COMMERCIAL VEHICLE SAFETY INSPECTION

A

TRANSPORTATION TECHNICIAN

HIGHWAY DIVISION

SELF-STUDY

TRAINING

AND

PROFESSIONAL DEVELOPMENT

PROGRAM

Flesch-Kincaid grade reading level 9.5

PREFACE

Welcome to the **Vehicle Inspection** self-paced learning program. Congratulations on your efforts to expand your field of knowledge and learn new, or enhance existing, skills in the truck maintenance inspection industry.

During your self-study you will learn who can make and certify vehicle inspectors and vehicle inspections. You will learn why vehicle inspections must be conducted, what must at a minimum be covered and what must be included in an inspection record or document. You will learn when the DOT safety inspection must be completed on commercial vehicles. You will learn how to determine and set-up an inspection program that will meet the vehicle operator's, maintenance provider, and Federal Department of Transportation requirements.

You will learn that inspecting and repairing the vehicle may best be managed as two separate functions. Conducting an inspection should be the first action taken when you are assigned a work or repair order. When the issued work order is for the repair of a specific sub-system you will want to know exactly what the real problem is and you will want to know where the malfunction is occurring. This way you can ensure that all related systems and parts are in a "return to service" condition upon the completion of your work.

This common sense approach to inspection and maintenance is something you probably do already to ensure the quality of your work and prevent rework. When conducted in this common sense manner the inspection activity becomes secondary to the actual repair you or your peers will later perform on the vehicle.

During this self-study you will learn to focus exclusively and in detail on the inspection activity itself. Any service or repair required should be noted but completed at the end of the safety inspection. You or another maintenance technician or mechanic may perform the work.

You will learn that a quality inspection supports a cost effective and comprehensive vehicle maintenance program. You will learn about the advantages and disadvantages of a variety of maintenance programs, which the maintenance provider may choose to conduct in concert with the required DOT safety inspection program.

Additional systems and items may be included as a part of the safety inspection at the discretion of the vehicle operator or maintenance provider. Additional items may be inspected or serviced for a variety of fleet management reasons. The inspection of additional items can improve the cost effectiveness of the operator's maintenance program and save time for the vehicle operator's maintenance provider.

Throughout this program we will focus your attention primarily on the items, components and systems that contribute to the safe operation of the commercial vehicle.

For the period of training a resource person we suggest you make contact with an experienced professional commercial vehicle inspector and ask if you can contact him should you have questions about this learning guide or the vehicle systems you will be inspecting.

Name: _____ Phone: _____ E-mail: _____

FORWARD

Department of Transportation Federal Motor Carrier Safety Regulations Part 396 requires every commercial motor vehicle presently classified as “in-service” to be inspected periodically. Effectively, DOT regulations require the inspection of all systems on commercial vehicles which contributes to its continuous safe operation. In other words a vehicle operator can not use the vehicle unless each identified component has passed a safety inspection during the preceding 12-month period unless otherwise approved by the DOT. This also means that a complete vehicle “safety” inspection will have to be performed before the operator can put the vehicle into commercial service. The term “periodic” is defined by DOT as “…at least once during the preceding 12-months.” There are no exceptions.

If you do not have a copy of Federal Motor Carrier Safety Regulations Parts 40, 382,383, 390-397 (one volume) from U. S. Department of Transportation Federal Highway Administration stop now and locate or order a copy. Your assignment is to read Part 396 - INSPECTION, REPAIR AND MAINTENANCE before proceeding with your self-study. If you have reviewed this document within the past six months go ahead with your self-study program. DOT Address: DOT 400 Seventh St., SW, Room 2200, Washington, DC 20590.

The following vehicle systems must be inspected periodically. All items must be inspected in accordance with the minimum requirements of DOT Safety Regulations.

1. *Brake System*
2. *Coupling Devices*
3. *Exhaust System*
4. *Fuel System*
5. *Lighting Devices*
6. *Safe Loading Devices*
7. *Steering Mechanism*
8. *Suspension*
9. *Frame*
10. *Tires*
11. *Wheels and Rims*
12. *Windshield Glazing*
13. *Windshield Wipers*
14. *Safety and Emergency Equipment*

Continued from preceding page

Additional DOT requirements include the completion, by the qualified safety inspector of adequate documentation of the inspection detail performed on each commercial vehicle. However, other inspection programs may be used to achieve the same DOT safety requirement. The safety inspection program selected by the vehicle operator or maintenance provider may somewhat dictate the design of the entire maintenance program.

Some operators use a “periodic maintenance” program. Many operators use the “preventive maintenance” program; some use a “progressive maintenance” program, but many operators still use the “break down maintenance” program. We will generally define these various program terms later and discuss how they relate to a particular vehicle inspection program.

Regardless of the inspection or maintenance program used DOT requires specific documentation of the actual hand on inspection. Vehicle inspection documentation requires that the following information be included as a part of the inspection records keeping requirement. The vehicle operator or maintenance provider may add other requirements for a variety of reasons. The “qualified” vehicle safety inspector who performs the inspection shall complete a report that will identify and include at least the following information.

1. *The name of the individual performing the inspection*
2. *The name of the motor carrier operating the vehicle*
3. *The date of the inspection*
4. *The vehicle’s identification number*
5. *The vehicle components or systems inspected*
6. *The safety inspector shall certify the accuracy and completeness of the inspection*

The original or a copy of the inspection report has to be retained by the vehicle operator or maintenance provider for a period of fourteen months from the date of the inspection.

The other copy of the report has to be retained where the vehicle is either domiciled (parked) or maintained.

A copy has to be made available for inspection upon the demand of any authorized Federal, State or local DOT official.

PRETEST

Commercial Motor Carrier Vehicle Safety Inspector

Knowledge Assessment

We believe that there is no need for you to devote time to learning skills you are already capable of performing at a return-to-service level. Therefore it is to your advantage to sort out what you know from what you need to learn about performing commercial vehicle safety inspections.

To help you determine your knowledge level and identify skills you will need to learn complete the following pretest and then concentrate your attention and effort on those questions you answer incorrectly. Good Luck!

1. Which of the following commercial motor vehicle systems must be inspected at a minimum during a DOT approved safety inspection?

    a. Brakes, Suspension, Windshield Wipers and Loading Devices
    b. Safety and Emergency Equipment
    c. Frames, Wheels and Rims
    d. All of the above

2. In order for an individual to become a DOT “qualified” commercial motor vehicle safety inspector he/she can verify the following requirements?

    a. The completion of a State or Federal sponsored training program.
    b. Have worked in any capacity for a national transportation company.
    c. Have worked for a State Automobile Inspection Department station.
    d. Have attended a State or Federal sponsored training program.

3. When a commercial motor carrier operator puts a new motor vehicle into service how many months can the vehicle be operated before the first periodic safety inspection is required by DOT Safety Regulations?

    a. Twelve months.
    b. Three months.
    c. Zero months.
    d. One month.

4. What basic identification information is required to be included in the DOT compliant commercial motor vehicle safety inspection report?

   a. The name of the vehicle driver.
   b. The name of the carrier operating the vehicle.
   c. The make and model of the vehicle.
   d. A list of systems not inspected.

5. How many sets of the vehicle safety inspection report have to be made?

   a. Nine (an original and eight copies)
   b. Three (an original and two copies)
   c. Two (an original and one copy)
   d. One (an original and no copies)

6. What is the primary objective and purpose of commercial motor vehicle safety inspections?

   a. To reduce vehicle maintenance.
   b. To extend the life of the vehicle.
   c. To provide DOT with information about the vehicle.
   d. To ensure public safety.

7. What DOT Part of the Safety Regulations can one locate the requirements for items to be included in a DOT compliant safety inspection on commercial motor vehicles?

   a. DOT Safety Regulation Section 396.
   b. DOT Safety Regulation Section 393.
   c. DOT Safety Regulation Section 394.
   d. DOT Safety Regulation Section 395.

8. Does DOT have safety regulations that apply to specific systems on a commercial motor vehicle?

   a. Yes.
   b. No.
   c. Under some circumstances.
   d. Only when it is a Class 8 vehicle.

9. What is the minimum height from the road surface that a truck trailer rear side marker light must be located?

   a. Thirty-six inches.
   b. Twelve inches.
   c. Fifteen inches.
   d. No requirement.

10. The commercial motor vehicle emergency brake system must be separate from the service brake system.

   a. True
   b. False

11. Some cracks are allowed in windshields of commercial motor vehicles. What are the two exceptions?

   a. Any crack not directly in the forward line of sight of the driver.
   b. Any crack not more than three-quarters of an inch, if closer than three inches to any other such damaged area.
   c. Any crack not more than three-quarters of an inch, if not intersected by another crack.
   d. No cracks are allowed in commercial motor vehicle windshields.

12. Commercial motor vehicle fuel tank drain fittings or plugs must not extend more than how many inches below the bottom lowest point of the tank(s)?

   a. Zero inches.
   b. One-half inch.
   c. One full inch.
   d. Three-quarters inch.

13. How must visible fuel tanks on commercial motor vehicle be marked or labeled?

   a. Certificate that the fuel tank conforms to DOT rules.
   b. Plainly marked with its liquid capacity.
   c. Manufacturers name if built before 6/1/88.
   d. a, and b above.

14. Commercial motor vehicles must be equipped with a seat belt assembly, and one left side rear view mirror.

    a. True
    b. False

15. Which of the following emergency equipment items does DOT Safety Regulations not require to be aboard and properly working on commercial motor vehicles?

    a. One or more fire extinguishers depending on the type of operation.
    b. At least one spare fuse for each type installed on the vehicle.
    c. Two fire extinguishers are required on all commercial motor vehicles.
    d. Warning devices (Flares, reflector triangles, flags or lights)

16. When mounting a fifth wheel bottom half to the commercial motor vehicle one DOT accepted method is to drill holes in the top rail flange and install high strength bolts, washers and lock nuts to 90 foot pounds of torque.

    a. True
    b. False

17. An air system leak must not be greater than 3 PSI (Pounds per Square Inch) in a 5-minute time period when the commercial motor vehicles air pressure gauge shows normal operating pressure.

    a. True
    b. False

18. DOT Safety Regulations require drivers of commercial motor vehicles to complete a DVIR on either a trip or daily basis. What items are not required at a minimum to be covered on the DVIR?

    a. Air Conditioning and Heating System.
    b. Horn system
    c. Rear view mirrors
    d. Coupling system

19. What is not cause for rejection of a commercial motor vehicle during a safety inspection?

    a. Any out of date DOT required safety item.
    b. Any inoperable DOT required safety item.
    c. Any dirty or oily DOT required safety item.
    d. Any missing DOT required safety item.

20. On wedge brakes air chamber sizes and slack adjuster lengths should, but do not have to, match in order to comply with DOT Safety Regulations.

    a. True
    b. False

21. On parking brakes what is meant by “flexural cracks”? When and where are flexural cracks permitted by DOT Safety Regulations?

    a. Flexural cracks are cracks that open when the part flexes under stress. Flexural cracks are not permitted on service brakes.
    b. Flexural or hairline cracks open when flexed under stress. Both flexural and hairline crack are never permitted on any brake system.
    c. Flexural or hairline cracks open when flexed under stress. Neither flexural or hairline cracks are never permitted on parking brakes
    d. Flexural cracks are cracks that open when the part flexes under stress. Flexural cracks are not permitted on parking brakes.

22. On hydraulic brakes the master cylinder must be highlighted during a safety inspection to add fluid when it is observed to be less than one quarter of an inch low.

    a. True
    b. False

23. What should the safety inspector do if it is found that the hydraulic brake master cylinder on a commercial motor vehicle is less than half full during a safety inspection?

    a. Add fluid immediately
    b. Check for water in system
    c. Nothing as long as it is at least ¼ full
    d. Check for fluid evaporation

24. If during a safety inspection the inspector observes a hydraulic brake hose or line swelling during brake application he/she should write up the condition and recommend the maintenance technician makes a splice using stainless steel clamps and a short length of copper tubing with the same OD (Outside Diameter) as the system ID (Inside Diameter).

    a. True
    b. False

25. On fifth wheels DOT Safety Regulations permit horizontal movement between the pivot bracket pin and the bracket of no more than one half inch.

    a. True
    b. False

26. On trailer axle sliders DOT Safety Regulations permit movement of not more than 3/8 of an inch (0.375 inch) between the slider bracket and the slider base.

    a. True
    b. False

27. When the safety inspector finds a small crack in the vehicle's coupling device pintle hook he/she should write up the condition and recommend to the maintenance technician that he/she should have the cracked pintle hook welded before it goes back into service.

    a. True
    b. False

28. When the inspector observes during a safety inspection that there is only one coupling device safety chain attached to the centerline of the commercial motor vehicle he/she should take what action?

    a. No action should be taken because a single chain/cable coupling safety device arrangement can be installed if it is sufficiently strong.
    b. Fail the vehicle because only one chain/cable is installed and two are required on all commercial vehicles.
    c. Immediately notify the owner/operator of the condition and finish the safety inspection when they have installed two chains/cables.
    d. Write up the safety violation and recommend corrective action to the maintenance department.

29. No part of the exhaust system of any commercial motor vehicle can be so located as would be likely to result in burning, charring, or damage to the electrical wiring, the fuel supply, or any combustible part of the vehicle.

    a. True
    b. False

30. Steering wheel free play on all commercial motor vehicles must be within two inches.

    a. True
    b. False

31. Steering mechanisms on commercial motor vehicles with more than one fourth of an inch of motion other than rotation in any linkage is cause for rejection by the safety inspector.

    a. True
    b. False

32. Tires on the steering axle of a commercial motor vehicle with less than four thirty seconds of an inch when measured at any point on a major tread groove is cause for rejection during a safety inspection.

    a. True
    b. False

33. Re-grooved tires are never acceptable on commercial motor vehicles except they may be used in urban or suburban service.

    a. True
    b. False

34. It is alright to use mixed bias and radial tires on the same axle on commercial motor vehicles during urban cool weather operations.

    a. True
    b. False

35. The windshields of commercial motor vehicles must be replaced or repaired if a crack is one eighths of an inch in size.

    a. True
    b. False

36. What are five findings with emergency equipment that will require rejection of a commercial motor vehicle during a DOT safety inspection?

    a. No or insufficient equipment, inoperable equipment, missing clearance lights, loose rear view mirrors and worn mud flaps.
    b. No or insufficient equipment, inoperable equipment, missing clearance lights, dirty rear view mirrors and missing mud flaps.
    c. No or insufficient equipment, inoperable equipment, missing clearance lights, loose rear view mirrors and missing mud flaps.
    d. No or insufficient equipment, inoperable equipment, dim clearance lights, loose rear view mirrors and missing mud flaps.

37. The safety inspector can get organized to provide high quality and cost effective inspection services to his/her commercial motor vehicle operator client by doing the following?

    a. Develop a Safety Inspection Action Plan
    b. Make and use a Safety Inspection Check Sheet
    c. Hiring assistants to do the safety inspection report paperwork.
    d. a, and b above.

38. Following are 10 commercial motor vehicle systems that the safety inspector can concentrate on individually in order to be more concise and complete during a periodic inspection. Is it more effective to concentrate on the whole vehicle or each system during a safety inspection?

    - Cab compartment
    - Walk around lighting
    - Battery compartment
    - Powerplant compartment
    - Engine tune-up status
    - Wheel/Tire assemblies
    - Brake Assemblies
    - Chassis
    - Alignment
    - Lube/Oil check

    a. It is more effective to concentrate on the whole vehicle.
    b. It is more effective to concentrate on each system.

39. Why would the safety inspector make a decision to conduct a cab compartment inspection immediately after he/she has driven the motor vehicle into the safety inspection bay?

    a. He/She is already in the cab, why waste time getting back into the cab later.
    b. The most important items on a safety inspection are located in the cab.
    c. All the systems have to be checked from the cab first like lights, horn, a/c and heating, mirrors, windshield wipers, etc.
    d. a, and b above.

40. Could the safety inspector conduct a “walk around” inspection during a DOT safety inspection of a commercial motor vehicle?

    a. Yes
    b. No

41. What would the safety inspector be looking for in the commercial motor vehicle battery compartment?

    a. Loose battery post clamps.
    b. Corrosion and cable insulation cuts and rubs.
    c. Overall battery condition.
    d. All of the above

42. During a safety inspection of a commercial motor vehicle that is used to tow cargo trailers the maximum tracking limit between the towing and towed vehicles in a straight line is two inches.

    a. True
    b. False

43. If no discernable tire wear is observable on a commercial motor vehicle front axle tires during a safety inspection a toe-in \ tow-out check is not needed.

    a. True
    b. False

44. During a DOT Safety Regulations mandated inspection more items can be inspected and serviced than DOT requires but not less than those listed in DOT Safety Regulations 396.

    a. True
    b. False

45. Additional inspection items may be included during the safety inspection of a commercial motor vehicle. List at least ten items that would contribute to the extension of service and maintenance intervals of commercial motor vehicles.

    a. Transmission mounts, engine mounts, engine vibration damper.
    b. Engine oil leaks, transmission fluid leaks, power steering fluid leaks.
    c. Parking brake operation, axles and differentials, drive shafts, U-joints, slip yokes, springs and spring bolts, spring shackles, spring hangers, chassis to cab mounting, exhaust system mounting, exhaust system condition, steering system and kingpin ball joint wear.
    d. All of the above

46. The astute safety inspector should look for, feel for, and listen to the noises the vehicle makes when he/she conducts a road test of a commercial motor vehicle they have just finished inspecting but is this a good safety inspection practice?

    a. Yes
    b. No

47. Do you have a copy of the DOT Safety Regulation handbook?

    a. Yes
    b. No

48. Where and how would you locate the address of a source for ordering a DOT Safety Regulation handbook?

    a. In this self-study training guide
    b. In the DOT Safety Regulations
    c. In the vehicle manufacturer's operator guide
    d. a and b above

49. Describe how DOT defines an "in-service" and an "out-of-service" commercial motor vehicle.

    a. "In-service" is any commercial motor vehicle that has successfully passed the DOT Safety Regulations safety inspection requirement.
    b. "out-of-service" is any vehicle which by reason of its mechanical condition or loading condition would likely cause an accident or a breakdown.
    c. "in-service" is any vehicle that is used to haul freight for hire and "out-of-service" is any commercial motor vehicle that has been overloaded.
    d. a, and b above.

50. What is the DOT's definition of a "periodic inspection"?

    a. A commercial motor vehicle that receives a safety inspection periodically.
    b. A commercial motor vehicle that has received a safety inspection within the past 12 months.
    c. Any vehicle that has bee inspected during a 12-month period.
    d. a, and c above.

OBJECTIVE AND PURPOSE

What is the major objective for conducting inspections on commercial motor vehicles?

1. *Safety*
2. *Financial savings*
3. *Time savings*
4. *Control*
5. *Federal DOT requirement*

(All of the above, however safety is the most important consideration and the primary purpose for inspecting all commercial motor vehicles that operate on our public highway system.)

What are some of the different types of inspections that drivers and maintenance technicians conduct on commercial motor vehicles?

1. *Driver Inspections*
   a. *Pre-trip*
   b. *On-the-road*
   c. *Post-trip*
   d. *DVIR (Driver Vehicle Inspection Report)*

2. *Maintenance Technician Inspections*
   a. *Periodic*
   b. *Preventive*
   c. *Progressive*
   d. *Breakdown*

(Drivers: All. Maintenance Technicians: One depending upon the maintenance program of the vehicle operator or maintenance provider.)

What do you consider to be the purpose for conducting a viable inspection and maintenance program? What do you think is the purpose for conducting a complete safety inspection once every 12 months?

(The purpose is to maximize vehicle in-service time and minimize out-of-service time; reduce return to shop trips [rework]; minimize service; maintenance and repair time; and reduce road call time with its related logistic problems and cost. In-service is any commercial motor vehicle that has successfully passed the DOT Safety Regulations safety inspection requirements. Out-of-service is any vehicle, which by reason of its mechanical condition or loading condition would likely cause an accident or a breakdown.)

SELECT A PROGRAM

All vehicle inspection and maintenance programs must have as an outcome full and complete compliance with all minimum requirements of DOT Regulation Part 396 and related Parts. Additional items can be included as a part of the safety inspection.

INSPECTION AND MAINTENANCE PROGRAM REQUIREMENTS

1. *Each commercial vehicle declared to be "in-service" must be inspected according with DOT Regulation Part 396.17 prior to being put into commercial service.*
2. *DOT requires that all the items listed in Regulation Part 396 Appendix G be inspected, properly recorded and certified by a "qualified safety inspector."*
3. *DOT requires that each regulated vehicle must be inspected prior to being put into service and thereafter within each 12-month period following the date the vehicle was put into service.*

INSPECTION AND MAINTENANCE PROGRAM VARIATION

All vehicle inspection programs must comply with DOT Regulations Part 396, related Parts and appropriate Appendices.

1. *Periodic Safety Inspection / Periodic Maintenance Program*

    a. *Must inspect entire vehicle prior to putting it into service.*
    b. *Must periodically inspect portions of the vehicle during each of the following 12-months.*
    c. *Must have completed inspection of all DOT 396 listed items.*
    d. *Must document and maintain a record of each inspection during each 12-month period.*
    e. *Inspections may be scheduled or unscheduled depending upon the requirement of the vehicle operator and/or maintenance provider.*

2. *Preventive Safety Inspection / Preventive Maintenance Program*

    a. *Must inspect the entire vehicle prior to putting it into service.*
    b. *Must develop a schedule of inspection periods (intervals) that will ensure the entire vehicle is inspected within DOT's Regulated 12-month periodic inspection requirement. Some items may be inspected more than once during the 12-month period.*
    c. *May establish interval inspections of different systems during the 12-month period to shorten vehicle out of service time.*
    d. *Must have completed inspection of all DOT 396 listed items, sub-systems and systems within the 12-month period.*
    e. *Must document and maintain a record of each interval inspection during the 12-month period.*
    f. *Interval inspections should be scheduled by vehicle operating miles or hours.*

3. *Progressive Safety Inspection / Progressive Maintenance Program*

    a. *Must inspect the entire vehicle prior to putting it into service.*
    b. *Must develop a schedule of inspection periods (intervals) that will ensure the entire vehicle is inspected within the DOT's Regulated 12-month periodic inspection period.*
    c. *Will need to establish a schedule of interval inspections of different systems during the 12-month period to shorten vehicle out of service time.*
    d. *Entire vehicle inspection must be completed by the end of the 12-month inspection period.*

4. *Periodic Safety Inspection / Break-Down Maintenance Program*

    a. *Must inspect the entire vehicle prior to putting it into service.*
    b. *Must thereafter inspect all DOT regulated items within each 12-month period.*

ADVANTAGES AND DISADVANTAGES

What are the advantages and disadvantages of selecting different programs?

1. ***Periodic Inspections*** *satisfy DOT minimum inspection requirements and will improve the safe operation of each commercial vehicle. May not catch problems with items not listed in DOT regulation Part 396 and related appendices (G). Can minimize the time vehicle is out of service. May result in increased operating cost. Some items not requiring a safety inspection may fail during operation.*

2. ***Preventive Inspection*** *satisfies DOT minimum inspection requirements and improves the safe operation of each commercial vehicle. Will catch many problems before a break down occurs. Will ensure the inspection of all systems on the vehicle several times during the 12-month period. May save on cost of parts and road service calls. May increase the cost of operating each vehicle. May inconvenience vehicle operator by pulling vehicle in at intervals for inspection and any maintenance requirement.*

3. ***Progressive Inspection*** *satisfies DOT minimum inspection requirements and improves the safe operation of each commercial vehicle. Will ensue a managed level of shop activity. Will minimize the time vehicle is out of service. May not inspect some systems as often as needed to ensure maximum life of certain parts, fluids and systems.*

4. ***Break Down Inspection*** *satisfies DOT minimum inspection requirements. Will require more service call trips. Will focus maintenance provider on malfunction repairs.*

DOT REQUIREMENTS

DOT VEHICLE INSPECTION RESOURCES

- Note:

  - The term “truck” as used in this self-study also refers to tractor, bus, or other commercial motor vehicle types. These are vehicles that move on the public highway system under their own power or in combination.

  - The term “trailer” as used here also refers to semi, flat, pole, box, etc. trailers used on the public highway system. These are vehicles that do not have their own power source but depend upon another vehicle for power.

- Department of Transportation Safety Regulations that apply to this “in-service” commercial motor vehicle safety requirement.

1. DOT 396.1 Scope

2. Driver Inspections

   a. DOT 396.7 Unsafe Operation Condition
   b. DOT 396.9 Out-of-Service Vehicle Operation
   c. DOT 396.11 Driver Vehicle Inspection Reports (DVIR)
   d. DOT 396.13 Driver Inspection
   e. DOT 396.15 Drive-away / Towage Operations

3. Maintenance Inspections

   a. DOT 396.3 Inspection and Maintenance report
   b. DOT 396.5 Lubrication
   c. DOT 396.17 Periodic Inspection
   d. DOT 396.19 Inspector Qualifications
   e. DOT 396.21 Periodic Inspection Records Keeping
   f. DOT 396.23 Equivalent to Periodic Inspections
   g. DOT 396.25 Qualification of Brake Inspector

INSPECTOR QUALIFICATION

QUALIFIED SAFETY INSPECTOR

The safety inspector shall meet prescribed DOT 396.19 requirements. DOT requires a safety inspector to become qualified by specific approved and prescribed means.

Check the requirements that you meet.

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	Must understand the inspection criteria set forth in 49 CFR Part 393 and Appendix G and can identify defective truck components.
	Must be knowledgeable and skilled in the methods, procedures, tools and equipment used when performing an inspection.
	Must be capable of performing an inspection by reason of training, experience, or must have successfully completed a State or Federal sponsored training program. a. Must have a certificate from a State that qualifies individuals to perform safety inspections. b. Must in addition have a combination of training and / or experience of at least one full year. Training and / or experience must include the following. • Must have completion of a truck manufacture or similar commercial training program designed to train individuals in truck operation and maintenance. • Must have experience as a maintenance technician / mechanic or inspector in truck maintenance at a commercial garage (maintenance provider), fleet leasing company, or similar facility; or • Must have experience as a commercial vehicle inspector for a State or the Federal Government.

Motor carrier must have and retain evidence of the inspector's DOT Safety Regulation qualification during the period the individual is performing inspections.

Motor carrier must retain the documentation for one full year after the individual leaves the operation.

Should you determine that you do not meet the above requirements see your supervisor for counseling and direction.

Describe how you plan to meet the requirements. When do you plan to be qualified?

SAFETY ITEMS

The following items are considered safety related by DOE Safety Regulations and must therefore be inspected for safe operating condition during your commercial vehicle safety inspection activities. If you observe or believe that any system, such as exterior lights, reflectors, etc., have been altered or removed from a commercial vehicle you may need to research DOT Regulations. See DOT Federal Motor Carrier Safety Regulations Part 393 for applicable equipment and mounting location information.

LIGHTING DEVICES, REFLECTORS, AND ELECTRICAL EQUIPMENT

1. All lights must be operable, have the appropriate color lenses installed and be affixed at the appropriate location and height from the ground.

2. All light devices and reflectors originally installed on the vehicle in accordance with DOT safety requirements must be verified and in proper operational condition. For example, a turn signal must come on when the cab lever is activated and it must blink. The light just coming on is not sufficient to pass a safety inspection.

Following is a partial summary chart of exterior lighting requirements: (See DOT Part 393 Table 1 for electrical specifics on different types of vehicles and combinations.)

♦	Identification lights should be mounted on the vertical centerline of the cab. No part of the light may extend below the horizontal windshield line. This helps reduce driver glare.
♦	Turn signals must be visible front and rear from left and right positions. After market double lens signal lights installed on the front of the vehicle must be visible from the rear of the vehicle. Turn signal lights must not be wired in combination with either a headlight or other light with greater brightness than the turn signal light.
♦	Identification lights do not have to be visible from the rear or lighted if a trailer is attached or a trailer load obscures the rear view.
♦	Truck trailers must have rear side marker lamps installed at a height of 15 to 60 inches from the road surface. See DOT 3393 Table 1 Note 4 for further detail.
♦	Where trailers block-out the truck lights trailers must be equipped with stoplights, taillights, reflectors and if truck lights are not visible turn signals.
♦	Trucks and trailers must have hazard or emergency flashing lights. There must be two flasher lights in the front and rear of trucks and on the rear of trailers.
♦	Clearance lights must be placed so as to indicate the width and height of the vehicle, not including side mirrors.
♦	High and low beams of headlights should be checked to ensure they are properly aimed. See SAE Standards for Electric Headlamps for Motor Vehicles or Sealed-Beam Headlight Units for Motor Vehicles for adjustment specification.

Electrical wiring installations should be checked to ensure that they are protected from abrasion, weather, and fuel leaks (route wires above fuel or flammable liquid handling lines and tanks so leakage doesn't run onto wires).

Wiring should also be protected from grease (grease will deteriorate plastic and rubber), wire to wire chafing, and supported properly at intervals that will reduce movement. Wiring should be supported with hangars with rubber or plastic inserts to prevent metal from touching the wire.

Electrical boxes, conduit, and other units must be sealed so as to prevent moisture and fluids from entering the interior. Moisture and fluid leakage can cause electrical shorts and corrosion.

Check to ensure electrically powered / operated equipment is properly and securely grounded and that no corrosion exists between connections.

Check to ensure the battery box is corrosion protected and has a removable top if not inside the engine compartment. Check to ensure that the positive and negative wires have not been worn or chafed.

Check for battery wire terminal corrosion.

List additional electrical and related items that you can think of which should be checked for correct placement and safe operating condition during a safety inspection.

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BRAKES

Commercial trucks and combination vehicles must have the following. (See DOT Part 393 for brake specifics on different types of vehicles and trailer combinations.)

♦	*A brake system adequate to control the movement of and stop and hold the vehicle or combination of vehicles.*
♦	A service brake system.
♦	A parking brake system.
♦	*An emergency braking system.* • The emergency braking system must be a separate system from the service brake system
♦	Vehicles used to tow a trailer or other vehicle must have a breakaway system that will automatically apply the trailer service brakes upon accidental disengagement.
♦	Brakes must not grab, fade or apply disproportional force. • If applicable check ABS for proper operation. (Automatic Braking System)
♦	A working hydraulic brake system warning device.
♦	A working vacuum brake system warning device.
♦	Proper stopping action of service brake systems.
♦	Proper stopping action of emergency brake systems.
♦	Proper holding action of parking brake system.

List additional brake system and related items that you can think of which should be checked for correct placement and safe operating condition during a safety inspection.

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WINDSHIELDS AND WINDOWS

Commercial trucks must comply with the following glazing and window requirements. (See DOT Part 393 for glazing and window specifics on different types of vehicles.)

♦	Windows should be free of discoloration. • Tinting is permitted as follows: 2 inches top and 1 inch sides
♦	Windows must be free of cracks and other damage, except; • Cracks not over one quarter of an inch wide that do not intersect another crack can be permitted • Any damage less than three quarters of an inch and not closer than three inches from other similar damage can be permitted
♦	Stickers and decals other than those required by law should not be permitted.

List additional windshield and related items that you can think of which should be checked for correct placement and safe operating condition during a safety inspection.

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FUEL SYSTEMS

Commercial trucks must comply with DOT Part 393.67 for fuel system requirements.

♦	Fuel tank joints must be welded and not crimped or lead based soft soldered.
♦	Fittings (flanges / spuds) must be integral with the fuel tank, or welded in the tank not screwed into the tank itself.
♦	At least 4 full threads of fittings must be screwed into the fuel tank flanges / spuds.
♦	Fuel tank drain fittings or plugs shall not extend more than three-quarters of an inch below the lowest part of the fuel tank or sump.
♦	Drain fittings must be protected from impact damage.
♦	Fuel tank venting system must not be restricted or pinched so as to prevent adequate venting of vapors in the event of an emergency.
♦	Fuel tanks, if visible, must be plainly marked with a warning against filling the tank to more than 95% of it's liquid capacity.
♦	Additionally, fuel tanks must be marked as follows. • The month and year of manufacture • The manufacturer's name (after 6/1/88 manufacturing date) and a means of identifying the facility where the tank was manufactured • A certificate that the fuel tank conforms to DOT rules (FHWA requirements)

List additional fuel system items that you can think of which should be checked for correct placement and safe operating condition during a safety inspection.

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COUPLING DEVICES AND TOWING

Commercial trucks must comply with DOT Subpart F of Part 393.70 for combination towing devices and towing method requirements.

♦	The coupling device must be installed so that they operate in a straight line on a level, smooth and paved surface with no more than 3 inches deviation.
♦	The fifth wheel assemblies should have no cracks in the metal or welds, loose bolts, warp, or deformation of the truck frame.
♦	The fifth wheel assembly must include a device for positively preventing the lower half of the fifth wheel from shifting on the frame to which it is installed.
♦	The upper half of the fifth wheel must be fastened to the towed vehicle with at least the same security required for the installation of the lower half of truck (tractor) or converter dolly.
♦	Every fifth wheel assembly must have a locking mechanism that prevents separation of the upper and lower halves unless a positive manual release is activated.
♦	The fifth wheel locking device shall apply automatically upon coupling.
♦	The lower half of a fifth wheel assembly shall be located so that the relationship between the kingpin and the rear axle or axles of the truck will properly distribute the gross weight of both the towed and towing vehicles. The weight must be properly distributed on the axles of both vehicles so that it will not unduly interfere with the steering, braking, or other maneuvering of the towing vehicle.
♦	Towing bars must be for the proper weight being towed and have security mounting devices in good working order.
♦	Towing device must be secured to the towing truck frame in a secure manner, either welded or with adequate size hardware.
♦	Towing assembly safety devices must be present and in good working order that meets DOT requirements.
♦	Towed vehicle attachment bar must not touch the ground should it become unhooked from the towing vehicle.
♦	Tow chains / cables shall be used and they must be of adequate size to control the trailer. • May be two chains or cables • May be one chain or cable if connected to the centerline of both vehicles

List additional towing related items that you can think of which should be checked for correct positioning and safe operating condition during a safety inspection.

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MISCELLANEOUS PARTS AND ACCESSORIES

Commercial trucks must comply with the following. (See DOT Subpart G Part 393.75-94 for specific requirements.)

♦	Tires must not have any body ply or belt material exposed to view.
♦	Front axle tires must have a minimum of four thirty seconds inch tread groove measured in the middle of the tire. Other tires must have at least three thirty seconds inch tread groove measured in the middle of the tire.
♦	Trucks must not have re-grooved tires on the front axle that have a load carrying capacity equal to or greater than that of 8.25 x 20, 9 ply rated tires.
♦	No load may be carried that is greater than the tire rated weights.
♦	No tire may be operated that has a cold inflation pressure less than that specified for the load to be carried by the vehicle.
♦	Trucks operating in conditions of ice, snow, or frost must have an operating automatic windshield device for preventing or removing obstructions.
♦	Trucks shall be equipped with two rear view mirrors, one at each side of the vehicle. Mirrors must be so located as to give the driver a view of the highway to the rear, along both sides of the truck.
♦	Trucks shall be equipped with an operable horn and manual actuating mechanism, which can give an adequate and reliable warning signal.
♦	Trucks must be equipped with a working and sealed speedometer calibrated in miles per hour and reasonably accurately calibrated to the vehicle and tires.
♦	Exhaust systems must be located away from wires, fluid lines or any combustible part of the truck. Exhaust pipe shall not be directed under or near fuel tanks.
♦	Truck cab floors must be free of unnecessary holes, oil, and loose objects that interfere with truck controls or allow engine vapors to enter.
♦	Trucks must be equipped with a seat belt assembly. (See DOT 393.93)
♦	Truck cab noise levels should not exceed 90 dB(A). (See DOT 393.94)

List additional towing related items that you can think of which should be checked for correct placement and safe operating condition during a safety inspection.

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EMERGENCY EQUIPMENT

Commercial trucks must comply with the following. (See DOT Subpart H Part 393.95 for specific requirements.)

♦	Fire extinguisher: • Properly filled • Readily accessible • Securely mounted to truck • Visually indicate state of charge • Non freezing extinguishing agent • Must not use a vaporizing liquid that gives off vapors more toxic than those produced by the substances shown as having a toxicity rating of 5 or 6 in the Underwriters' Laboratories "Classification of Comparative Life Hazard of Gases and Vapors" • Trucks transporting hazardous materials require two fire extinguishers
♦	At least one spare fuse, if not reset types, for each kind and size of fuse used is required.
♦	Warning devices required. Devices may be flares, reflectors, triangles, flags or lights. (See DOT 393.95 for approved types of emergency equipment allowed)

List additional towing related items that you can think of which should be checked for correct placement and safe operating condition during a safety inspection.

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PROTECTION AGAINST SHIFTING OR FALLING CARGO

Commercial trucks must comply with the following. (See DOT Subpart I Part 393.100 for specific requirements.)

♦	Trucks carrying cargo must be equipped with devices to provide protection against shifting or falling cargo. Devices shall be in good working condition and DOT approved types and sizes. • Sides, sideboards, or stakes • Rear end-gate, end-board, or stakes • Tie-down assembly • Chain, webbing, or rope • Binders • Headboard (headache rack) on flat trailers to prevent forward shifting of load

List additional emergency related items that you can think of which should be checked for correct placement and safe operating condition on a commercial motor vehicle.

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FRAMES, CAB AND BODY COMPONENTS, WHEELS, STEERING & SUSPENSION SYSTEMS

Commercial trucks must comply with the following. (See DOT Subpart J Part 393.201-209 for specific requirements.)

♦	Truck should not have cracked, loose, sagging or broken frames.
♦	Bolts or brackets securing the cab or the body to the frame must not be loose, broken, or missing.
♦	Frame rail flanges between the axles must not be bent, cut or notched, except as specified by the manufacturer.
♦	All accessories mounted to the truck frame must be bolted or securely riveted.
♦	No holes can be drilled in the top or bottom of frame rail flanges, except as specified by the manufacturer.
♦	Cab doors should not have missing or broken parts.
♦	Bolts or brackets securing the cab or body to the frame must not be loose, broken or missing.

Continued from preceding page

♦	Truck hood must be securely fastened.
♦	All seats must be securely mounted.
♦	Front bumper must not be missing, loosely attached, or protruding beyond the confines of the vehicle as a to create a hazard.
♦	Wheels and rims must not have cracks or be broken. • Wheel studs or boltholes on the wheels must not be elongated • Wheel nuts and bolts must not be missing or loose
♦	All axles must be properly aligned. • No axle positioning part may be cracked, broken, loose or missing • Adjustable axle assemblies must not have locking pins missing or disengaged • No leaf spring can be broken, missing or shifted out of position • No coil spring can be cracked or broken
♦	No torsion bar or torsion bar suspension can be cracked or broken.
♦	Air pressure regulator valve must not allow air into the suspension system until at least 55 PSI has built up or is in the braking system.
♦	Vehicle should sit level on its suspension system.
♦	Air leaks must not be greater than 3 PSI in a 5-minute time period when the vehicle's air pressure gauge shows normal operating pressure.
♦	Steering wheel system must be secured and must not have any spokes cracked through or missing. • Steering column must be securely fastened • Steering system universal joints must not be worn, faulty or repaired by welding • Steering system gear-box must not have loose or missing mounting bolts or cracks in the gearbox or mounting brackets • Steering system pitman arm on the steering box output shaft must not be loose • Steering wheel must turn freely through the limit of travel in both directions • All components of the power steering system must be in operating condition • No power steering part can be loose or broken • Belts must not be frayed, cracked or show signs of slippage • Power steering system must have no leakage of fluid • Power steering system must have sufficient fluid in the reservoir

List additional items that you can think of which should be checked for correct placement and safe operating condition on a commercial motor vehicle.

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SAFETY INSPECTION

Guide Lines

Now that you have reviewed much of what you must look for during your safety inspection activity let's discuss DOT minimum periodic inspection standards.

Have and follow an inspection work sheet. Your maintenance provider's supervisor or operator may have already designed a custom report for their specific fleet of vehicles. If not, design your own safety inspection work sheet, but be careful to include all of the minimum DOT safety requirement information.

Always complete the work sheet fully and sign it upon completion of your inspection.

Make system condition notes for later maintenance and service action.

Look at, touch and study each item you inspect on the vehicle.

Look for the obvious as well and hidden damage or wear.

Look for broken, frayed, nonfunctioning, worn and missing parts and components such as nuts, cotter pins, etc.

Look for unsafe conditions.

Focus on safety items per DOT requirements, such as the proximity of electricity wires to fluid piping / tubing. For example;

√ Ensure electrical wiring is routed above fluid carrying tubing / piping
- To prevent flammable fluids from dripping onto electrically wires

√ Determine the amount of wear
- To decide if part will operate safely until the next scheduled inspection Interval

√ Look for hidden damage under parts, grease, paint, etc.

√ Without reviewing prior lessons in this self-study module make your own list of safety items.
List items you must be aware of when inspecting commercial motor vehicles. Include DOT minimum requirements on your list.

1) _____

2) _____

Continued from previous page

3) _____

4) _____

5) _____

6) _____

7) _____

8) Etc…

Now, go back in this self-study and compare your list of safety items with the DOT safety items. How complete was you list? If you listed 100% of the DOT safety items you have achieved a qualified safety inspector level of completeness. If you did not list all of the DOT minimum standards go back and study these materials again and review DOT 396, or write the standards until you know and can list all of them.

SELF NOTES:

MINIMUM STANDARDS

Should any one of the following items on a commercial motor vehicle fail to meet DOT safety requirements the vehicle has not passed the minimum safety inspection requirement. Repair work must be completed to the system failing the inspection. The failed system must be re-inspected before the vehicle can be put back into service. (See DOT 396; Appendix G to Subchapter B.)

Every commercial motor vehicle operator is require by DOT to ensure their drivers complete a Driver's Vehicle Inspection Report (DVIR) on either a daily or trip basis. The DVIR must cover at least the following minimum information.

- Service brakes including trailer brake connections
- Parking (hand) brake
- Steering mechanism
- Lighting devices and reflectors
- Tires
- Horn
- Windshield wipers
- Rear view mirrors
- Coupling devices
- Wheels and rims
- Emergency equipment

Most fleet operator's DVIR will also provide additional space for the driver to note other problems and items in need of servicing or repair.

The DVIR (Driver's Vehicle Inspection Report) is the Safety Inspector's as well as the Maintenance Technician's starting point when conducting either the safety inspection or maintenance activities.

Following are the minimum safety inspection requirements of the U. S. Department of Transportation. Ensure at the very least that the following items are on your safety inspection work sheet. A vehicle can not pass a DOT required safety inspection unless each of the following items has "passed" the safety inspection. If one or more of the following items does not pass your inspection the entire vehicle has "failed" its safety inspection. One hundred percent compliance is required, anything less fails to meet DOT requirement.

MINIMUM DOT PERIODIC INSPECTION CAUSES FOR REJECTION

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
1. BRAKE SYSTEMS *NOTES:*	*Service Brakes with;* ♦ *No braking action on any axle that has a brake assembly installed.* ♦ *Wedge, S-cam, cam or disc brake actuators that do not move when applied.* ♦ *Missing brake shoes or pads.* ♦ *Missing or broken mechanical components including shoes, lining, pads, springs, anchor pins, spiders, cam rollers, push rods, and air chamber mounting bolts.* ♦ *Loose brake components including air chambers, spiders, and camshaft support brackets.* ♦ *Adjustment out of limits.* ♦ *Any brake ¼" or more past the readjustment limit or any two brakes less than ¼" beyond the readjustment limit. Note: Stroke should be measured with engine off and air reservoir pressure at 80 to 90 PSI with brakes fully applied.* ♦ *Any leaks in air or hydraulic system.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Brake Systems Continued	*Wedge Brakes with;* • *Movement of wedge brakes on the scribe mark on the lining exceeding 1/16 of an inch.* • *Brake lining and pads loosely attached to the shoe.* • *Brake lining saturated with oil, grease, hydraulic, or brake fluid.* • *Brake lining on non-steering axles with a thickness at the shoe center for air brakes of less than ¼ inch, less than 1/16 inch for hydraulic and electric drum brakes, and not less than 1/8 inch for air disc brakes.* • *Brake lining on drum brakes steering axle with a thickness at the shoe center of less than 1/4". Less than 1/8 inch on air brakes and less than 1/16 inch on hydraulic and electric brakes.* • *Air chamber sizes and slack adjuster lengths that do not match.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Brake Systems Continued	*Parking Brakes with;* • *Driveline hand controlled parking brake that controls other brake systems that apply on the motor vehicle or trailer when the parking hand control is applied.* • *External crack or cracks that open upon brake application. (Do not confuse short hairline heat check cracks with flexural cracks). (Cracks that flex open)* • *Missing part(s) of the drum or rotor, or if parts are in danger of falling off the brake system.* • *Any damage to the brake hose extending through the outer reinforcement ply or when a second color of the hose is visible.* • *Brake hose swells when brakes are applied.* • *Any audible air leaks from hose or tubing.* • *Spliced brake hose.* • *Cracked, broken or crimped air hose.* • *Cracked, heat damaged, broken, or crimped brake tubing (line).* • *Low pressure warning device that is not operating at 55 PSI or below, or ½ the governor cutout pressure, whichever is less.* • *Low pressure warning devices missing parts or which are inoperative.* • *Inoperable or missing tractor protection valve(s).*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Brake Systems Continued	♦ *Worn or cracked air compressor drive belts.* ♦ *Loose air compressor mounting bolts.* ♦ *Cracked, broken or loose pulley.* ♦ *Cracked or broken mounting brackets, braces or adapters.* *Hydraulic Brakes with; (Power assisted over hydraulic and engine drive hydraulic boosters.)* ♦ *Master cylinder less than ¼ full.* ♦ *Absence of braking action on any axle that is required to have brakes.* ♦ *Missing or inoperable trailer breakaway braking devices.* ♦ *No petal reserve with the engine running except by pumping the brake pedal.* ♦ *Power assist unit failing to operate.* ♦ *Seepage or swelling brake hose under brake application pressure.* ♦ *Missing or inoperable check valve.* ♦ *Visible hydraulic fluid leaking from any part of the system.* ♦ *Hydraulic hose(s) abraded (chafed) through outer cover of fabric layer.* ♦ *Fluid lines or connections leaking, restricted, crimped, cracked or broken.* ♦ *Brake failure or low fluid warning light on and/or inoperative.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Brake Systems continued	*Electric Brakes with;* • *Absence of braking action on any wheel required to have brakes.* • *Missing or inoperable trailer breakaway braking device.* • *Master cylinder less than ¼ full.* • *No pedal reserve with engine running except by pumping pedal.* • *Power assist unit failing to operate.* • *Seeping or swelling brake hose under application of pressure.* • *Missing or inoperable check valve.* • *Any visible leak from system hydraulic fluid.* • *Hydraulic hose(s) abraded (chafed) through outer cover to fabric layer.* • *Fluid lines or connectors leaking, restricted, crimped, cracked or broken.* • *Brake failure or low fluid warning light on and/or inoperative.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Brake Systems continued	*Vacuum System with;* • *Insufficient vacuum reserve to permit one full rake application after engine is shut down.* • *Vacuum hose(s) or line(s) restricted, abraded (chafed) through outer cover to cord ply, crimped, cracked, and broken or has collapse of vacuum hose(s) when vacuum is applied.* • *Lack of an operable low-vacuum warning device as required by DOT.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
2. COUPLING DEVICES *NOTES:*	*Fifth Wheel with;* • *Mounting to frame cracked, loose or damaged.* • *Any fasteners missing or ineffective.* • *Any movement between mounting components.* • *Any mounting angle iron cracked, bent or broken.* • *Warped mounting plates and pivot brackets.* • *Any fasteners missing or ineffective.* • *Any welds or parent metal cracking.* • *More than 3/8 of an inch horizontal movement between pivot bracket pin and bracket.* • *Pivot bracket pin missing or not secured.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Coupling Devices Continued	*Sliders with;* • *Any latching fasteners missing or ineffective.* • *Movement more than 3/8 inch between slider bracket and slider base.* • *Any slider component cracked in parent metal or welds.* *Lower Coupling with;* • *Horizontal movement between the upper and lower fifth wheel halves that exceeds ½ of an inch.* • *Fifth wheel operating handle not closed or locked.* • *Kingpin not properly engaged.* • *Separation between the upper and lower coupler that allows light to show through from side to side.* • *Cracks in the fifth wheel plate. (Note exception. Cracks in fifth wheel approach ramps and cast in shrinkage cracks in the ribs of the body of a cast fifth wheel.)* • *Locking mechanism parts missing, broken, or deformed to the extent the kingpin is not securely held.* *Pintle Hook with;* • *Unsafe mounting to truck frame.* • *Any missing or ineffective fasteners.* • *Mounting surface cracks extending from the point of attachment.* • *Loose mounting.* • *Cracks in the frame cross-member providing pintle hook attachment.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Coupling Devices continued	♦ *Poor integrity.* ♦ *Cracks anywhere in the pintle hook assembly.* ♦ *Any welded repairs to the pintle hook.* ♦ *Any part of the pintle hook horn section reduced by more than 20%.* ♦ *Insecure pintle hook latch.* *Tow-bar / Draw-bar Eye with;* ♦ *Weak mounting.* ♦ *Any cracks in attachment welds.* ♦ *Any missing or ineffective fasteners.* ♦ *Poor integrity.* ♦ *Any cracks* ♦ *Any part of the eye reduced by more than 20%* *Tow-bar / Draw-bar Tongue with;* ♦ *Ineffective slider latching mechanism (power or manual).* ♦ *Ineffective latching mechanism.* ♦ *Missing or ineffective stop.* ♦ *Movement of more then ¼ inch between slider and housing.* ♦ *Any leakage of air or hydraulic fluid from cylinders, hoses, or chambers.* ♦ *Poor integrity.* ♦ *Any cracks.* ♦ *Movement of ¼ inch between sub-frame and drawbar at the point of attachment.* *Safety Devices with;* ♦ *Safety devices missing, unattached or incapable of being securely attached.* ♦ *Inadequate size safety chain(s) / cable(s) or hook(s).*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Coupling Devices continued	• *Properly attached dual chains/cable or single cable/chains.* • *Wear to the extent of a measurable reduction in the cross section.* • *Improper repairs including welding, wire, small bolts, rope and tape.* • *Missing safety cable(s) or chain(s).* • *Kinked or broken cable strands.* • *Improper clamps or clamping.* *Saddle Mounts with;* • *Weak or poor methods of attachment.* • *Any missing or ineffective fasteners.* • *Loose mounts.* • *Any cracks or breaks in a stress or load-bearing member.* • *Horizontal movement between upper and lower saddle mount halves exceeding 1/4 of an inch.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
3. EXHAUST SYSTEMS *NOTES:*	*Exhaust System with;* • *Any exhaust system leakage at a point forward of or directly below the driver or sleeper compartment or cab.* • *Any leakage on a bus exhaust system at any point discharging to the atmosphere.* • *Any leakage on a gasoline bus exhaust system in excess of 6 inches forward of the rearmost part of the vehicle.* • *Other than gasoline powered vehicles in excess of 15 inches forward of the rearmost part of the bus.*
Exhaust System Continued	• *Any other powered vehicle forward of a door or window designed to be opened, excluding emergency exits.* • *Any part of the exhaust system of any motor vehicle so located as would be likely to result in burning, charring, or damage to the electrical wiring, the fuel supply, or any combustible part of the vehicle.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
4. FUEL SYSTEM *NOTES:*	*Fuel System with;* • *Any visible fuel leak at any point.* • *A fuel tank filler cap missing.* • *A fuel tank not securely attached to the vehicle by reason of loose, broken or missing mounting bolts or brackets.* • *A fuel tank mounting using springs or rubber bushings to permit movement that is cracked, broken or has missing parts.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
5. LIGHTING SYSTEMS *NOTES:*	*Lighting Devices with;* • *Any light or reflector inoperable or not performing the intended function.* • *Defective battery cables, alternator, or cable corrosion.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
6. SAFE LOADING DEVICES *NOTES:*	*Safe Loading Devices with;* • *Any condition of loading that may allow items to fall onto a roadway.* • *No any front-end trailer structure or equivalent device to prevent cargo shifting.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
7. STEERING MECHANISM *NOTES:*	*Steering Mechanism with;* ◆ *Steering wheel free play (vehicles with power-steering must have engine running.) out of the following limits:*

Steering wheel diameter	*Manual steering system*	*Power steering system*
16 inches	2 inches	4-1/2 inches
18 inches	2-1/4 inches	4-3/4 inches
20 inches	2-1/2 inches	5-1/4 inches
22 inches	2-3/4 inches	5-3/4 inches

◆ *Any absence or looseness of steering column U-bolt(s) or positioning part(s).*

◆ *Worn, faulty or obvious repair welded universal joint(s).*

◆ *Steering wheel not properly and tightly secured.*

◆ *Front axle beam and all steering components other than steering column having any crack or cracks in the gearbox or mounting brackets.*

◆ *Any looseness of the pitman arm on the steering gear output shaft.*

◆ *Any movement of ball and socket joints under steering load.*

◆ *Any motion, other than rotation between any linkage member and its attachment point or more than ¼ of an inch.*

◆ *Loose tie rod and drag link clamp bolts on tie rods or drag links.*

◆ *Any looseness in any threaded joint.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Steering Mechanism Continued	◆ *Any nuts loose or missing from the tie rod, pitman arm, drag link, steering arms or tie rod arm.* ◆ *Any modification to the steering system or other condition that interferes with free movement of any steering component.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
8. SUSPENSION SYSTEM *NOTES:*	*Suspension Systems with;* ◆ *U-bolt(s), spring hanger(s), or other axle positioning part(s) cracked, broken, loose or missing that results in shifting of any axle from its normal position.* ◆ *Any leaves in a leaf spring assembly broken or missing.* ◆ *Any broken main leaf in a leaf spring assembly.* ◆ *A broken coil spring.* ◆ *Any rubber spring missing.* ◆ *One or more leaves displaced in a manner that could result in contact with a tire, rim, brake drum or frame.* ◆ *A broken torsion bar spring in a torsion bar suspension.* ◆ *Deflated air suspension, i.e., system failure, leak, etc.* ◆ *Any part of a torque, radius or tracking component assembly or any part used for attaching the same to the vehicle frame or axle that is cracked, loose, broken or missing.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
9 FRAME *NOTES:*	*Frame with;* • *Any cracked, broken, loose, or sagging frame member.* • *Any unauthorized holes drilled in the top or bottom frame flanges.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Frame Continued	• *Any loose or missing fasteners including fasteners attaching functional components such as engine, transmission, steering gear, suspension, body parts, and fifth wheel.* • *Any condition, including loading, that causes the body or frame to be in contact with a tire or any part of the wheel assembly.* • *Any adjustable axle assembly locking pins missing or not fully engaged.* • *Loose, worn, deteriorated or bent links on engine mounts.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
10. TIRES *NOTES:*	*Tires On Steering Axle of Power Units with;* • *Less than 4/32 inch tread when measured at any point on a major tread groove.* • *Exposed body ply or belt material through the tread or sidewall.* • *Any tread or sidewall separation.* • *A cut where the ply or belt material is exposed.* • *Tire labeled "Not for Highway Use" or displaying other marking which would exclude use on a steering axle.* • *A tube-type radial tire without radial tube stem markings. (Markings include a red band around the tube stem, the word "radial" embossed in metal stem, or the word "radial" molded into the rubber stem.)*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Tires Continued	◆ *Mixed bias and radial tires on the same axle.* ◆ *Tire flap protruding through valve slot in rim and touching* ◆ *Re-grooved tires except on motor vehicles used solely in urban or suburban service.* ◆ *A boot, blowout patch or other ply repair.* ◆ *Overloaded tires, including those with low air.* ◆ *Flat tire.* ◆ *A recapped or retread tire installed on a bus.* ◆ *A tire touching any part of the vehicle.* ◆ *Any non-steering axle of a power unit with weight carried exceeding tire load limit, including tires with low air pressure.* ◆ *Any non-steering axle of a power unit with less than 2/32 inch of tread when measured at any point on a major tread groove.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
11. WHEELS AND RIMS *NOTES:*	*Wheels and Rims with;* ◆ *Any bent, broken, cracked, improperly seated, sprung or mismatched ring(s) of wheels and rims.* ◆ *Any wheel or rim with cracked, broken or elongated stud holes.* ◆ *Any loose, missing, broken, cracked, stripped or otherwise ineffective fasteners on both spoke and disc wheels.* ◆ *Any cracks in welds attaching wheel disc to rim.* ◆ *Any crack in welds attaching tubeless or mountable rims.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
Wheels and Rims Continued	• *Any welded repairs on aluminum wheels on a steering axle.* • *Any welded repairs other than disc to rim attachment on steel disc wheels mounted on the steering axle.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
12. WINDSHIELD GLAZING *NOTES:*	*Windshield Glazing with;* • *Any crack, discoloration or vision reducing material except coloring or tinting applied at time of manufacture.* • *Any crack over ¼ inch wide, if intersected by any other crack.* • *Any damaged area of more than ¾ inch in diameter, if closer than 3 inches to any other damaged area.* • *Any labels, stickers, decalcomania, etc. except stickers required by law.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
13. WINDSHIELD WIPERS *NOTES:*	*Windshield Wipers with;* • *Any improper wiper, or any missing or damaged part that renders the wiper ineffective.* • *Inoperative switch.*

MINIMUM DOT PERIODIC INSPECTION ITEMS	CAUSES FOR REJECTION:
14. SAFETY AND EMERGENCY EQUIPMENT *NOTES:*	*Vehicle with;* • *No or insufficient safety equipment.* • *Inoperable safety equipment.* • *Missing clearance lights.* • *Loose rear view mirror.* • *Missing mud flaps.*

SAFETY INSPECTION CHECK SHEET

DOT MINIMUM SAFETY REQUIREMENT DOCUMENTATION:

Based upon what you have learned thus far:

1) Make a **Safety Inspection Action Plan** and
2) Make your own **Safety Inspection Check Sheet**.

First, a qualified safety inspector's plan must contain at least the specified DOT safety inspection items highlighted in DOT regulation part 396. The more successful and cost effective approach to developing a plan is to first complete a graphical path around the vehicle. An overhead view, such as the following, can be utilized to experiment with your ideas of how you can proceed to inspect the most items in the least amount of time and energy on your part.

The quality of your safety inspection or maintenance inspection plan for that matter will depend on the amount of thought and work you choose to put into its development. Keep in mind that traveling from the front of the vehicle to the back takes time as does going under the vehicle and into the cab. Plan accordingly.

Second, a qualified safety inspector's report (check sheet) and other acceptable forms of inspection documentation (based on the inspection work sheet, such as a decal, a sticker, etc,) must contain at least the amount of information listed in the following form design example. Be sure you include at least this information at a bare minimum. Refer to DOT Safety Regulation Part 396 if you have questions, or contact your resource person.

We recommend you develop a plan of inspection. In other words take some time to consider what kind of path you will take around the vehicle to complete an inspection. What path can you devise that will reduce steps and

save valuable time? Determine how items can be inspected in a manner that will minimize movement around, under, over and inside the vehicle. This carefully thought out action plan will save you time and effort, and reduce the vehicle operator's cost. Once you have determined the best approach list the inspection items on your check sheet in a manner that will match your planned or laid out inspection route. Use an overhead vehicle diagram if appropriate to plan out your route.

When you have finished your vehicle inspection plan you may want to contact your resource person to discuss how the time frame for completing the inspection might be shortened.

Commercial Vehicle Safety Inspection©

Safety Inspector's Check Sheet Design Planing Job Aid

COMMERCIAL VEHICLE SAFETY INSPECTION

(NAME OF VEHICLE OPERATOR)

(ADDRESS OF OPERATOR OR INSPECTION PROVIDER)

INSPECTION DATE: _____ VEHICLE ID NUMBER: _____

*NOTES:*_____

_____

_____

Check (√) items passing inspection and mark "X" for items that do not pass

#	ITEM	√	X		#	ITEM	√	X

I _____ hereby certify that this safety inspection has been conducted in accordance with DOT Part 396 of the Federal Motor Carrier Safety Regulations.

Signed: _____

GETTING ORGANIZED

Now that you have some idea of the magnitude of the job before you let's discuss how you can go about breaking a large job into smaller pieces. By looking at the safety and / or maintenance inspection as a series of smaller inspections you can better organize your movement and records keeping activities.

Breaking your inspections into smaller system and component focused inspections will accomplish several goals for you and the maintenance provider as well as the vehicle operator. It will allow you to focus exclusively on an entire system before moving on to inspecting other systems. It will allow you to complete parts of a periodic inspection over a period of time so long as the entire inspection is completed within the prescribed DOT required time frame of 12 months. This allows you to minimize the out of service time of the vehicle and gives the motor vehicle operator more advantageous scheduling opportunity.

The following suggested division of your inspection plan would apply to maintenance as well as safety inspections.

1) Cab compartment inspection
2) Walk around inspection
3) Battery compartment inspection
4) Powerplant compartment inspection
5) Engine tune-up status inspection
6) Wheel / tire assembly inspection
7) Brake assembly inspection
8) Chassis inspection
9) Alignment inspection
10) Lubrication / oil inspection

VEHICLE SYSTEMS INSPECTION

(Add additional items to your system inspection lists)

1) The <u>cab compartment inspection</u> should be the first inspection you make because you are already in the cab of the vehicle, assuming you are the person who has driven the vehicle into your inspection facility.	While in the cab inspect; a) Proper operation of • Clutch • Brake systems • Wipers • Instruments • Air system • Horn(s) • Heater / Air conditioner controls • Accelerator and hand throttle • Seats • Cab latch and lifters • • • • • • • • b) Proper specifications of • Governed RPM • Windshield obstructions / cracks • Rear view mirrors • Odometer seal • Safety equipment and date • • • • • • • • • • •

Continued

2) The walk around inspection should be considered the second system you inspect because you will have to turn on all exterior lights.	Inspect; • Bulbs and seal beams • Flashers • Turn signals • Brake lights • Back-up light and buzzer • Front / Rear identification lights • Physical damage • Hubs for leaks • Fuel tank hardware • Air hose and glad-hand • Exhaust system hardware / leaks • Trailer connectors • Fifth wheel and lock • Radiator and air conditioner condenser for obstructions • Cab tilting mechanism

Continued

3) The battery compartment inspection, because it is directly related to the lighting system may be the third system you will want to inspect.	Inspect: • Batteries condition and charge • Cables and connectors • Compartment condition •

Continued

4) The powerplant compartment may be an appropriate location to inspect next.	Inspect; • Fluid leaks • Fan assembly • Vacuum pump (if installed) • Exhaust leaks • Air conditioner compressor • Radiator shroud and mount • Radiator hose and clamps • Hydraulic brake booster (if installed) • Fan / Accessory belts (condition / tension) • Antifreeze condition and strength • Pressure test radiator for leaks • Radiator cap let-off pressure • Fan clutch

Continued

5) The engine inspection is a logical activity to perform while you have the cab or hood raised. You will be inspecting both gasoline and diesel engine installations. Separate inspection procedures are required and recommended.	Inspect; a) Diesel Engines • Air cleaner system • Valves and injectors • Air operated valve • Water pump • Idler pulley • Crankcase breather • Turbocharger • Low and high RPM settings • AFC fuel pressure • Fuel pump • Air to fuel ratio • Injector and valve adjustment • • b) Gasoline engines • Cylinder compression • Ignition timing • Air to fuel ratio • Air cleaner • PCV valve • Heat device hose and ducts • Vacuum lines • Distributor • Wiring • Spark plugs • EGR (Exhaust Gas Recirculation) valve • PCV • Air injector system • Air supply pump and bypass valve • Valve and air injector manifold • Fuel system • Engine timing • Vacuum advance • Carburetor idle speed and mixture • Governor • Engine RPM •

Continued

6) The <u>wheel / tire assemblies inspection</u> is a good candidate for your sixth system inspection.	Inspect; • Tire wear and condition • Tire match • Tire tread thickness • Dual tire mating • Valve stems and locks • Valve stem caps • Air pressure decals • Tire air pressures • Wheels for bends and cracks • Wheels for loose lug nuts • Wheel stud hole roundness • Wheel rust / corrosion • •

Continued

7) The brake assembly inspection may be inspected at this point.	Inspect; • Wheel seals • Wheel bearings • Brake hose and fittings • Brake lining thickness and condition • Drums and rotors for scoring and/or cracks • Brake systems adjustments • Inner wheel seals • Wheel bearing grease/oil condition • Uniform brake application

Continued

8) The <u>chassis inspection</u> will need to be done about now.	Inspect; • Transmission mounts • Engine mounts • Engine vibration damper • Engine oil leaks • Transmission fluid leaks • Power steering fluid leaks • Parking brake • Axle(s) and differential(s) • Drive shaft(s), U-joints and slip yokes • Springs and U-bolts • Spring shackles and hangers • Chassis to cab mounting • Exhaust system mounting and condition • Steering system • Kingpins or ball joint wear •

Continued

9) The <u>alignment inspection</u> can be inspected at this juncture.	Inspect; • Front wheel toe-in / toe-out • Tandem axle alignment • Tandem axle spacing • License plate, bracket and light • Lift gate (if equipped) • Overhead and swing doors • Loading ramp (if equipped) • Odometer accuracy • Power vehicle to trailer tracking •

Continued

10) The <u>lubrication inspection</u> along with a road test should be the last activity you conduct. Road test vehicle.	Inspect; • Lubricant levels • Door hinges and latches • Joint fittings and rubber cup seals • Knuckle pins • Differential oil condition and level • Power steering fluid condition • Engine oil condition • Transmission fluid condition • Transmission filters • Brake fluid condition • Clutch master cylinder fluid Check; • Steering • Clutch • Brake feel and application pressure • Transmission shifting • Engine operation • Cab and door rattles • Heater operation and control • Air conditioner operation and control • • • • • • • • • • • • • • • • • • •

ADDITIONAL INSPECTIONS ITEMS

You may want to consider inspecting additional items on commercial vehicles in order to reduce the overall cost of maintaining your vehicle operator's fleet. In addition you can help extend the intervals between maintenance and repair of their vehicles.

Following is a list of items you may wish to consider including on your inspection check sheet. We recommend you consider keeping these items separate from your DOT safety items. You may consider putting these items on the back of your Commercial Vehicle Safety Inspection work sheet. You may also consider titling these items **Preventive Maintenance Inspection**.

NOTES:	Inspection Items: ♦ Clean engine, undercarriage, and cab for inspection. ♦ Check if operator uses an **inspection sticker**. If yes, complete and install a sticker after completing your inspection. ♦ Check if operator uses a **campaign notification system**. If yes, obtain copies of their latest campaign bulletins. ♦ Check all items listed on DVIR (**Driver's Vehicle Inspection Report**). Inspect all items and make maintenance or repair recommendations to maintenance provider or maintenance technician staff. ♦ Check if **license and permit** stickers are in proper place and up to date. ♦ Check if there are any **special ordered parts** for the vehicle. If yes, advise maintenance provider supervisor.

	♦ Check operation of **cab gauges**. Record engine temperature and oil pressure on inspection check sheet. ♦ Check **clutch** and clutch brake operation on manual clutch system. ♦ Check cab **cosmetics and accessories** for security and operation. ♦ Check all **safety equipment**. For interstate use check to ensure there are a minimum of the following aboard: • Three approved safety reflectors • Spare fuses • Up to date fire extinguisher of the proper type • Hazardous weather equipment in good condition ♦ Check vehicle for **general damage and physical appearance**. • Check wheels, body, frame, and cab for damage. • Check for torn or bent bumpers • Check for holes in box • Check condition of decals and paint. Look for rust. ♦ Check **radiator** for leakage and blockage. • Check for bent cooling fins. • Check for bugs ♦ Check **lift gate** assembly • Check operation • Check for broken or missing parts and bolts • Check for worn or missing rollers

	• Check hydraulic lines and valves. • Check safety devices ♦ Check condition of dunnage/ **cargo box** / body • Check door seals • Check lock mechanism for alignment • Check interior light for operation • Check for holes or light leakage ♦ Check, if installed, the **refrigeration unit**. *(Design a separate check sheet.)* • Check for physical damage • Check belts and idler for wear and proper tension • Check unit operation (Start and warm-up unit. Check oil pressure, ammeter and coolant temperature) • Check suction gauge • Check defrost cycle • Check air defrost switch calibration • Check start / stop or fuel saver system • Check and record high and low speeds of unit • check gauges and instrument functionality • Check unit compressor for leaks and fluid pressure • Check unit air filters • Check unit engine coolant and condition • Check box air chute and bulkhead condition • Check damper and evaporator operation

	• Check interior floor condition • Check thermometer and thermostat operation • Check thermostat auto shutoff • Check refrigeration unit electrical standby system for correct operation • Check automatic reefer shut down system for proper operation • Check unit engine operation and tune-up limits ♦ Check vehicle **radiator** \ cooling system condition, antifreeze level, and fill level. ♦ Check all **drive belts** for condition and tension. ♦ Check idler hub and related accessories ♦ Check for **leaks** from engine, transmission, differential, transfer case, power steering, and hydraulic fluid reservoirs. ♦ Check engine **crankcase breather vent** for obstructions and cleanliness. ♦ Check **engine mounts** and **engine damper** condition. ♦ Check truck **cab lift system** for operation and soundness. ♦ Check **glad-hand** security, operation, seals, and springs. ♦ Check **shackles, U-bolts, springs, air bags and stabilizer bushings**. ♦ Check **transmission mounts** and **starter cable** / wire. ♦ Check alternator and starter. ♦ Check **differential oil level**. • Look for metal particles and oil condition.

	♦ Check internal differential filter. ♦ Check for any **fluid leaks**. ♦ Check steering axle **wheel bearings**, seals and lube. ♦ Check engine **emission control** system ♦ Check **battery** condition. ♦ Check diesel engine **tune-up** specification. ♦ Check **wheel alignment**. ♦ Check **tire balance**. ♦ Check cab air **conditioning** and **heating** system operation ♦ Check for smooth **engine operation**. ♦ Check for smooth automatic and manual **transmission shifting** action. ♦ Check for unusual **noises**.

Review the Maintenance Manuals for the manufacture, make and model motor vehicle you most often complete safety and operational maintenance inspections on and list other items that are important to check during a quality maintenance and/or safety inspection.

_____

_____

_____

_____

KNOWLEDGE TEST

Commercial Motor Carrier Vehicle Safety Inspector

Knowledge Assessment

Following are a set of knowledge assessment questions and situations that you can use to determine how much of the preceding knowledge about vehicle safety inspections you have retained. Select, key-in, or write the most correct answer to each question or situation. Questions have been taken from this self-study learning program and DOT Safety Regulations referenced in the Forward of this program.

Once you have completed the quiz you should notify your resource person in order to discuss your training, test answers, and certification procedure.

A (Mr. Ms. Mrs.) _____ will be your test evaluator and resource person. You can contact them by e-mail at _____, fax at _____ or by telephone at ( ) _____.

---

1. Which of the following commercial motor vehicle systems must be inspected at a minimum during a DOT approved safety inspection?

   a. Brakes, Suspension, Windshield Wipers and Loading Devices
   b. Safety and Emergency Equipment
   c. Frames, Wheels and Rims
   a. All of the above

2. In order for an individual to become a DOT “qualified” commercial motor vehicle safety inspector he/she can verify the following requirements?

   a. The completion of a State or Federal sponsored training program.
   b. Have worked in any capacity for a national transportation company.
   c. Have worked for a State Automobile Inspection Department station.
   d. Have attended a State or Federal sponsored training program.

3. When a commercial motor carrier operator puts a new motor vehicle into service how many months can the vehicle be operated before the first periodic safety inspection is required by DOT Safety Regulations?

   a. Twelve months.
   b. Three months.
   c. Zero months.
   d. One month.

4. What basic identification information is required to be included in the DOT compliant commercial motor vehicle safety inspection report?

   a. The name of the vehicle driver.
   b. The name of the carrier operating the vehicle.
   c. The make and model of the vehicle.
   d. A list of systems not inspected.

5. How many sets of the vehicle safety inspection report have to be made?

   a. Nine (an original and eight copies)
   b. Three (an original and two copies)
   c. Two (an original and one copy)
   d. One (an original and no copies)

6. What is the primary objective and purpose of commercial motor vehicle safety inspections?

   a. To reduce vehicle maintenance.
   b. To extend the life of the vehicle.
   c. To provide DOT with information about the vehicle.
   d. To ensure public safety.

7. What DOT Part of the Safety Regulations can one locate the requirements for items to be included in a DOT compliant safety inspection on commercial motor vehicles?

   a. DOT Safety Regulation Section 396.
   b. DOT Safety Regulation Section 393.
   c. DOT Safety Regulation Section 394.
   d. DOT Safety Regulation Section 395.

8. Does DOT have safety regulations that apply to specific systems on a commercial motor vehicle?

   a. Yes.
   b. No.
   c. Under some circumstances.
   d. Only when it is a Class 8 vehicle.

9. What is the minimum height from the road surface that a truck trailer rear side marker light must be located?

   a. Thirty-six inches.
   b. Twelve inches.
   c. Fifteen inches.
   d. No requirement.

10. The commercial motor vehicle emergency brake system must be separate from the service brake system.

    a. True
    b. False

11. Some cracks are allowed in windshields of commercial motor vehicles. What are the two exceptions?

    a. Any crack not directly in the forward line of sight of the driver.
    b. Any crack not more than three-quarters of an inch, if closer than three inches to any other such damaged area.
    c. Any crack not more than three-quarters of an inch, if not intersected by another crack.
    d. No cracks are allowed in commercial motor vehicle windshields.

12. Commercial motor vehicle fuel tank drain fittings or plugs must not extend more than how many inches below the bottom lowest point of the tank(s)?

    a. Zero inches.
    b. One-half inch.
    c. One full inch.
    d. Three-quarters inch.

13. How must visible fuel tanks on commercial motor vehicle be marked or labeled?

    a. Certificate that the fuel tank conforms to DOT rules.
    b. Plainly marked with its liquid capacity.
    c. Manufacturers name if built before 6/1/88.
    d. a, and b above.

14. Commercial motor vehicles must be equipped with a seat belt assembly and one left side rear view mirror.

    a. True
    b. False

15. Which of the following emergency equipment items does DOT Safety Regulations not require to be aboard and properly working on commercial motor vehicles?

    a. One or more fire extinguishers depending on the type of operation.
    b. At least one spare fuse for each type installed on the vehicle.
    c. Two fire extinguishers are required on all commercial motor vehicles.
    d. Warning devices (Flares, reflector triangles, flags or lights)

16. When mounting a fifth wheel bottom half to the commercial motor vehicle one DOT accepted method is to drill holes in the top rail flange and install high strength bolts, washers and lock nuts to 90 foot pounds of torque.

    a. True
    b. False

17. An air system leak must not be greater than 3 PSI in a 5-minute time period when the commercial motor vehicles air pressure gauge shows normal operating pressure.

    a. True
    b. False

18. DOT Safety Regulations require drivers of commercial motor vehicles to complete a DVIR on either a trip or daily basis. What items are not required at a minimum to be covered on the DVIR?

    a. Air Conditioning and Heating System.
    b. Horn system
    c. Rear view mirrors
    d. Coupling system

19. What is not cause for rejection of a commercial motor vehicle during a safety inspection?

    a. Any out of date DOT required safety item.
    b. Any inoperable DOT required safety item.
    c. Any dirty or oily DOT required safety item.
    d. Any missing DOT required safety item.

20. On wedge brakes air chamber sizes and slack adjuster lengths should, but do not have to, match in order to comply with DOT Safety Regulations.

    a. True
    b. False

21. On parking brakes what is meant by “flexural cracks”? When and where are flexural cracks permitted by DOT Safety Regulations?

    a. Flexural cracks are cracks that open when the part flexes under stress. Flexural cracks are not permitted on service brakes.
    b. Flexural or hairline cracks open when flexed under stress. Both flexural and hairline crack are never permitted on any brake system.
    c. Flexural or hairline cracks open when flexed under stress. Neither flexural or hairline cracks are never permitted on parking brakes
    d. Flexural cracks are cracks that open when the part flexes under stress. Flexural cracks are not permitted on parking brakes.

22. On hydraulic brakes the master cylinder must be highlighted during a safety inspection to add fluid when it is observed to be less than one quarter of an inch low.

    a. True
    b. False

23. What should the safety inspector do if it is found that the hydraulic brake master cylinder on a commercial motor vehicle is less than half full during a safety inspection?

    a. Add fluid immediately
    b. Check for water in system
    c. Nothing as long as it is at least ¼ full
    d. Check for fluid evaporation

24. If during a safety inspection the inspector observes a hydraulic brake hose or line swelling during brake application he/she should write up the condition and recommend the maintenance technician make a splice using stainless steel clamps and a short length of copper tubing with the same OD as the system ID.

    a. True
    b. False

25. On fifth wheels DOT Safety Regulations permit horizontal movement between the pivot bracket pin and the bracket of no more than one half inch.

    a. True
    b. False

26. On trailer axle sliders DOT Safety Regulations permit movement of not more than 3/8 of an inch (0.375 inch) between the slider bracket and the slider base.

    a. True
    b. False

27. When the safety inspector finds a small crack in the vehicle's coupling device pintle hook he/she should write up the condition and recommend to the maintenance technician that he/she should have the cracked pintle hook welded before it goes back into service.

    a. True
    b. False

28. When the inspector observes during a safety inspection that there is only one coupling device safety chain attached to the centerline of the commercial motor vehicle he/she should take what action?

    a. No action should be taken because a single chain/cable coupling safety device arrangement can be installed if it is sufficiently strong.
    b. Fail the vehicle because only one chain/cable is installed and two are required on all commercial vehicles.
    c. Immediately notify the owner/operator of the condition and finish the safety inspection when they have installed two chains/cables.
    d. Write up the safety violation and recommend corrective action to the maintenance department.

29. No part of the exhaust system of any commercial motor vehicle can be so located as would be likely to result in burning, charring, or damage to the electrical wiring, the fuel supply, or any combustible part of the vehicle.

    a. True
    b. False

30. Steering wheel free play on all commercial motor vehicles must be within two inches.

    a. True
    b. False

31. Steering mechanisms on commercial motor vehicles with more than one fourth of an inch of motion other than rotation in any linkage is cause for rejection by the safety inspector.

    a. True
    b. False

32. Tires on the steering axle of a commercial motor vehicle with less than four thirty seconds of an inch when measured at any point on a major tread groove is cause for rejection during a safety inspection.

    a. True
    b. False

33. Re-grooved tires are never acceptable on commercial motor vehicles except they may be used in urban or suburban service.

    a. True
    b. False

34. It is alright to use mixed bias and radial tires on the same axle on commercial motor vehicles during urban cool weather operations.

    a. True
    b. False

35. The windshields of commercial motor vehicles must be replaced or repaired if a crack is one eighths of an inch in size.

    a. True
    b. False

36. What are five findings with emergency equipment that will require rejection of a commercial motor vehicle during a DOT safety inspection?

    a. No or insufficient equipment, inoperable equipment, missing clearance lights, loose rear view mirrors and worn mud flaps.
    b. No or insufficient equipment, inoperable equipment, missing clearance lights, dirty rear view mirrors and missing mud flaps.
    c. No or insufficient equipment, inoperable equipment, missing clearance lights, loose rear view mirrors and missing mud flaps.
    d. No or insufficient equipment, inoperable equipment, dim clearance lights, loose rear view mirrors and missing mud flaps.

37. The safety inspector can get organized to provide high quality and cost effective inspection services to his/her commercial motor vehicle operator client by doing the following?

    a. Develop a Safety Inspection Action Plan
    b. Make and use a Safety Inspection Check Sheet
    c. Hiring assistants to do the safety inspection report paperwork.
    d. a and b above.

38. Following are 10 commercial motor vehicle systems that the safety inspector can concentrate on individually in order to be more concise and complete during a periodic inspection. Is it more effective to concentrate on the whole vehicle or each system during a safety inspection?
    - Cab compartment
    - Walk around lighting
    - Battery compartment
    - Powerplant compartment
    - Engine tune-up status
    - Wheel/Tire assemblies
    - Brake Assemblies
    - Chassis
    - Alignment
    - Lube/Oil check

    a. It is more effective to concentrate on the whole vehicle.
    b. It is more effective to concentrate on each system.

39. Why would the safety inspector make a decision to conduct a cab compartment inspection immediately after he/she has driven the motor vehicle into the safety inspection bay?

    a. He/She is already in the cab, why waste time getting back into the cab later.
    b. The most important items on a safety inspection are located in the cab.
    c. All the systems have to be checked from the cab first like lights, horn, a/c and heating, mirrors, windshield wipers, etc.
    d. a, and b above.

40. Could the safety inspector conduct a “walk around” inspection during a DOT safety inspection of a commercial motor vehicle?

    a. Yes
    b. No

41. What would the safety inspector be looking for in the commercial motor vehicle battery compartment?

    a. Loose battery post clamps.
    b. Corrosion and cable insulation cuts and rubs.
    c. Overall battery condition.
    d. All of the above

42. During a safety inspection of a commercial motor vehicle that is used to tow cargo trailers the maximum tracking limit between the towing and towed vehicles in a straight line is two inches.

    a. True
    b. False

43. If no discernable tire wear is observable on a commercial motor vehicle front axle tires during a safety inspection a toe-in \ tow-out check is not needed.

    a. True
    b. False

44. During a DOT Safety Regulations mandated inspection more items can be inspected and serviced than DOT requires but not less than those listed in DOT Safety Regulations 396.

    a. True
    b. False

45. Additional inspection items may be included during the safety inspection of a commercial motor vehicle. List at least ten items that would contribute to the extension of service and maintenance intervals of commercial motor vehicles.

    a. Transmission mounts, engine mounts, engine vibration damper.
    b. Engine oil leaks, transmission fluid leaks, power steering fluid leaks.
    c. Parking brake operation, axles and differentials, drive shafts, U-joints, slip yokes, springs and spring bolts, spring shackles, spring hangers, chassis to cab mounting, exhaust system mounting, exhaust system condition, steering system and kingpin ball joint wear.
    d. All of the above

46. The astute safety inspector should look for, feel for, and listen to the noises the vehicle makes when he/she conducts a road test of a commercial motor vehicle they have just finished inspecting but is this a good safety inspection practice?

    a. Yes
    b. No

47. Do you have a copy of the DOT Safety Regulation handbook?

    a. Yes
    b. No

48. Where and how would you locate the address of a source for ordering a DOT Safety Regulation handbook?

    a. In this self-study training guide
    b. In the DOT Safety Regulations
    c. In the vehicle manufacturer's operator guide
    d. a and b above

49. Describe how DOT defines an "in-service" and an "out-of-service" commercial motor vehicle.

    a. "In-service" is any commercial motor vehicle that has successfully passed the DOT Safety Regulations safety inspection requirement.
    b. "Out-of-service" is any vehicle that by reason of its mechanical condition or loading condition would likely cause an accident or a breakdown.
    c. "In-service" is any vehicle that is used to haul freight for hire and "out-of-service" is any commercial motor vehicle that has been overloaded.
    d. a, and b above.

50. What is the DOT's definition of a "periodic inspection"?

    a. A commercial motor vehicle that receives a safety inspection periodically.
    b. A commercial motor vehicle that has received a safety inspection within the past 12 months.
    c. Any vehicle that has bee inspected during a 12-month period.
    d. a, and c above.

SELF-STUDY PROGRAM EVALUATION

Please complete the following questionnaire on this Transportation University training and professional development self-study program. A few minutes of your time will help P-BIT Design update and improve the contents. Please mail, fax or e-mail this page to the address at the bottom of this page. Thank You!

Could you quickly find what you needed? Yes: _____ No: _____

Suggestions?_____

_____

_____

Did you find any errors? Yes: _____ No: _____

If "yes" please give page numbers: _____

Describe errors found: _____

_____

_____

Were any subjects not covered? Yes: _____ No: _____

If "yes" please describe: _____

_____

_____

Were any sections confusing or hard to understand? Yes: _____ No: _____

If "yes" list page numbers: _____

Tell us who you are:

Name: _____

Address:_____

Telephone: _____

Thanks for helping us improve the quality and accuracy of this motor vehicle training!

P-BIT Design
albarrs@wfeca.net

RESOURCE PERSON'S KNOWLEDGE TEST GRADING KEY

1. d	**26. a**
2. a	**27. b**
3. c	**28. a**
4. b	**29. a**
5. c	**30. b**
6. d	**31. a**
7. a	**32. a**
8. a	**33. a**
9. c	**34. b**
10. a	**35. b**
11. b	**36. c**
12. d	**37. d**
13. d	**38. b**
14. b	**39. a**
15. c	**40. a**
16. b	**41. d**
17. a	**42. b**
18. a	**43. b**
19. c	**44. a**
20. b	**45. d**
21. d	**46. a**
22. b	**47. a**
23. c	**48. d**
24. b	**49. d**
25. b	**50. b**

RESOURCE PERSON'S
DISCUSSION AND COUNSELING RESOURCES
TMTVI001.DOC LEARNING GUIDE KEYED

1. TMTVI001.DOC Page 3:

Which of the following commercial motor vehicle systems must be inspected at a minimum during a DOT approved safety inspection?

a. Brakes, Suspension, Windshield Wipers and Loading Devices
b. Safety and Emergency Equipment
c. Frames, Wheels and Rims
d. All of the above

- **Brake System**
- **Coupling Devices**
- **Exhaust System**
- **Fuel System**
- **Lighting Devices**
- **Safe Loading Devices**
- **Steering Mechanism**
- **Suspension**
- **Frame**
- **Tires**
- **Wheels and Rims**
- **Windshield Glazing**
- **Windshield Wipers**
- **Safety\Emergency Equipment**

2. TMTVI001.DOC Page 20:

In order for an individual to become a DOT "qualified" commercial motor vehicle safety inspector he/she can verify the following requirements?

a. **The completion of a State or Federal sponsored training program.**
b. Have worked in any capacity for a national transportation company.
c. Have worked for a State Automobile Inspection Department station.
d. Have attended a State or Federal sponsored training program.

	Must understand the inspection criteria set forth in 49 CFR Part 393 and Appendix G and can identify defective truck components.
	Must be knowledgeable and skilled in the methods, procedures, tools and equipment used when performing an inspection.
	Must be capable of performing an inspection by reason of training, experience, <u>or</u> must have successfully completed a State or Federal sponsored training program. **c. Must have a certificate from a State that qualifies individuals to perform safety inspections.** **d. Must in addition have a combination of training and / or experience of at least one full year.** **Training and / or experience must include the following.** • **Must have completion of a truck manufacture or similar commercial training program designed to train individuals in truck operation and maintenance.** • **Must have experience as a maintenance technician / mechanic or inspector in truck maintenance at a commercial garage (maintenance provider), fleet leasing company, or similar facility; or** • **Must have experience as a commercial vehicle inspector for a State or the Federal Government.**

3. TMTVI001.DOC Page 3:

When a commercial motor carrier operator puts a new motor vehicle into service how many months can the vehicle be operated before the first periodic safety inspection is required by DOT Safety Regulations?

a. Twelve months.
b. Three months.
c. **Zero months.**
d. One month.

None! The vehicle must pass a safety inspection that includes <u>all</u> the items listed in DOT Safety Regulations.

4. **TMTVI001.DOC Page 4:**

What basic identification information is required to be included in the DOT compliant commercial motor vehicle safety inspection report?

a. The name of the vehicle driver.
b. The name of the carrier operating the vehicle.
c. The make and model of the vehicle.
d. A list of systems not inspected.

The name of the individual performing the inspection
The name of the motor carrier operating the vehicle
The date of the inspection
The vehicle's identification number
The vehicle components or systems inspected
The safety inspector shall certify the accuracy and completeness of the inspection

5. TMTVI001.DOC Page 4:

How many sets of the vehicle safety inspection report have to be made?

a. Nine (an original and eight copies)
b. Three (an original and two copies)
c. Two (an original and one copy)
d. One (an original and no copies)

Two (An original and one copy):

- **The vehicle operator or maintenance provider must retain one copy and one copy must be retained where the vehicle is domiciled, regularly parked, or maintained.**
- **They must be retained for fourteen months from the date of the safety inspection.**

6. TMTVI001.DOC Page 16:

What is the primary objective and purpose of commercial motor vehicle safety inspections?

a. To reduce vehicle maintenance.
b. To extend the life of the vehicle.
c. To provide DOT with information about the vehicle.
d. To ensure public safety.

Safety!

7. TMTVI001.DOC Page 19:

What DOT Part of the Safety Regulations can one locate the requirements for items to be included in a DOT compliant safety inspection on commercial motor vehicles?

a. **DOT Safety Regulation Section 396.**
b. DOT Safety Regulation Section 393.
c. DOT Safety Regulation Section 394.
d. DOT Safety Regulation Section 395.

DOT Safety Regulations Section 396
Specifically Section 396.3, 5, 9, 17, 19, 2123, and 25

8. TMTVI001.DOC Page 21-22:

Does DOT have safety regulations that apply to specific systems on a commercial motor vehicle?

a. **Yes.**
b. No.
c. Under some circumstances.
d. Only when it is a Class 8 vehicle.

Brakes
Windshields and Windows
Fuel Systems
Coupling Devices
Miscellaneous Parts and Accessories
Emergency Equipment
Protection against Shifting or Falling Cargo
Frames, Cab and Body Components, Wheels, Steering and suspension systems

9. TMTVI001.DOC Page 21:

What is the minimum height from the road surface that a truck trailer rear side marker light must be located?

a. Thirty-six inches.
b. Twelve inches.
c. **Fifteen inches.**
d. No requirement.

Between fifteen and sixty inches

10. TMTVI001.DOC Page 23:

The commercial motor vehicle emergency brake system must be separate from the service brake system.

a. **True**
b. False

11. TMTVI001.DOC Page 24:

Some cracks are allowed in windshields of commercial motor vehicles. What are the two exceptions?

a. Any crack not directly in the forward line of sight of the driver.
b. **Any crack not more than three-quarters of an inch, if closer than three inches to any other such damaged area.**
c. Any crack not more than three-quarters of an inch, if not intersected by another crack.
d. No cracks are allowed in commercial motor vehicle windshields.

- **Any crack not over one quarter of an inch wide, if not intersected by any other crack.**
- **Any damaged area not more than three-quarters of an inch, if closer than three inches to any other such damaged area.**

12. TMTVI001.DOC Page 24:

Commercial motor vehicle fuel tank drain fittings or plugs must not extend more than how many inches below the bottom lowest point of the tank(s)?
a. Zero inches.
b. One-half inch.
c. One full inch.
d. **Three-quarters inch.**

13. **TMTVI001.DOC Page 24:**

How must visible fuel tanks on commercial motor vehicle be marked or labeled?

a. Certificate that the fuel tank conforms to DOT rules.
b. Plainly marked with its liquid capacity.
c. Manufacturers name if built before 6/1/88.
d. a, and b above.

- **Month and year manufactured**
- **Manufacturers name (after 6\1\88) and a means of identifying the facility where the tank was manufactured**
- **Certificate that the fuel tank conforms to DOT rules**
- **Must be plainly marked with its liquid capacity**
- **Warning against filling the tank to more than 95 percent of its liquid capacity**

14. TMTVI001.DOC Page 26:

Commercial motor vehicles must be equipped with a seat belt assembly and one left-side rear view mirror.

a. True
b. False

Two rear view mirrors are required with one on each side of the cab.

15. TMTVI001.DOC Page 27:

Which of the following emergency equipment items does DOT Safety Regulations not require to be aboard and properly working on commercial motor vehicles?

a. One or more fire extinguishers depending on the type of operation.
b. At least one spare fuse for each type installed on the vehicle.
c. Two fire extinguishers are required on all commercial motor vehicles.
d. Warning devices (Flares, reflector triangles, flags or lights)

- **One fire extinguisher and two if truck transports "hazardous" materials**
- **At least one spare fuse for each "type" installed on the vehicle**
- **Warning devices (Flares, reflector triangles, flags or lights)**

16. TMTVI001.DOC Page 28:

When mounting a fifth wheel bottom half to the commercial motor vehicle one DOT accepted method is to drill holes in the top rail flange and install high strength bolts, washers and lock nuts to 90 foot pounds of torque.

a. True
b. False

Holes are not allowed to be drilled in the top or bottom of frame rail flanges except where specified by the truck manufacturer.

17. TMTVI001.DOC Page 29:

An air system leak must not be greater than 3 PSI in a 5-minute time period when the commercial motor vehicles air pressure gauge shows normal operating pressure.

a. **True**
b. False

18. TMTVI001.DOC Page 32:

DOT Safety Regulations require drivers of commercial motor vehicles to complete a DVIR on either a trip or daily basis. What items are not required at a minimum to be covered on the DVIR?

a. **Air Conditioning and Heating System.**
b. Horn system
c. Rear view mirrors
d. Coupling system

- **Service brakes**
- **Lighting system**
- **Windshield Wipers**
- **Wheels and rims**
- **Parking brake**
- **Tires**
- **Mirrors**
- **Emergency equipment**
- **Steering**
- **Horn**
- **Coupling**

19. TMTVI001.DOC Page 32:

What is not cause for rejection of a commercial motor vehicle during a safety inspection?

a. Any out of date DOT required safety item.
b. Any inoperable DOT required safety item.
c. **Any dirty or oily DOT required safety item.**
d. Any missing DOT required safety item.

Any out of date, inoperable or missing item required to be on board by DOT Safety Regulations.

20. TMTVI001.DOC Page 34:

On wedge brakes air chamber sizes and slack adjuster lengths should, but do not have to, match in order to comply with DOT Safety Regulations.

a. True
b. False

Sizes and lengths should match.

21. TMTVI001.DOC Page 35:

On parking brakes what is meant by "flexural cracks"? When and where are flexural cracks permitted by DOT Safety Regulations?

a. Flexural cracks are cracks that open when the part flexes under stress. Flexural cracks are not permitted on service brakes.
b. Flexural or hairline cracks open when flexed under stress. Both flexural and hairline crack are never permitted on any brake system.
c. Flexural or hairline cracks open when flexed under stress. Neither flexural or hairline cracks are never permitted on parking brakes
d. Flexural cracks are cracks that open when the part flexes under stress. Flexural cracks are not permitted on parking brakes.

- **Cracks that open when the part or unit flexes under stress**
- **Flexural cracks are not permitted on parking brakes. Do not confuse short "hairline" heat cracks with flexural cracks.**

22. TMTVI001.DOC Page 36:

On hydraulic brakes the master cylinder must be highlighted during a safety inspection to add fluid when it is observed to be less than one quarter of an inch low.

a. True
b. False

Master cylinders must be maintained at not less than one quarter full by volume

23. TMTVI001.DOC Page 36:

What should the safety inspector do if it is found that the hydraulic brake master cylinder on a commercial motor vehicle is less than half full during a safety inspection?

a. Add fluid immediately
b. Check for water in system
c. Nothing as long as it is at least ¼ full
d. Check for fluid evaporation

It's OK as long as it is at least ¼ full by volume. The inspector should highlight the system for further investigation by the maintenance technician, because fluid may be leaking out of the system some place or the pads/shoes are excessively worn allowing a greater volume of fluid to be retained in the wheel cylinders.

24. TMTVI001.DOC Page 35:

If during a safety inspection the inspector observes a hydraulic brake hose or line swelling during brake application he/she should write up the condition and recommend the maintenance technician make a splice using stainless steel clamps and a short length of copper tubing with the same OD as the system ID.

a. True
b. False

Never splice a hydraulic brake hose or line with tubing and clamps!

25. TMTVI001.DOC Page 38:

On fifth wheels DOT Safety Regulations permit horizontal movement between the pivot bracket pin and the bracket of no more than one half inch.

a. True
b. False

Movement can be no more than three eighths of one inch

26. TMTVI001.DOC Page 39:

On trailer axle sliders DOT Safety Regulations permit movement of not more than 3/8 of an inch between the slider bracket and the slider base.

a. **True**
b. False

27. TMTVI001.DOC Page 40:

When the safety inspector finds a small crack in the vehicle's coupling device pintle hook he/she should write up the condition and recommend to the maintenance technician that he/she should have the cracked pintle hook welded before it goes back into service.

a. True
b. False

No welding is permitted on pintle hooks

28. TMTVI001.DOC Page 25 & 41:

When the inspector observes during a safety inspection that there is only one coupling device safety chain attached to the centerline of the commercial motor vehicle he/she should take what action?

a. **No action should be taken because a single chain/cable coupling safety device arrangement can be installed if it is sufficiently strong.**
b. Fail the vehicle because only one chain/cable is installed and two are required on all commercial vehicles.
c. Immediately notify the owner/operator of the condition and finish the safety inspection when they have installed two chains/cables.
d. Write up the safety violation and recommend corrective action to the maintenance department.

Take no action if the safety chain or cable is sufficiently strong and is in good condition so long as it is attached to the centerline of both vehicles.

29. TMTVI001.DOC Page 42:

No part of the exhaust system of any commercial motor vehicle can be so located as would be likely to result in burning, charring, or damage to the electrical wiring, the fuel supply, or any combustible part of the vehicle.

a. **True**
b. False

30. TMTVI001.DOC Page 43:

Steering wheel free play on all commercial motor vehicles must be within two inches.

a. True
b. False

Steering wheel free play limit depends on the diameter of the steering wheel and whether the system is manual or power steering.

31. TMTVI001.DOC Page 43:

Steering mechanisms on commercial motor vehicles with more than one fourth of an inch of motion other than rotation in any linkage is cause for rejection by the safety inspector.

a. **True**
b. False

32. TMTVI001.DOC Page 45:

Tires on the steering axle of a commercial motor vehicle with less than four thirty seconds of an inch when measured at any point on a major tread groove is cause for rejection during a safety inspection.

a. **True**
b. False

33. TMTVI001.DOC Page 46:

Re-grooved tires are never acceptable on commercial motor vehicles except they may be used in urban or suburban service.

a. **True**
b. False

34. TMTVI001.DOC Page 46:

It is alright to use mixed bias and radial tires on the same axle on commercial motor vehicles during urban cool weather operations.

a. True
b. False

Weather has nothing to do with it.

35. TMTVI001.DOC Page 47:

The windshields of commercial motor vehicles must be replaced or repaired if a crack is one eighths of an inch in size.

a. True
b. False

- **Any crack not over one quarter of an inch wide, if not intersected by any other crack**
- **Any damaged area not more than three-quarters of an inch, if closer than three inches to any other such damaged area**

36. TMTVI001.DOC Page 47:

What are five findings with emergency equipment that will require rejection of a commercial motor vehicle during a DOT safety inspection?

a. No or insufficient equipment, inoperable equipment, missing clearance lights, loose rear view mirrors and worn mud flaps.
b. No or insufficient equipment, inoperable equipment, missing clearance lights, dirty rear view mirrors and missing mud flaps.
c. **No or insufficient equipment, inoperable equipment, missing clearance lights, loose rear view mirrors and missing mud flaps.**
d. No or insufficient equipment, inoperable equipment, dim clearance lights, loose rear view mirrors and missing mud flaps.

- **No or insufficient equipment**
- **Inoperable equipment**
- **Missing clearance lights**
- **Loose rear view mirror**
- **Missing mud flaps**

37. TMTVI001.DOC Page 48:

The safety inspector can get organized to provide high quality and cost effective inspection services to his/her commercial motor vehicle operator client by doing the following?

a. Develop a Safety Inspection Action Plan
b. Make and use a Safety Inspection Check Sheet
c. Hiring assistants to do the safety inspection report paperwork.
d. a, and b above.

- **Develop a Safety Inspection Action Plan**
- **Make and use a Safety Inspection Check Sheet**

38. TMTVI001.DOC Page 52:

Following are 10 commercial motor vehicle systems that the safety inspector can concentrate on individually in order to be more concise and complete during a periodic inspection. Is it more effective to concentrate on the whole vehicle or each system during a safety inspection?

- Cab compartment
- Walk around lighting
- Battery compartment
- Powerplant compartment
- Engine tune-up status
- Wheel/Tire assemblies
- Brake Assemblies
- Chassis
- Alignment
- Lube/Oil check

a. It is more effective to concentrate on the whole vehicle.
b. **It is more effective to concentrate on each system.**

39. TMTVI001.DOC Page 53:

Why would the safety inspector make a decision to conduct a cab compartment inspection immediately after he/she has driven the motor vehicle into the safety inspection bay?

a. **He/She is already in the cab, why waste time getting back into the cab later.**
b. The most important items on a safety inspection are located in the cab.
c. All the systems have to be checked from the cab first like lights, horn, a/c and heating, mirrors, windshield wipers, etc.
d. a, and b above.

40. TMTVI001.DOC Page 54:

Could the safety inspector conduct a “walk around” inspection during a DOT safety inspection of a commercial motor vehicle?

a. **Yes**
b. No

Light items, look for physical damage, leaking axle hubs, fuel tank hardware, fifth shell and lock, radiator and air condensers, cab tilt mechanism and any other visible item he/she chooses to include.

41. TMTVI001.DOC Page 55:

What would the safety inspector be looking for in the commercial motor vehicle battery compartment?

a. Loose battery post clamps.
b. Corrosion and cable insulation cuts and rubs.
c. Overall battery condition.
d. All of the above

Loose clamps, corrosion, cable insulation cuts and rubs, and battery condition should be checked.

42. TMTVI001.DOC Page 25:

During a safety inspection of a commercial motor vehicle that is used to tow cargo trailers the maximum tracking limit between the towing and towed vehicles in a straight line is two inches.

a. True
b. False

Three inches in a straight line

43. TMTVI001.DOC Page 29 & 61:

If no discernable tire wear is observable on a commercial motor vehicle front axle tires during a safety inspection a toe-in \ tow-out check is not needed.

a. True
b. False

A tow-in/tow-out check is a part of the "alignment check" required by DOT Safety Regulations

44. TMTVI001.DOC Page 2:

During a DOT Safety Regulations mandated inspection more items can be inspected and serviced than DOT requires but not less than those listed in DOT Safety Regulations 396.

a. **True**
b. False

45. TMTVI001.DOC Page 60:

Additional inspection items may be included during the safety inspection of a commercial motor vehicle. List at least ten items that would contribute to the extension of service and maintenance intervals of commercial motor vehicles.

a. Transmission mounts, engine mounts, engine vibration damper.
b. Engine oil leaks, transmission fluid leaks, power steering fluid leaks.
c. Parking brake operation, axles and differentials, drive shafts, U-joints, slip yokes, springs and spring bolts, spring shackles, spring hangers, chassis to cab mounting, exhaust system mounting, exhaust system condition, steering system and kingpin ball joint wear.
d. All of the above

46. TMTVI001.DOC Page 62:

The astute safety inspector should look for, feel for, and listen to the noises the vehicle makes when he/she conducts a road test of a commercial motor vehicle they have just finished inspecting but is this a good safety inspection practice?

a. **Yes**
b. No

Steering, clutch, brake feel, transmission shifting, engine operation, cab and door rattles, heater and air conditioner operation, etc. all make noises the safety inspector can use to pinpoint problem areas under load.

47. TMTVI001.DOC Page 3:

Do you have a copy of the DOT Safety Regulation handbook?

a. **Yes**
b. No

If "no" you should have ordered a copy before starting this self-study However, it is not too late. go to page 2 of this self-study for address

48. TMTVI001.DOC Page 3:

Where and how would you locate the address of a source for ordering a DOT Safety Regulation handbook?

a. In this self-study training guide
b. In the DOT Safety Regulations
c. In the vehicle manufacturer's operator guide
d. a and b above

Either this self-study learning guide or in the DOT Safety Regulations Section 393.7

49. TMTVI001.DOC Page 16:

Describe how DOT defines an "in-service" and an "out-of-service" commercial motor vehicle.

a. "In-service" is any commercial motor vehicle that has successfully passed the DOT Safety Regulations safety inspection requirement.
b. "Out-of-service" is any vehicle that by reason of its mechanical condition or loading condition would likely cause an accident or a breakdown.
c. "In-service" is any vehicle that is used to haul freight for hire and "out-of-service is any commercial motor vehicle that has been overloaded.
d. a, and b above.

- **"In-service" is any commercial motor vehicle that has successfully passed the DOT Safety Regulations safety inspection requirements**
- **"Out-of-service" is any vehicle which by reason of its mechanical condition or loading condition would likely cause an accident or a breakdown**

50. TMTVI001.DOC Page 18:

What is the DOT's definition of a "periodic inspection"?

a. A commercial motor vehicle that receives a safety inspection periodically.
b. **A commercial motor vehicle that has received a safety inspection within the past 12 months.**
c. Any vehicle that has bee inspected during a 12-month period.
d. a, and c above.

Within the past 12 month period all DOT Safety Regulations systems, sub-systems, and related items shall be inspected by a qualified safety inspector

Disclaimer: *Regardless of what this or any other learning guide says the most recent DOT regulations and requirement must be followed…*

♣ END OF TMTVI001.DOC SELF-STUDY LEARNING GUIDE ♣

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