

VEHICLE MAINTENANCE PROGRAM AND PLAN GUIDANCE

The maintenance of vehicles is critical to cost containment in a transit system. First of all, an agency must have the appropriate number and class of vehicles to handle trip demand. Second the backup vehicle ratio must be adequate to ensure minimal disruption in service. And the number of additional vehicles required for maintenance activities can be minimized by scheduling most maintenance activities during non-peak vehicle periods.

A solid maintenance program and subsequent maintenance plan that documents procedures for how agency employees should maintain vehicles are vital to the sustainability of a transit organization. Your agency vehicle maintenance plan should include procedures for how your agency conducts the following outline items included in this document.

I. INITIATION OF A MAINTENANCE PROGRAM

If you are in the beginning stages, suggestions for initiating a maintenance program are:

- ADOT has a training module workbook and video from Office of Transit RTAP library entitled “Introduction to Preventive Maintenance – An Investment That Pays Off.” ADOT has numerous copies of this document that can be provided to your agency upon request.
- Obtain list of authorized maintenance facilities from vehicle vendor(s).
- Talk with transit systems that have established maintenance programs.
- Make use of maintenance software.
- Take advantage of training offered by professional transit organizations, vendors, manufacturers, etc.

II. MAINTENANCE ARRANGEMENTS:

Maintenance arrangements should be established in the initial planning stages of any transportation program. Maintenance can be arranged in various ways:

- Written contract with commercial mechanics.
- Written contract with other agencies: city/county/school bus system.

- Development of an in-house maintenance program.
- A combination of any of the above.

Several factors should be evaluated in deciding on a maintenance arrangement:

- Extent to which the transit system wants to maintain control over maintenance.
- Interest in using an employee as a mechanic to maintain control.
- Effectiveness of communication if service is provided in-house versus privately.
- Cost to the system.
- Availability of the proper facilities.
- Ability to recycle or dispose of oil/fluids.
- Availability of equipment to lift vehicles.
- Availability of a complete set of tools.

Whatever maintenance arrangements are determined, these arrangements are to be documented and available for all employees to view and familiar with. Your staff should especially be familiar with the procedures for vehicles still under warranty.

III. PREVENTIVE MAINTANCE/SCHEDULED MAINTENANCE

A regular preventive maintenance program improves vehicle performance and reliability, extends vehicle life, avoids costly breakdowns and reduces the number of backup vehicles needed. All transit providers should institute preventive maintenance and inspection programs to keep all vehicles in safe, reliable and functioning condition. Regular inspections are performed at different intervals to ensure monitoring of all vehicle components. The goal of an effective PM program is to ensure safety, minimize vehicle downtime, and unexpected breakdowns.

Scheduled maintenance is performed at predetermined inspection intervals. The intervals are usually determined by accumulated mileage, time or condition of specific parts. A basic maintenance schedule should be reviewed with drivers and mechanics. Mechanics should become familiar with the scheduled maintenance requirements for each of the transit system's vehicles. Most scheduled maintenance information, covering the chassis, bus and major subcomponents, can be found in the applicable owner's manuals. Some vendors and manufacturers offer training. Follow the manufacturer's maintenance schedule contained in the owner's manual.

Once your program is established, it should be documented in a maintenance plan document that provides an organized program of how to deal inspections, scheduled service, and immediate adjustments or repairs to increase vehicle safety, vehicle useful life and minimize mechanical

failures. Documentation should include procedures, contact information for specific mechanic that provide service, sample inspection forms, etc.

a. DAILY VEHICLE INSPECTION- PREVENTIVE MAINTENANCE

Daily vehicle inspections can detect problems at an early stage and are crucial to a successful preventive maintenance program. Prior to departure, the driver performs these inspections, and records the results on a Daily Vehicle Inspection Checklist. **A sample, along with procedures, is on page 7 and 8.** This information is from the Kansas DOT. Daily inspections are generally performed prior to and after a daily set of runs. Pre-trip inspections may be performed by the vehicle operator and post-trip inspections may be performed by the fueling staff or the vehicle operator. In instances where a different operator drives the bus during the day, inspections may be performed by each to check for repair needs resulting from the previous run.

Elements to be inspected in the pre-trip and post-trip inspections include:

- Lights and reflectors
- Brakes
- Horn
- Mirrors
- Windshield, wipers, washers, defroster
- Tires
- Speedometer
- Doors
- Fluids
- Emergency equipment
- Cleanliness
- Back-up alarms
- Wheelchair lifts
- Visual review of exterior condition

As a part of the daily inspection protocol, the transit provider should have Driver Vehicle Condition Report/Daily Defect Cards that operators can fill out to indicate vehicle problems discovered en-route.

Information on how your agency expects staff to conduct daily inspections, along with forms to be used, is to be documented in your maintenance plan.

b. PERIODIC INSPECTION – PREVENTIVE/SCHEDULED MAINTENANCE

Periodic inspections are designed to provide checks of all vehicle components, allowing adequate time for the repair of worn or broken parts. Inspection intervals should be determined based on the agency size and vehicle daily usage. (Larger agencies with heavy usage may elect to inspect vehicles more often than smaller systems with light loads.) Each successive inspection

includes all of the elements of the previous inspection (e.g. the C level inspection has its own elements, as well as those from A and B level inspections.)

- a. A Level Inspection – 3,000 Miles or Two Months
- b. B Level Inspection – 9,000 Miles or Six Months
- c. C Level Inspection – 24,000 Miles or Twelve Months
- d. D Level Inspection – 100,000 Miles – Major Overhaul

Detailed inspection forms should be developed for each of the inspections. Each form should include a checklist on which the mechanic can check off each element inspected. Preventive Maintenance activities are included in each of the inspections and include the replacement of worn parts, with larger repairs reserved for the less frequent inspections and more common parts scheduled for the frequent inspections. **Samples of these forms are on pages 9-19.** This information was provided by the Roaring Fork Transportation Authority.

Information on how your agency expects staff to conduct periodic inspections and scheduled maintenance, along with contact information regarding what mechanics/service providers are used to perform scheduled maintenance, vehicle manufacturer requirements for all bus components scheduled maintenance, and forms to be used, is to be documented in your maintenance plan.

IV. TREND ANALYSIS

In order to best understand the effectiveness of preventive maintenance, agencies should perform trends on the time between various repairs. Decreasing mileage intervals between repairs may indicate that a repair is not being performed properly. Increased parts usage may also indicate that a repair or inspection is not being completed effectively. Trend analyses may be performed in the following areas:

- Brake system
- Wheels
- Belts
- Fluids
- Steering components
- Electrical systems
- Transmission
- Drive train
- Engine
- Wheelchair lift
- Oil analysis
- Vehicle abuse
- Crash register

Agencies may choose to record maintenance activities electronically, in order to perform trend analyses more easily. While many smaller properties or bus maintenance facilities have managers who have “a feel” for the fleet, it is good practice to develop a protocol documented in

a maintenance plan for performing trend analyses to have data as a basis for reviewing vehicle maintenance.

V. UNSCHEDULED REPAIRS

Procedures for unscheduled repairs and how your staff should deal with these issues need to be created and documented. Especially critical is information on who to contact if the vehicle needs an immediate repair and is in service. This may vary according to whether or not a vehicle is under warranty. All safety-critical repairs must be performed before allowing the bus to re-enter passenger service.

VI. MAINTENANCE AUDIT

Constant monitoring and update of the maintenance program ensures that it is evolutionary and fits the needs of the transit provider based on new vehicles, new parts, or improved practices. Audits that the transit provider may consider to improve maintenance and maintenance conditions include:

- Facility design audit
- Safety and security audit – daily, weekly, monthly, annually
- Crash review
- Vehicle condition spot-check

VII. CLEANLINESS

Overall cleanliness is an important component to the safety of transit vehicles. Agencies are to set up procedures in the maintenance plan that addresses when and at what frequency staff is to clean the interior and exterior components of the vehicles.

VIII. RECORD KEEPING

A good maintenance program should include a comprehensive maintenance record or file for each vehicle in the transit system. This file provides:

- A quick reference guide.
- A complete history of repairs.
- A list of chronic problems.
- An indication of fuel consumption and mileage trends.
- A record of responsibility for repairs.
- A record of the amount of time a vehicle is out of service.

All transit vehicles should have a complete history that includes documentation of all repairs, inspections, and other related maintenance activities. Transit providers shall keep individual files for each vehicle in the fleet that contain the following information:

- Vehicle warranty information, where applicable

- · Completed daily defect cards
- · Completed A, B, and C level inspection forms
- · Work orders for repairs resulting from PM inspections
- · Work orders for unscheduled repairs
- · Forms indicating any other repairs, overhauls, or rehabilitations

SAMPLE DAILY VEHICLE PRE-TRIP INSPECTION CHECKLIST

DATE _____ SIGNATURE _____

Check	Requirement	Instructions	Comments
	General	Walk around the vehicle to inspect the cleanliness of windows, body and mirrors.	
	Tires	Check the tread depth, pressure and over all condition of all tires.	
	License Plate	Make sure that the license plate is attached securely and clean.	
	Windows and Mirrors	Verify that windows and mirrors are not cracked or broken.	
	Reflectors	Check to see that reflectors are in good condition.	
	Lights	Turn on head lights and four-way flashers. Make sure that all lamps illuminate. Check the high and low beams on the headlights.	
	Leaks	Look for water, oil, gas or transmission fluid leaks under the vehicle. If a leak is detected, report it immediately.	
	Battery	Check the fluid level if battery is not maintenance free. Make sure that cable connectors are tight and clean off any corrosion.	
	Belts	Verify that belts are not cracked or worn.	
	Hoses	Look for leaks. If a leak is detected, report it immediately. Make sure that hoses are not spongy and lifeless, brittle or cracked.	
	Oil	Verify that the oil level is between add and full. Fill, if low.	
	Radiator Level	Check to make sure that the reservoir is filled to the appropriate level.	
	Windshield Washer Fluid Level	Full.	

Sample Procedures for a Pre-Trip Inspection

Begin your inspection with the engine turned off.

1. Walk around the vehicle to inspect the body for damages. Look for any dents or cracks in the windshield or mirrors that might exist. Is the vehicle leaning to one side? If so, there may be a problem with the suspension.
2. Look underneath the vehicle. Inspect the ground for leaks and the undercarriage for loose parts.
3. Start the engine. Turn on the headlights and the four-way flashers. This should turn on all exterior lights. Check to see that the dash lights are on and both the high and low beams on your headlights are working. Walk around the vehicle to check each lamp.
4. Check the condition of all tires including the spare. Look for cracks, bubbles or nicks in the tire and measure the tread depth and pressure of the tires. The amount of air carried may be found on the side walls.
5. After thoroughly examining the exterior, check under the hood. Begin by turning off the engine. If, during your inspection, you find any item requiring maintenance, report it immediately.
6. Now, inspect the batteries. Check the fluid levels unless the batteries are maintenance free. Look for loose cable connectors. Tighten if loose and look for corrosion on the post connectors.
7. Examine the belts and hoses. Remember the engine could be hot. When pushed in the middle between pulleys, any belt should not compress more than one-half inch. Twist the belt and look for cracks and excess wear. Rubber hoses need a similar test. Squeeze the hose. If any hose appears spongy, hard to squeeze, brittle or has cracks, report it immediately.
8. Fluid levels need to be measured. Make certain that the radiator fluid, oil, power steering and windshield washer fluid reservoirs are filled. The transmission fluid should be checked when the engine is warm.
9. The final stage of the pre-trip inspection takes place inside the vehicle. Inspect the inside of the vehicle for loose objects and cleanliness.
10. Make sure that seatbelts and safety restraints are available and functioning.
11. Inventory all equipment to make sure that it is not only in place, but also functional.
12. Cycle the lift. Pay special attention to the wheelchair securement system and how it operates. Double check safety barriers and make sure the lift runs smoothly throughout the entire cycle.



1. Preventive Maintenance Program Overview

The Roaring Fork Transportation Authority's (RFTA) Vehicle Preventive Maintenance Program incorporates both mileage and time base inspection criteria. This is done to ensure that all vehicles are inspected on a regular and timely basis. When appropriate, multiple inspections can be done at the same time. By incorporating time and mileage intervals, RFTA is better able to address odd PM issues pertaining to exceptionally low use or high use vehicles.

Mileage based PM's are performed on 5,000 mile intervals and include four levels - 5,000 mile, 10,000 Mile, 25,000 Mile and 50,000 Mile Inspections. Time based PM's are done every two weeks (Biweekly) and twice a year (Seasonal). All mileage based PM's and the Seasonal PM's meet **ANNUAL DOT 49 CFR INSPECTION REQUIREMENTS IN ACCORDANCE WITH 49 CFR PARTS 396-17 THROUGH 396-23. All PM Inspections also ensure vehicles meet ADA requirements.**

The goal of the PM program is to meet the maintenance requirements specified by the vehicle manufacturer and minimize the potential for any unscheduled service and/or repairs between the service intervals.

Documentation of all PM Inspections is kept in a combination of electronic and paper format. All PM inspections are generated through RFTA's computer based maintenance information system, TRANSMAN®. Records are retained for the life of the vehicle.

**ADA CUT-AWAY VANS
A PM AND DOT 49 CFR INSPECTION
5,000 Miles**

"√" OK

Mech. _____

"X" Adjustment Made

Unit# _____

"O" Repairs Needed - Describe needed repairs

Mileage _____

Date _____

1. Inspect starting and warning lights ____.
2. Check acceleration, noise, shifting, brakes and steering ____.
3. Check all movements for driver's seat ____.
4. Check parking brake operation ____.
5. Check driver and passenger door controls and operation ____.
6. Inspect WCL operation ____.
7. Check all switches, horn, and controls for operation ____.
8. Inspect windshield condition and wiper/washer operation ____.
9. Check both driver's heat and air conditioning operation ____.
10. Check passenger compartment heat and air conditioning operation ____.
11. Inspect all interior and exterior lighting ____.
12. Inspect interior flooring and stair wells ____.
13. Inspect wheels for cracks and torque lug nuts ____.
14. Check tread depth and air pressure ____.
- LF: ____
- RF: ____
- LR: ____
- RR: ____
-
15. Inspect battery terminals and clean battery ____.
16. Inspect interior and exterior mirrors ____.
17. Inspect passenger seats and hand railing ____.
18. Inspect windows and emergency escapes ____.
19. Clean or replace any interior filters ____.

20. Inspect air filter, piping and connections ____.
21. Inspect for coolant, fuel, or oil leaks ____.
22. Inspect belts ____.
23. Inspect cooling fan and radiator ____.
24. Inspect wiring harnesses for rubbing ____.
25. Check all accessories mounted to engine for tightness ____.
26. **Change engine oil and filter** ____.
27. Inspect exhaust system ____.
28. Check Differential fluid level ____.
29. Inspect brake linings, front and rear ____.
 - LF: ____
 - RF: ____
 - LR: ____
 - RR: ____
30. Inspect all steering components and linkages, king pins, and/or ball joints ____.
31. Inspect shocks, springs, and any other suspension ____.
32. Inspect mud flaps ____.
33. **Lubricate chassis** ____.
34. Inspect chassis frame for any cracks ____.
35. Check all fluids: Oil, Transmission, Transfer Case (if equipped), Power Steering, and Brake fluid ____.
36. CERTIFICATION: THIS VEHICLE HAS PASSED ALL THE INSPECTION ITEMS FOR THE ANNUAL VEHICLE INSPECTION REPORT IN ACCORDANCE WITH 49 CFR PARTS 396-17 THROUGH 396-23. Attach yellow DOT Inspection Sticker to driver's window ____.

**ADA CUT-AWAY VANS
B PM AND DOT 49 CFR INSPECTION
10,000 Miles**

"√" OK

Mech. _____

"X" Adjustment Made

Unit# _____

"O" Repairs Needed - Describe needed repairs

Mileage _____

Date _____

1. Inspect starting and warning lights ____.
2. Check acceleration, noise, shifting, brakes and steering ____.
3. Check all movements for driver's seat ____.
4. Check parking brake operation ____.
5. Check driver and passenger door controls and operation ____.
6. Inspect WCL operation ____.
7. Check all switches, horn, and controls for operation ____.
8. Inspect windshield condition and wiper/washer operation ____.
9. Check both driver's heat and air conditioning operation ____.
10. Check passenger compartment heat and air conditioning operation ____.
11. Inspect all interior and exterior lighting ____.
12. Inspect interior flooring and stair wells ____.
13. Inspect wheels for cracks and torque lug nuts ____.
14. Check tread depth and air pressure ____.
- LF: ____
- RF: ____
- LR: ____
- RR: ____
-
15. Inspect battery terminals and clean battery ____.
16. Inspect interior and exterior mirrors ____.
17. Inspect passenger seats and hand railing ____.
18. Inspect windows and emergency escapes ____.
19. Clean or replace any interior filters ____.

20. **Change air filter**, inspect piping and connections ____.
21. Inspect for coolant, fuel, or oil leaks ____.
22. Inspect belts ____.
23. Inspect cooling fan and radiator ____.
24. Inspect wiring harnesses for rubbing ____.
25. Check all accessories mounted to engine for tightness ____.
26. **Change engine oil and filter** ____.
27. Inspect exhaust system ____.
28. Check Differential fluid level ____.
29. Inspect brake linings, front and rear ____.
 - LF: ____
 - RF: ____
 - LR: ____
 - RR: ____
30. Inspect all steering components and linkages, king pins, and/or ball joints ____.
31. Inspect shocks, springs, and any other suspension ____.
32. Inspect mud flaps ____.
33. **Lubricate chassis** ____.
34. Inspect chassis frame for any cracks ____.
35. Check all fluids: Oil, Transmission, Transfer Case (if equipped), Power Steering, and Brake fluid ____.
36. CERTIFICATION: THIS VEHICLE HAS PASSED ALL THE INSPECTION ITEMS FOR THE ANNUAL VEHICLE INSPECTION REPORT IN ACCORDANCE WITH 49 CFR PARTS 396-17 THROUGH 396-23. Attach yellow DOT Inspection Sticker to driver's window ____.

**ADA CUT-AWAY VANS
C PM AND DOT 49 CFR INSPECTION
25,000 Miles**

"√" OK

Mech. _____

"X" Adjustment Made

Unit# _____

"O" Repairs Needed - Describe needed repairs

Mileage _____

Date _____

1. Inspect starting and warning lights ____.
2. Check acceleration, noise, shifting, brakes and steering ____.
3. Check all movements for driver's seat ____.
4. Check parking brake operation ____.
5. Check driver and passenger door controls and operation ____.
6. Inspect WCL operation ____.
7. Check all switches, horn, and controls for operation ____.
8. Inspect windshield condition and wiper/washer operation ____.
9. Check both driver's heat and air conditioning operation ____.
10. Check passenger compartment heat and air conditioning operation ____.
11. Inspect all interior and exterior lighting ____.
12. Inspect interior flooring and stair wells ____.
13. Inspect wheels for cracks and torque lug nuts ____.
14. Check tread depth and air pressure ____.
- LF: ____
- RF: ____
- LR: ____
- RR: ____
15. Inspect battery terminals and clean battery ____.
16. Inspect interior and exterior mirrors ____.
17. Inspect passenger seats and hand railing ____.

18. Inspect windows and emergency escapes ____.
19. Clean or replace any interior filters ____.
20. Inspect air filter, piping and connections ____.
21. Inspect for coolant, fuel, or oil leaks ____.
22. Inspect belts ____.
23. Inspect cooling fan and radiator ____.
24. Inspect wiring harnesses for rubbing ____.
25. Check all accessories mounted to engine for tightness ____.
26. **Change engine oil and filter** ____.

27. Inspect exhaust system ____.
28. Check Differential fluid level ____.
29. Check transmission fluid ____.
30. Inspect brake linings, front and rear ____.
 - LF: ____
 - RF: ____
 - LR: ____
 - RR: ____
31. Inspect all steering components and linkages, king pins, and/or ball joints ____.
32. Inspect shocks, springs, and any other suspension ____.
33. Inspect mud flaps ____.
34. **Repack front wheel bearings and install wheel seals** ____.
35. **Lubricate chassis** ____.
36. Inspect chassis frame for any cracks ____.
37. Check all fluids: Oil, Transmission, Transfer Case (if equipped), Power Steering, and Brake fluid ____.
38. CERTIFICATION: THIS VEHICLE HAS PASSED ALL THE INSPECTION ITEMS FOR THE ANNUAL VEHICLE INSPECTION REPORT IN ACCORDANCE WITH 49 CFR PARTS 396-17 THROUGH 396-23. Attach yellow DOT Inspection Sticker to driver's window ____.

**ADA CUT-AWAY VANS
D PM AND DOT 49 CFR INSPECTION
50,000 Miles**

"√" OK

Mech. _____

"X" Adjustment Made

Unit# _____

"O" Repairs Needed - Describe needed repairs

Mileage _____

Date _____

1. Inspect starting and warning lights ____.
2. Check acceleration, noise, shifting, brakes and steering ____.
3. Check all movements for driver's seat ____.
4. Check parking brake operation ____.
5. Check driver and passenger door controls and operation ____.
6. Inspect WCL operation ____.
7. Check all switches, horn, and controls for operation ____.
8. Inspect windshield condition and wiper/washer operation ____.
9. Check both driver's heat and air conditioning operation ____.
10. Check passenger compartment heat and air conditioning operation ____.
11. Inspect all interior and exterior lighting ____.
12. Inspect interior flooring and stair wells ____.
13. Inspect wheels for cracks and torque lug nuts ____.
14. Check tread depth and air pressure ____.
- LF: ____
- RF: ____
- LR: ____
- RR: ____
15. Inspect battery terminals and clean battery ____.
16. Inspect interior and exterior mirrors ____.
17. Inspect passenger seats and hand railing ____.

18. Inspect windows and emergency escapes ____.
19. Clean or replace any interior filters ____.
20. **Change air filter**, inspect piping and connections ____.
21. **Replace spark plugs, wires, cap and rotor** ____.
22. Inspect for coolant, fuel, or oil leaks ____.
23. Inspect belts ____.
24. Inspect cooling fan and radiator ____.
25. Inspect wiring harnesses for rubbing ____.
26. Check all accessories mounted to engine for tightness ____.
27. **Change engine oil and filter** ____.

28. Inspect exhaust system ____.
29. **Change Differential fluid** ____.
30. **Change transmission fluid and filter** ____.
31. Inspect brake linings, front and rear ____.
 - LF: ____
 - RF: ____
 - LR: ____
 - RR: ____
32. Inspect all steering components and linkages, king pins, and/or ball joints ____.
33. Inspect shocks, springs, and any other suspension ____.
34. Inspect mud flaps ____.
35. **Repack front wheel bearings and install wheel seals** ____.
36. **Lubricate chassis** ____.
37. Inspect chassis frame for any cracks ____.
38. Check all fluids: Oil, Transmission, Transfer Case (if equipped), Power Steering, and Brake fluid ____.
39. CERTIFICATION: THIS VEHICLE HAS PASSED ALL THE INSPECTION ITEMS FOR THE ANNUAL VEHICLE INSPECTION REPORT IN ACCORDANCE WITH 49 CFR PARTS 396-17 THROUGH 396-23. Attach yellow DOT Inspection Sticker to driver's window ____.

**ADA CUT-AWAY VANS
BI-ANNUAL DOT 49 CFR INSPECTION**

"√" OK

Mech. _____

"X" Adjustment Made

Unit# _____

"O" Repairs Needed - Describe needed repairs

Mileage _____

Date _____

1. Inspect starting and warning lights ____.
2. Check acceleration, noise, shifting, brakes and steering ____.
3. Check all movements for driver's seat ____.
4. Check parking brake operation ____.
5. Check driver and passenger door controls and operation ____.
6. Inspect WCL operation ____.
7. Check all switches, horn, and controls for operation ____.
8. Inspect windshield condition and wiper/washer operation ____.
9. Check both driver's heat and air conditioning operation ____.
10. Check passenger compartment heat and air conditioning operation ____.
11. Inspect all interior and exterior lighting ____.
12. Inspect interior flooring and stair wells ____.
13. Inspect wheels for cracks and torque lug nuts ____.
14. Check tread depth and air pressure ____.
- LF: ____
- RF: ____
- LR: ____
- RR: ____
-
15. Inspect battery terminals and clean battery ____.
16. Inspect interior and exterior mirrors ____.
17. Inspect passenger seats and hand railing ____.
18. Inspect windows and emergency escapes ____.

19. Clean or replace any interior filters ____.
20. Inspect air filter, piping and connections ____.
21. Inspect for coolant, fuel, or oil leaks ____.
22. Inspect belts ____.
23. Inspect cooling fan and radiator ____.
24. Inspect wiring harnesses for rubbing ____.
25. Check all accessories mounted to engine for tightness ____.
26. Inspect exhaust system ____.
27. Check Differential fluid level ____.
28. Inspect brake linings, front and rear ____.
 - LF: ____
 - RF: ____
 - LR: ____
 - RR: ____
29. Inspect all steering components and linkages, king pins, and/or ball joints ____.
30. Inspect shocks, springs, and any other suspension ____.
31. Inspect mud flaps ____.
32. Inspect chassis frame for any cracks ____.
33. Check all fluids: Oil, Transmission, Transfer Case (if equipped), Power Steering, and Brake fluid ____.
34. CERTIFICATION: THIS VEHICLE HAS PASSED ALL THE INSPECTION ITEMS FOR THE ANNUAL VEHICLE INSPECTION REPORT IN ACCORDANCE WITH 49 CFR PARTS 396-17 THROUGH 396-23. ____.