a) Lug nuts must be secure

1) Look to see if there are rust streaks on the rim from the lug nuts

(a) This indicates that the nuts may have come loose

2) Check that approximately the same number of threads sticks out past the lug nuts from each lug stud. If there is a major difference, this indicates that one or more lug nuts have come loose.

    (a) This will not be exact on all of the studs, but it is a good indicator

3) If lug nuts need to be tightened, check with a mechanic

    (a) Often, they have a torque specification

xxiii. Steering components

a) While the hood is open, check all of the steering components, starting with

1) Steering shaft

    (a) Check that the shaft is connected to the steering box and that the universal joints in the shaft have been greased

2) Power steering pump

    (a) Check the pump and the lines coming from the power steering fluid reservoir for leaks

3) Pitman arm

    (a) Check to ensure that the pitman arm is attached to the bottom of the power steering pump and that it is not cracked or bent

4) Drag link

    (a) Check to ensure that the drag link is connected to the pitman arm and that the other end is connected to the steering knuckle

5) Tie rod ends

    (a) The tie rod ends must be connected to the drag link and the tie rods

6) Tie rods

(a) The tie rods are connected to the tie rod ends and run to both front wheels. Check that the tie rods are not bent or loose.

7) Ball joints

(a) Ball joints connect the tie rods and tie rod ends. The ball joints should not be loose but the tie rods should pivot on the ball joints.

b) Steering box

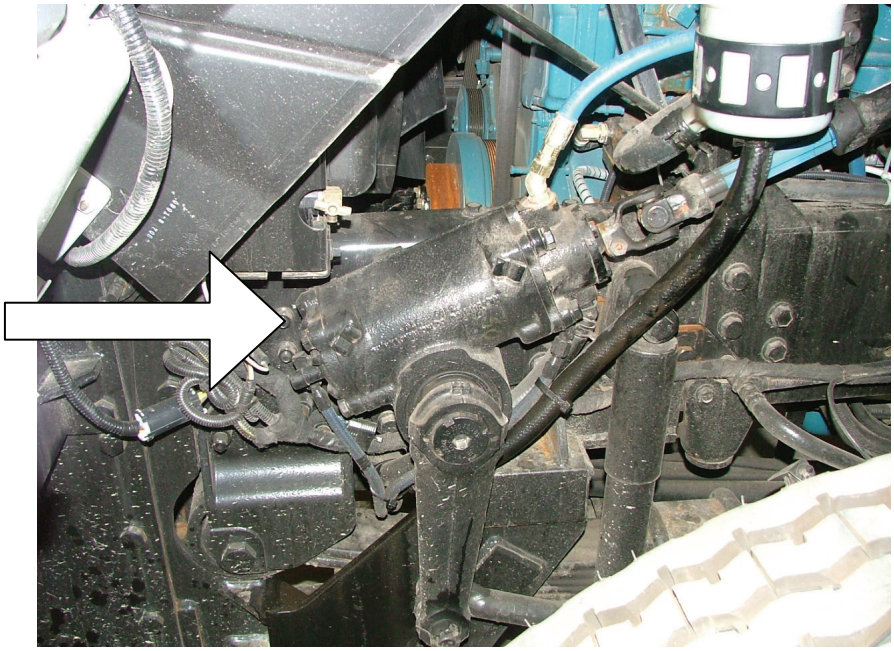

Figure 4-16 Truck power steering box

c) Pitman arm

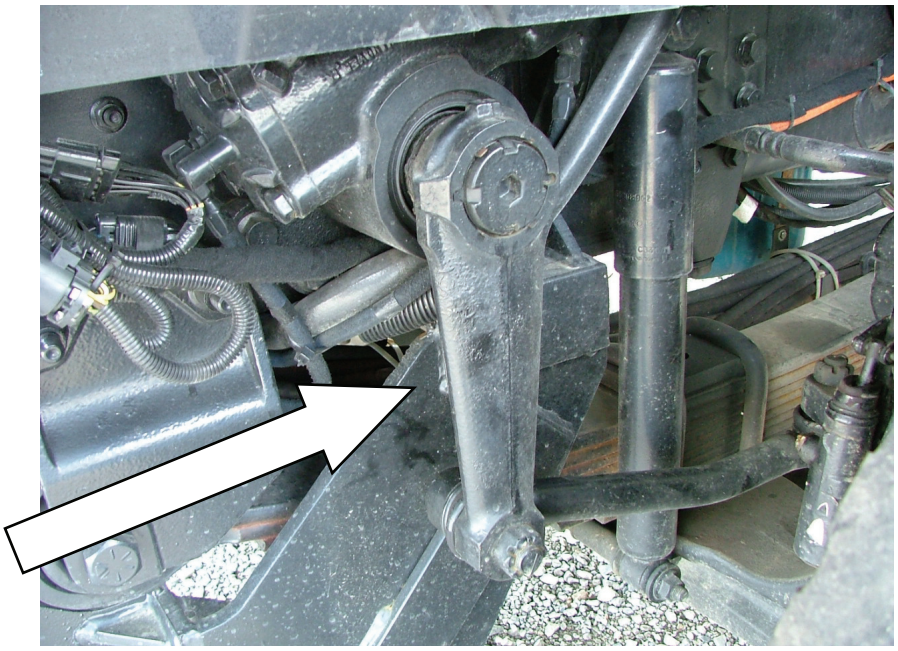

Figure 4-17 Pitman arm (steering component)

d) Drag link

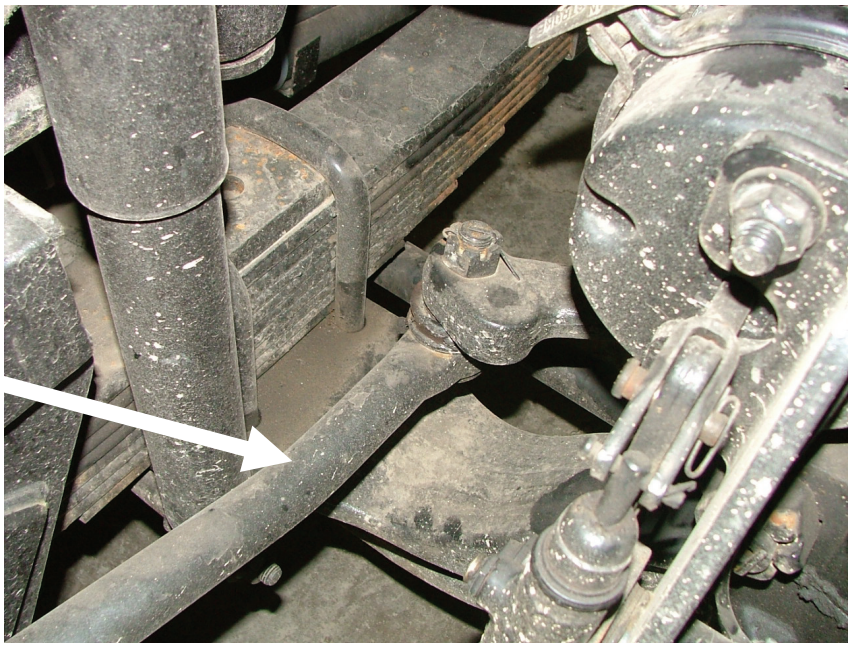

Figure 4-18 Drag link (steering component)

xxiv. Transmission fluid

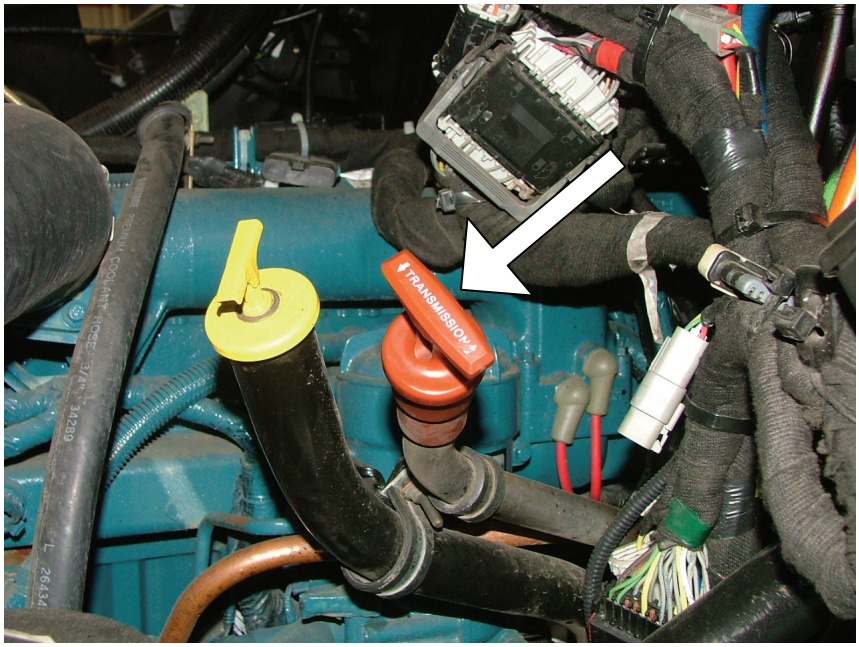

Figure 4-19 Truck automatic transmission fluid dip stick location

Figure 4-20 Transmission dipstick with fluid shown

a) Some equipment requires a cold check and some does not

    1) Refer to the operator's manual for specific instructions

    2) The transmission may have a dip stick or a sight glass

b) For a cold check, the same guidelines apply as to any oil

    1) Rub the fluid between two fingers to feel for grit or metal shavings (signs of internal engine problems)

        (a) With the fluid on the fingers, pull the fingers slightly apart and see if the fluid beads between them. If it does, the viscosity is most likely still good.

        (b) Replace the dipstick, and check the level one more time

            (1) NEVER overfill

c) Some equipment also has a breather screen on the side of the dipstick tube

    1) Clean this off when checking the fluid

d) For a hot check, bring the transmission up to operating temperature and then check the level

e) NEVER overfill

xxv. Hydraulic oil

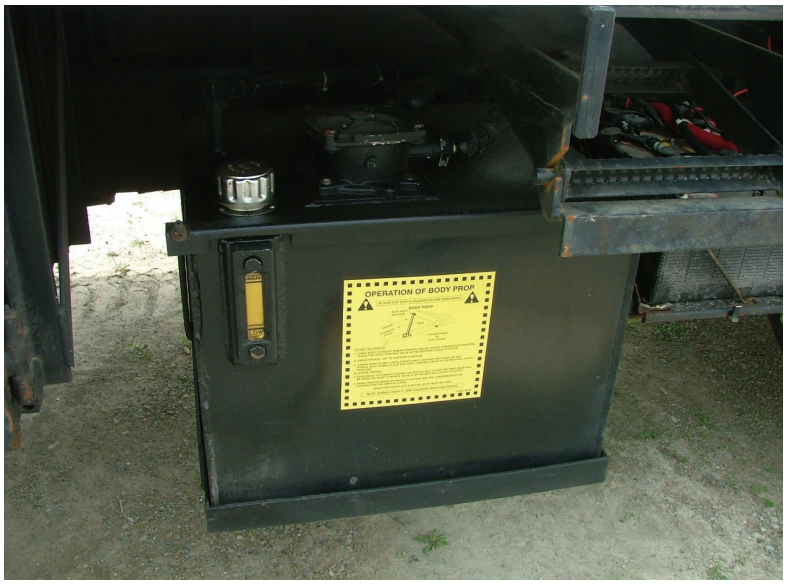

Figure 4-21 Hydraulic fluid tank with sight glass

a) Hydraulic oil can be checked in either the engine compartment or during the walk around back-of-truck sections of the pre-trip

b) Check the operator's manual

1) If the fluid needs to be checked while it is warm, then check it during the walk around inspection

c) Hydraulic oil is normally checked with a sight glass, most commonly located on the tank

1) The fluid should be light gold in color and should show in the middle of the sight glass

d) DO NOT overfill this oil

e) Hydraulic fluid should not contain water or appear foamy in the sight glass

b. Engine start up

i. Unusual noises

a) When an engine first starts and is warming up during normal use, listen for unusual noises

b) All of the gauges may show normal readings, but often, a problem is audible before it is visible

c) Listen for unusual noises in

1) The hydraulic system

2) The hum of the tires

3) The cab rattling

4) Anything that would signify trouble

ii. Air filter indicator

Figure 4-22 Air filter indicator located inside the truck cab

a) Before starting the engine, check the air filter indicator

1) If it reads yellow or red, notify the mechanic

2) Do not reset it

(a) The only time that the indicator should be reset is when the system is serviced

(b) Resetting gives a false reading and can cause engine damage

b) A majority of diesel engine damage can be attributed to the lack of proper maintenance to the air induction system

iii. Lighting indicators

a) Check all lighting indicators when first turning on the ignition

b) Turn all the lights on for walk around inspection

iv. Clutch/gearshift

a) Before starting the engine, depress the clutch fully, making sure to engage the neutral safety switch

b) Place the gear shift in neutral and release the clutch slowly once the engine has started

1) If starting a truck with an automatic transmission, place the gear selector in neutral to engage the safety switch

v. Oil pressure builds

a) Once the engine starts, check to make sure that the engine oil pressure builds to a normal range

b) If there is no oil pressure within three to five seconds of starting (seven to 10 seconds in cold weather), shut the engine off

vi. Air pressure gauges

a) With the engine running, the air pressure gauge(s) should begin to rise

b) If the gauges do not rise at all or are very slow, check the air tank(s) to make sure that the drain valves are closed

vii. Ampmeter/voltmeter

a) Look at the amp meter/voltmeter to ensure that

1) The alternator is charging

2) The electrical system is operating properly

viii. Brake check (air/hydraulic)

a) Air brakes

1) Test the air leakage rate – with a fully charged air system (typically 125 psi), turn off the engine

2) Turn the electrical power on

3) Release the service brake and time the pressure drop for one minute

(a) The air pressure should not drop more than 2 psi for single vehicles (3 psi for combination vehicles)

4) Apply the foot valve and keep it applied for one minute

(a) The air pressure should not drop more than 3 psi for single vehicles (4 psi for combination vehicles)

5) Test the low pressure warning signal – with the engine still off and the electrical system still on, use the foot valve, pump the brakes, and watch the pressure gauge

(a) At 60 psi, a visual warning must come on. It may also be accompanied by an audio signal, though the audio is not required.

6) Test to be sure that the spring brakes activate automatically – continue pumping the foot valve to reduce air pressure

(a) The "parking brake" knob should pop out when the pressure falls to the manufacturer's specification (usually between 20 and 40 psi)

7) Restart the engine and allow the air pressure to rebuild

b) Hydraulic brakes

1) With the engine off and the ignition off, depress and hold the foot pedal. An electric assist motor should be audible while the pedal is held down.

2) With the engine running

   (a) Pump the foot pedal three times and hold the pedal down

   (b) Wait for five seconds - pedal should not move during the five seconds

3) Check the brake fluid in the master cylinder

   (a) Be sure to wipe off the cap before removing it

   (b) Fluid should be clean and at operating level

   (c) Master cylinder may have two reservoirs

ix. Steering play

a) With the engine on, check the free play in the steering wheel

1) It should be no more than 2” in a 20” wheel - approximately 10% steering play

x. Parking brake

a) Check to be sure that the parking brake is set (valve out) before exiting the vehicle for the walk around inspection

xi. Mirrors/Windshield

Figure 4-23 Truck mirrors and brackets

a) Check the mirrors

1) Check the mirrors for proper adjustment and cleanliness

2) Check to be sure that the mirrors are not cracked, broken or missing

b) Check windshields

1) For cleanliness

2) For cracks, chips or leaks around the seals

xii. Wipers/washer fluid

a) Check the condition of the wipers to make sure that they are not broken and that the rubber is touching the glass

b) Turn on the wipers to make sure that they are working

c) Check to ensure that the washer fluid is working and that it directs fluid to the proper area of the windshield

xiii.Horns

a) Check the air and electric horns to make sure that they are working properly

xiv.Heater/defroster

a) Turn on the heater and move the controls through each setting

b) Also ensure that all vents open and that air flows freely

xv. Safety/emergency equipment

a) Check to ensure that all safety equipment is present and functional

b) Fire extinguisher should be securely mounted and inspected

1) Make sure that the safety mechanism is securely in place and that the extinguisher is ABC rated and fully charged

(a) An “A” rating is for trash, wood and paper

(b) A “B” rating is for liquids and grease

(c) A “C” rating is for electrical equipment

c) The first aid kit should be securely mounted and inventoried regularly

1) Replace individual items as needed

d) Reflective triangles should be stored in their own container and, if possible, stored in the truck bed tool box

1) Triangles must be clean and in good shape with all reflective tape in place for proper operation

e) Flares must be stored in a dry place in their own container

1) Check for moisture, age, and decay

f) Red flag sticks for emergency traffic control should be stored and secured

xvi. Doors/mirror brackets

a) When exiting the truck, check to ensure that the doors close properly and do not show damage

b) With the windows down, lock the doors and check that the doors lock properly and are secure

c) Check that the mirrors are

1) Securely mounted

2) Properly adjusted

3) Not cracked, bent or broken

xvii. State radio

a) Check that the radio is on and working

1) It must be able to send and receive

b) Check with the district for specific radio procedures

c. Walk around cab

i. Lights/high & low beams

a) Turn on the high and low beams to make sure that all headlights are working properly

b) Check them during the walk around

ii. Taillights

a) With the lights on, check the

1) Taillights

2) Turn signals

3) Emergency flashers

4) Brake lights

5) Back up lights (a second person is required to check these)

iii. Strobe lights and brackets

a) Check the strobe lights all the way around

b) Most trucks have front and rear strobes. Make sure that all lights are clean and securely mounted.

iv. Marker lights/reflectors

a) Continuing the walk around

1) Check and clean all marker lights and reflectors

(a) Check to be sure that none are missing or broken

d. Driver's fuel area

i. Fuel tank

a) Visually check the fuel level at the tank because the following may contribute to a false gauge reading

1) Weather

2) Salt

3) Calcium

4) Other factors

b) Look at the straps holding the tank in place

1) Check to be sure that the straps have not loosened or moved, and that the tank is tight

c) Replace the fuel cap and make sure that it is clean and tight

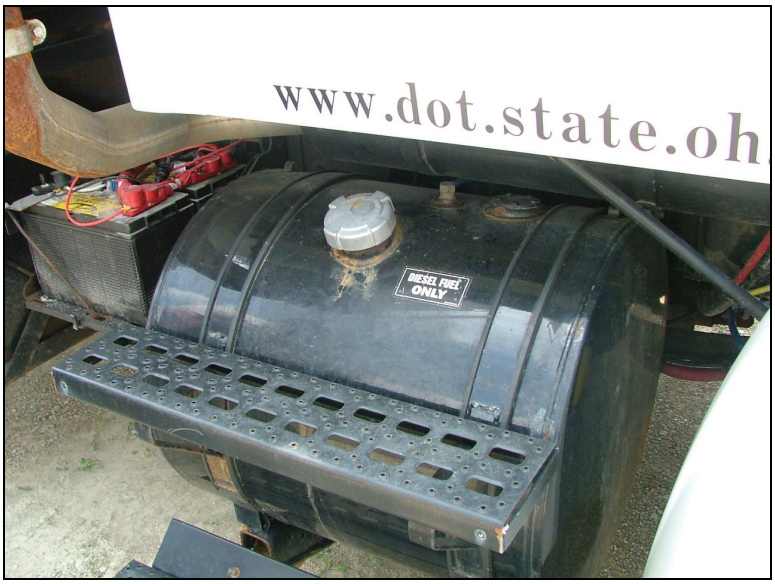

Figure 4-24 Truck fuel tank and steps

ii. Exhaust system

a) With the engine running, check the exhaust system for

1) Leaks

2) Holes

3) Rust

b) Check the mounting brackets to make sure that they are holding the exhaust system in place

c) Check the rain cap to make sure that water and other debris cannot get into the system when the engine is off

iii. Body

a) During the walk around, check the body for

1) Dents

2) Dings

3) New scratches

b) Check for any other problems that may have begun since the last time the loader was operated

c) If this is the first time operating the vehicle, document all damage found

iv. Mirrors

a) Check the mirrors once again for proper alignment, and to make sure that they are not cracked or broken

b) Ensure that the brackets are in place and are tight

v. Handrails

a) Make sure that the hand rails are not damaged and that they are tight

b) Check hand rails for cleanliness to ensure a good grip when entering and exiting the cab

e. Walk around rear wheels

Figure 4-25 Truck rear wheels and rims

i. Rims

a) Check the condition of the rear rims

1) They should be free of rust, dents, or cracks

2) They should have no welds

ii. Tires

a) The rear tires need to be inspected for

1) Abrasions

2) Bulges

3) Cuts

4) Uneven tire wear

5) Cupping

b) Check the tread depth of the rear tires. It should be a minimum of 1/16 inch.

c) Using a tire gauge, check the air pressure in the tires

1) Check the operator's manual for specific tire pressure recommendations

2) The two main causes of tire fires are dual tires that touch each other and under-inflation

iii. Valve cap/stem

a) Check the valve stem for

1) Leaks

2) Bent stems

3) Broken stems

4) Stems that are being pinched by the rim

b) Check to be sure that the valve cap is on and is tight

c) The valve stems on the rear tires should be 180 degrees apart, or exactly opposite each other

1) They must both be reachable from the outside rim

iv. Axle seals

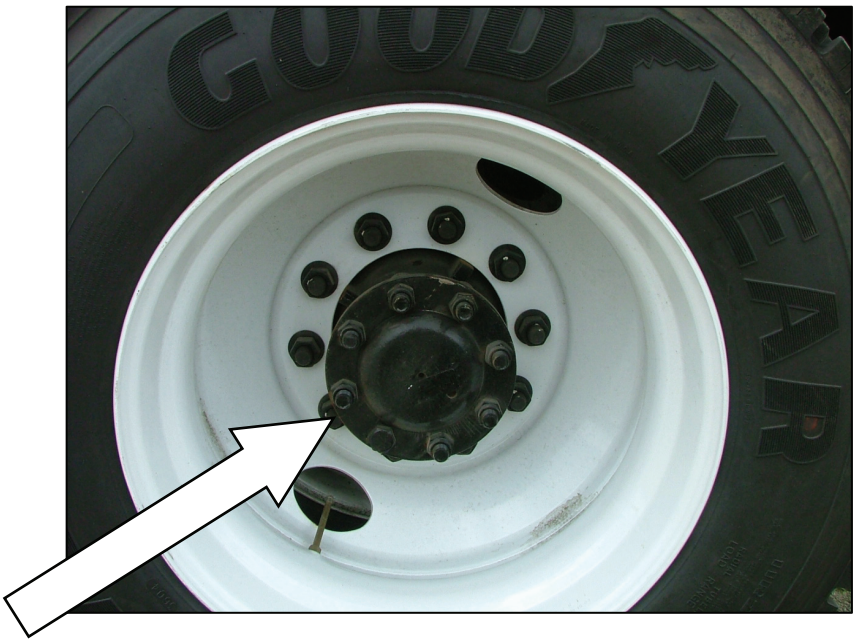

Figure 4-26 Truck rear wheel axle seal

a) Check the axle seals for leaks

1) The area around the seal should be dry and the seal should not be cracked

b) Check the bolts around the hub to make sure that they are tight

1) If there is a leak, it will most likely occur in this area

v. Wheel fasteners (lug nuts)

a) Lug nuts must be secure

b) Look for rust streaks on the rim from the lug nuts

1) Rust streaks indicate that the nuts may have come loose

c) Check to ensure that approximately the same number of threads stick out past the lug nuts from each lug stud. If there is a major difference, this indicates that one or more lug nuts have come loose.

1) This is not exact on all of the studs, but it is a good indicator

d) If lug nuts need to be tightened, check with a mechanic

1) Often, they have a torque specification

vi. Spacers

a) Check between the rims to see if a spacer is present

b) If the rims have spacers, ensure that

1) There is no debris between the tires

2) The spacers are not bent or rusted

3) Most of the newer trucks in the fleet have bud rims

(a) Bud rims are rims that are actually mounted to each other and do not have spacers

f. Rear suspension

i. Rear springs

Figure 4-27 Truck rear axle spring leaves

a) Check the springs or spring leaves for any cracked, bent, broken or missing springs

ii. Rear spring mounts

Figure 4-28 Truck rear spring mounts

Figure 4-29 Truck rear spring mounts

a) Check the spring mounts connecting the springs to the truck frame

1) Look for loose or missing connector bolts

iii. Torsion bars

a) A torsion bar takes the place of a shock absorber

1) One end is mounted below the spring to the front of the axle, and the other end is mounted to the frame

2) Torsion bars are flat and torsion rods are round, but both do the same thing

b) Check the torsion bars for

1) Cracks

2) Bends

c) Also check to ensure that the torsion bars are securely mounted

iv. Air bags

a) If the truck has an air ride suspension and contains air bags, check that the bags are completely inflated

b) The bags should have no visible damage and no audible air leakage

g. Rear brakes

i. Rear slack adjusters

a) When the parking brake is on, the slack adjuster cannot be pulled as it could on the front brakes. It is still possible to see that the adjuster is out, however.

b) Look to see how much of the rod is out - the travel should not be more than 1 inch

ii. Rear brake chambers

a) Check the condition of the rear brake chambers

b) Look for dents or other damage that can result in the chambers leaking

c) Visually check to be sure that the chambers are securely mounted

iii. Rear brake hoses

a) Check the hoses coming into the chambers for wear and cracks

b) Check the hose connections

iv. Rear brake drums

Figure 4-30 Truck rear brake drum

a) Look at the inside of the rear wheels to check the brake drums

1) Check for cracks or other visible damage

h. Under vehicle – rear of truck

i. Pintle hitch

a) A pintle hitch is used to attach a trailer to trucks or other commercial vehicles

Figure 4-31 Truck mounted pintle hitch

b) Check

1) The pintle hitch to make sure that it

(a) Opens and closes correctly

(b) Turns side to side with light pressure from a pry bar

(c) Is held in place by grade 8 bolts

(1) A grade 8 bolt has six evenly spaced marks on it

(d) That the locking mechanism

(1) Closes all the way

(2) Stays in place

(e) The spring and nut are also in place

i. Walk around passenger side

i. Drive shaft

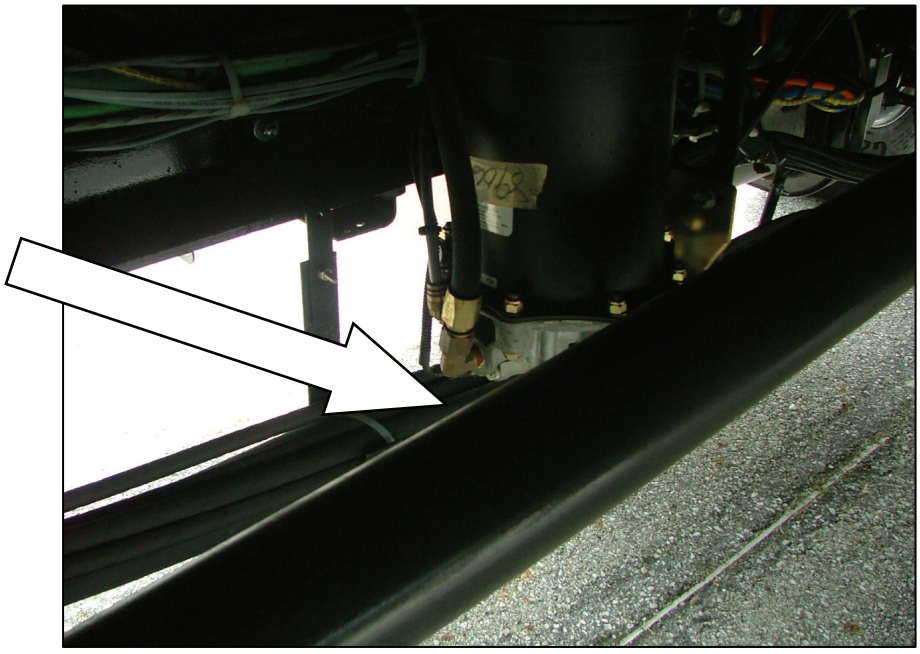

Figure 4-32 Truck mid frame drive shaft

Figure 4-33 Drive shaft universal joints

Figure 4-34 Drive shaft attaches to rear end

a) Check the drive shaft for any obvious damage such as

1) Breaks

2) Dents

3) Cuts

b) Visually check the universal joints and grease them as needed

ii. Frame

a) Check the frame for dents, twists, rust and other defects

b) Inspect the inside and outside of the frame on both sides of the entire length of the truck

iii. Batteries

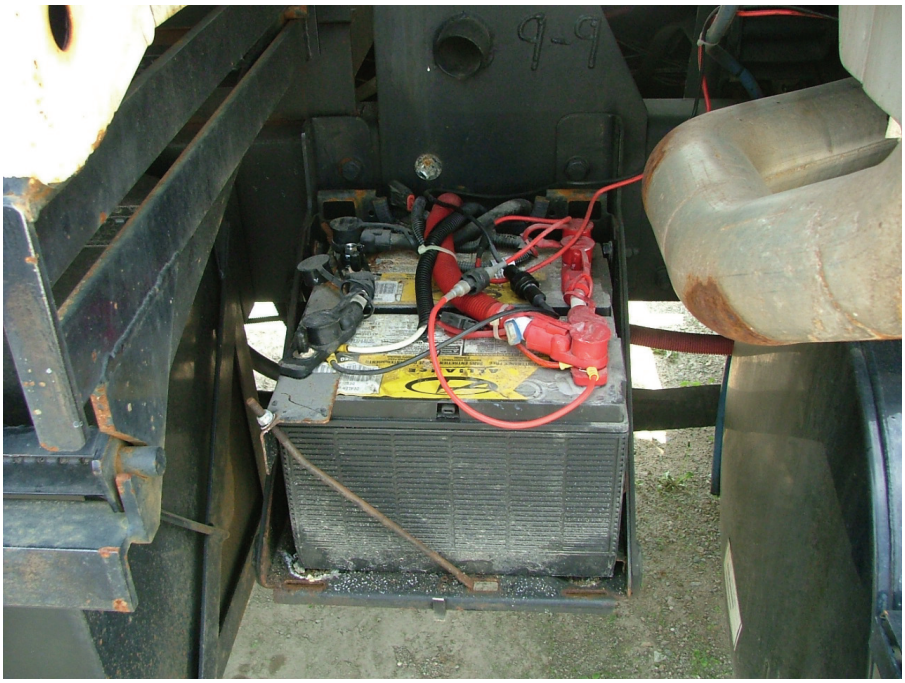

Figure 4-35 Truck battery box and batteries

a) Open the battery compartment and check the batteries. Most batteries are maintenance free so it is not necessary to check the electrolyte level.

    1) If the batteries are not maintenance free, remove the caps and look at each individual cell. The fluid level should be above the metal plates that are visible inside the battery.

    2) If the fluid is low, check with a mechanic for the proper fluid and replace as necessary

b) Check to be sure that the batteries are securely mounted and do not move around in their compartment

c) Check the condition of the battery terminals and look for corrosion or loose connections

d) Check the condition of the cables at the terminals and going out of the battery compartment

    1) Look for cables worn from corrosion or from rubbing

iv. Air dryer

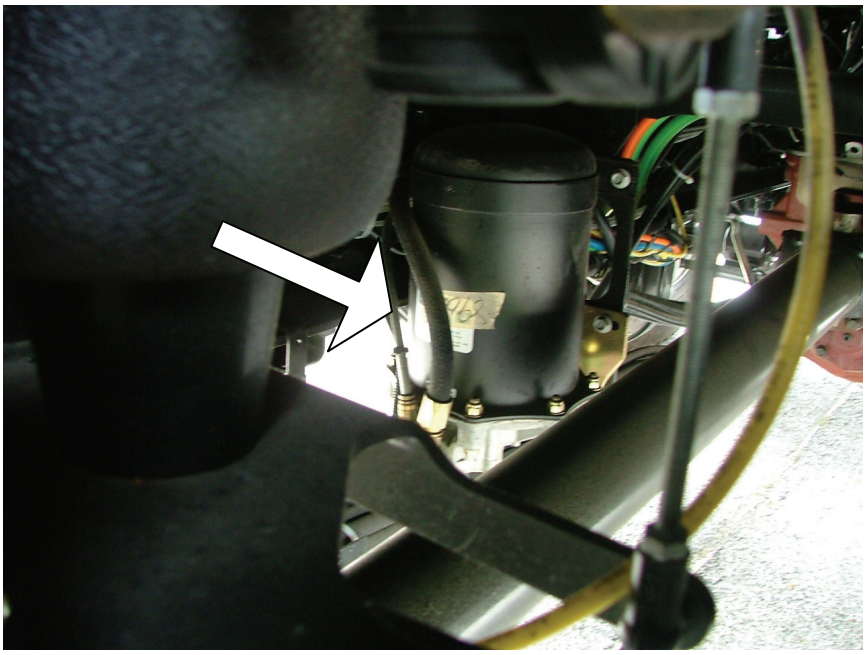

Figure 4-36 Air system automatic dryer

a) If the truck is equipped with an air dryer, it will cycle when the truck is running

b) It is located near the air storage tank

c) The job of the air dryer is to push out water and oil produced by the air compressor

d) Check and drain air tanks weekly, especially in the winter

    1) This helps to prevent condensation from building up

v. Rear end

Figure 4-37 Rear axle

a) Check the rear axle(s) as well as the rear of the vehicle for any leaks or damage

1) Look for loose bolts or fluid leakage

b) Look specifically at the center of the rear end where the drive shaft connects

1) Check the seal for leaks

vi. Tailgate hinge pins

a) If the truck has a tailgate attached, check the top corners of the gate at the pins that hold the gate to the bed to make sure that the pins are seated all the way in and that the pins have some sort of locking mechanism attached

vii. Tailgate latch

a) Look at the bottom corners of the tailgate at the latch system

1) It is either a mechanical system or an air latch system

2) Check to be sure that the latch is in working order by activating the latch system and ensuring that

(a) The tailgate latch pins seat all the way in

(b) The latch mechanism holds the gate in place

(c) There is no gap between the gate and the bed that allows material to leak out

viii. Bed and sub frame

a) Look for dents, scrapes or other signs of damage in the bed

b) Check inside the bed to make certain that it is either empty or that the proper material is loaded onto it

c) With the bed up in the air and the hydraulic lock in place

1) Check the sub frame of the bed for rust or damage

d) Check to ensure that all bed pins and securement devices are in place

ix. Lights/reflectors

a) Check the bed lights and reflectors, especially those under the tailgate, for cracked, broken, or missing lenses, and lights that are not working properly

x. Hydraulic oil

a) Normally, this is checked with a sight glass located on the tank

1) The fluid should be light gold in color and in the middle of the sight glass

b) DO NOT overfill this oil

c) Hydraulic oil should not have water in it or look foamy in the sight glass

xi. Mud flaps

a) Both mud flaps should be in place

b) Check to be sure that they are not ripped or torn and that they are still functional

c) Make sure that they are clean and that they will not drop any debris on the road

j. Plow

i. Hydraulic lines

a) Check the hydraulic lines running from the truck to the plow for wear or leaks

b) Check the hydraulic pump in the front of the truck for leaks

c) Check the drive shaft at the rear of the hydraulic pump to make sure it has been greased

d) Check the connections on the end of the lines to ensure that they are tight

e) Check to be sure that the hoses do not rub or get pinched during normal operation

ii. Frame

a) When checking the plow frame for damage, look for

1) A bent frame

2) Cracks

3) Proper lubrication

b) Check to ensure that the plow is correctly hooked up and that when the plow is all the way up, the frame is not put into a bind

c) Check that the handle on the Quick Couple Push (QCP) system is all the way down in the locked position

iii. Blade

a) Check the condition of the plow blade

1) Look for

(a) Wear

(b) Cracks

(c) Missing pieces

(d) Missing or loose plow bolts

2) If the area between the bottom of the plow blade and the plow moldboard is less than two fingers wide, it should be replaced

iv. Shoes

a) Check the bolts holding the shoes on to make sure that they are tight

v. Lights

a) Check the plow lights in both the high and low beam position

b) Check the angle of the plow lights

vi. Snow deflector

a) Make sure that the snow deflector is in one piece and that it extends the length of the plow

b) Check to ensure that all of the deflector's bolts are in place

k. On the move

i. Seat belt

a) Check the seat belt for frays, nicks, cuts, and a working latch mechanism

b) Check for proper adjustment of the lap belt

c) If the seat belt is broken or unserviceable, the truck should be red tagged and should not be operated

ii. Steering

a) Move the truck forward and backward to check the steering

b) Drive around the yard or another controlled area to make sure that the steering is working properly prior to going out on the road

iii. Parking brake

a) With the parking brake set, place the transmission in first gear and pull ahead slowly

1) The parking brake should hold

b) Perform the same maneuver with the transmission in reverse

1) While the transmission is in reverse, listen for the backup alarm

iv. Service brake check

a) With the transmission in gear, pull forward and test the service brake

b) Perform the same maneuver in reverse

c) If pulling a trailer, use the hand valve to make sure that the trailer brakes activate and are properly adjusted

v. Clutch/transmission

a) Check the free play in the clutch

1) It should be no more than 1 inch to 1 ½ inches

b) For automatic transmissions

1) Make sure that the selector holds in the gear selected and wait to feel the transmission go into gear

2) If the truck has a push button automatic transmission, be sure to select the neutral gear first when changing directions

(a) This gives the transmission time to reset in between gears

vi. Backup alarm

a) Check alarm