



# Guidelines for School Bus Inspections

Revised July 1, 2016

## INTRODUCTION:

In an effort to maintain a high standard of safe transportation for the students of Idaho the following inspection guidelines have been established for Idaho's school buses. These guidelines may be used as standardization for annual, 60-day and spot inspections. Transportation personnel should use these guidelines in conjunction with IBUS forms to insure inspections are conducted using the same standards that all directors, supervisors, and maintenance personnel are aware of, and the items which are inspected, how they are inspected, and which items are to be considered out-of-service. The overall spirit and intent of these guidelines will clarify many gray areas that may occur during an inspection, but make no attempt to answer technical questions or interpret. Technicians and inspectors will need to exercise judgment. Idaho Administrative Code IDAPA 08.02.02

## MAINTENANCE STANDARDS AND INSPECTIONS:

1. **Safety:** School buses will be maintained in a safe operating condition at all times. Certain equipment or parts of a school bus that are critical to its safe operation must be maintained at prescribed standards. When routine maintenance checks reveal any unsafe condition identified in the Standards for Idaho School Buses and Operations as incorporated in Section 004 of these rules the school district will eliminate the deficiency before returning the vehicle to service. (5-08-09)
2. **Annual Inspection:** After completion of the annual school bus inspection, and if the school bus is approved for operation, and annual inspection sticker, indicating the year and month of inspection will be placed in the lower, right-hand corner of the right side front windshield. The date indicated on the inspection sticker shall correlate to State Department of Education's annual school bus inspection certification report signed by pupil transportation maintenance personnel and countersigned by the district superintendent. (Section 33-1506, Idaho Code) (July 1, 2002)
3. **Sixty-Day Inspections:** At intervals of not more than sixty (60) calendar days, excluding documented out of use periods in excess of thirty (30) days, the board of trustees shall cause inspection to be made of each school bus operating under the authority of the board. Except that, no bus with a documented out of use period in excess of sixty (60)

days shall be returned to service without first completing a documented sixty (60) day inspection. Annual inspections are considered dual purpose and also meet the sixty (60) day inspection requirement. (Section 33-1506, Idaho Code) (July 1, 2004)

4. Documentation of Inspection: All inspections will be documented in writing. Annual inspections must be documented in writing on the form provided by the State Department of Education. (April 1, 1997) Note: This is the IBUS inspection form.
5. Unsafe Vehicle: When a bus has been removed from service during a State Department of Education inspection due to an unsafe condition, the district will notify the State Department of on the appropriate form before the bus can be returned to service. When a bus has been found to have deficiencies that are not life-threatening, it will be repaired within thirty (30) days and the State Department of Education notified on the appropriate form. If the deficiencies cannot be repaired within thirty (30) days, the bus must be removed from service until the deficiencies have been corrected or an extension granted. (July 1, 2002)
6. Withdraw from Service Authority: Subsequent to any federal, national, or state advisory with good cause given therefore, the district shall, under the direction of the State Department of Education, withdraw from service any bus determined to be deficient in any prescribed school bus construction standard intended to safeguard life or minimize injury. No bus withdrawn from service under the provisions of this section shall be returned to service or used to transport students unless the district submits to the State Department of Education a certification of compliance specific to the school bus construction standard in question. (Section 33-1506, Idaho Code) (July 1, 2004)

Every transportation program should have a preventive maintenance program which should include guidelines or procedures for inspection of school buses. Annual and 60-day inspections are generally performed by transportation program personnel who should be familiar with these guidelines and current industry norms and practices. If an outside source (private repair shop) is used for inspections, that source should be familiar with the same. Preparation for a spot inspection conducted by the State Department of Education should be a careful and thorough preventative maintenance program. Well maintained buses are always ready for inspection. A walk-through of the fleet by members of the maintenance staff to address minor items should be all that is needed for preparation.

Spot inspections conducted by the State Department of Education is designed to strengthen the transportations preventative maintenance program. Inspections begin with a walk around a bus and are done electronically through IBUS reporting system. Once the inspector has recorded the mileage on the bus the inspection is started and the maintenance technician is not allowed to make any repairs to the bus unless asked to by the

inspector. If the inspector should find an item inoperable or not working properly, they are required by (Idaho Code 33-1506 and Idaho Code 33-1511) to report these items as needing maintenance or placing the bus out of service until the item(s) have been repaired. It is the duty of the inspector to reject or place out of service any bus which has a defect or condition that may jeopardize the safe operation of the bus and the safety of its passengers. When the inspector has completed the inspection, they will inform maintenance personnel and repairs can begin at the time if needed. After repairs are completed and the proper procedure has been followed to record repairs the bus may be put back in service.

Technicians and inspectors are required to exercise judgment in determining if a component on a school bus should be written, either as a maintenance item or an out of service item, and should consider several factors. The first, the vehicle transports the lives of our children for the future, a commodity that cannot be replaced. What does the component do? Is it directly related to the safety of the passengers of the bus? Does the component affect the operational ability or drive ability of the bus and does the component affect other components. Components when checked by the technicians or inspector that do not operate as designed are defective and should be repaired or replaced. If a specification or tolerance for wear is not giving the technician or inspector should then consult the manufacturer's recommendations. Refer to current Withdrawal from Service document as published on the State Department of Education Student Transportation web page. A copy may also be obtained by contacting the office of Student Transportation or a Regional Specialist.

Personnel that perform the inspections would require the district, contractor, or vendor to provide an adequate facility that would have the necessary equipment to complete the inspection. There also should be an employee or representative of the district, contractor, or vendor to assist during the inspection.

The following instructions are to assist in completing the annual, 60 day and, spot review school bus inspection form and ensure that everyone is following the same criteria while performing the inspection.

Complete the inspection in IBUS for each vehicle. (Idaho Code 33-1506 and 33-1511). The inspection portion of the form is to be completed by the inspector. The following is a guide for an annual inspection that correlates with the form in IBUS while you are inspecting the bus:

## DRIVER COMPARTMENT:

1. Registration/Insurance: Check for valid registration and insurance card for expiration date. Generic documents that have no expiration date or policy number may not be in effect.
2. Inside Mirrors: Check interior mirror for cracks, distortion, reflective material flaking, adjustment and stickers/pictures and other items that may obscure the driver's vision. Mounting brackets should be secure and mirror should retain its adjustment.
3. Sun Visor: Check front and drivers side visor for cracks, clarity of vision, security of unit and for ease of adjustment. Mounting brackets should be secure and visor should retain its adjustment.
4. Wipers (Motor/Arms/Blades): Check motor for operation through all speeds. Check for proper operation of delay timing if so equipped. Check arms for damage and security and wiper blades for damage and deterioration.
5. Window Washers: Check for operation, volume and spray pattern, broke or deteriorated hoses and spray nozzles.
6. Instruments – Gauges: Check for proper operation of all gauges including proper illumination and clarity.
7. First Aid/Fire Extinguisher/Reflectors/Body Kit: All equipment must be securely mounted in the drivers' compartment and easily accessible to the driver and passengers. Each item of equipment must be easily removable. All enclosed compartments containing emergency equipment must be labeled identifying each piece of equipment contained therein with 1 inch black letters.
  - 1) First Aid Kit: Shall have a removable moisture-proof and dust-proof box or container. If the container is plastic the hinges and latches should be checked for breaks, cracks, and dry rotting. Check for proper contents, condition, and location of container sealed with a breakable seal. Contents should be checked as needed to insure that all required components are in useable condition. Items that would render first aid kit unusable, missing tape, 50% of missing adhesive bandages, missing latex gloves, and mouth-to-mouth airway, etc.
    - 1) 2- 1"x ½" yards adhesive tape
    - 2) 24- sterile gauze pads 3"x3"
    - 3) 100 – ¾"x3" adhesive bandages
    - 4) 8 – 2" bandage compress
    - 5) 10 – 3" bandage compress
    - 6) 2 – 2"x6' sterile gauze roller bandages
    - 7) 2 – non-sterile triangular bandages approx. 39"x35" with 2 safety pins
    - 8) 3 – sterile gauze pads 6"x36"

- 9) 3 – sterile eye pads
  - 10) 1- round-end scissors
  - 11) 1 – pair medical examination gloves
  - 12) 1 – mouth-to-mouth airway
- 2) Body Fluid Kit: Shall have a removable moisture-proof and dust-proof box or container. If the container is plastic the hinges and latches should be checked for breaks, cracks and dry rotting. Check for proper contents, condition, and location of container sealed with a breakable seal. Contents should be checked as needed to insure that all required components are in usable condition. Items that would render kit unusable: medical examination gloves, disinfectant, plastic bag, etc.
- 1) 1-pair medical examination gloves
  - 2) Absorbent
  - 3) 1-scoop
  - 4) 1-scraper or hand broom
  - 5) Disinfectant
  - 6) 2-plastic bags
- 3) Fire Extinguisher: Check for current annual inspection tag and that the monthly checks have been performed and signed off. Check pressure gauge for proper pressure (make sure that it is not overcharged or undercharged). Check for breakable seal, that the rubber hose is in good condition and mounted secure. Operating instructions must be legible and facing outward. Examine for obvious physical damage. Shake unit to insure that the contents are loose and not packed in the bottom. Fire extinguisher must be accessible with no obstructions and easily removed.
- 4) Triangles: Check for missing triangles, and that each triangle is not damaged, and for damage to or improper securement of container. Container must be sealed with a breakable tie.
- 5) Emergency Packet for Minor First Aid: (Optional)
- 1) Pair of Medical Exam gloves
  - 2) ¾"x3" adhesive bandages
  - 3) Absorbent
  - 4) Small paper bag
  - 5) Tissues or towels
8. Seat Belt Retractor/Cutter/Holder/Seat: Check seat belt and shoulder harness for proper operation, damage and security. While seated in the driver's seat with the lap shoulder belt secure. Quickly snap the belt forward away from your body to check that the belt will hold or catch during forward motion. Check retractor for proper operation

and the holder for damage and to ensure seat belt is in easy reach of the driver. Check the driver's seat for proper operation and adjustment if so equipped or required. Check seat cover for tears and cushion damage. Check for seat belt cutter. All buses shall be equipped with a seat belt cutter; it shall be mounted visible in the driver's compartment within easy reach of the driver while seated.

9. Defrost/Heater/Auxiliary Fan/Noise Suppression: Check for proper operation of all heater and defroster fan motors and switches at all speeds. Check that all switches are labeled and that they operate the labeled equipment. Visibly check the heater core for leaks and that it is clean and will allow air to pass through it. Check heater housing for damage and obstructions. Check interior heater shut-off valve and hoses for proper operation and leaks. Check for hose guards on all visible heater hoses located in the driver and passenger compartments. Check heater booster pumps for leaks and proper operation if equipped. Check for proper operation of noise suppression switch if required.
10. Radio – Two-way: Check for proper operation, damage and security.
11. Horn: Check for proper operation of both horns for producing a high and low pitch sounds.

## **INTERIOR:**

1. Seats: Frames/Pads/Retention: Check all seat cushions are fastened securely. Check frames, cushions, envelops or sleeves and cover for damage and security. Cushions and envelops or seat back sleeves that compromise compartmentalization should be replaced. If equipped with seat belts, they should be checked for wear, damage and proper securement as well as operation (FMVSS 210). If the bus is equipped with an emergency side door flip seat, the cushion must be designed to raise to a vertical position when occupied. (1997-2002)
2. Windows – Glass/Latches: Check all windows, windshield and door glass for breakage, obstructions such as rock chips, cracks or defroster fan, and securement. Check thermo-pane glass for leakage that would cause the glass to become foggy or collect condensation, and all latches for proper operation. Note: Thermo-pane windows are optional and one pane of glass may be removed where seals have failed and condensation is occurring. Check that driver's window opens freely and that window guides are still serviceable.
3. Floor & Steps: Check floor matting and stepwell covers for damage and tears. Check all metal hold-down strips for proper condition and security. Check for weak or rusted out areas of flooring and or wheel wells. Make sure there are no holes in the floor that would allow exhaust fumes to enter the interior of the bus.

4. Service Door and Linkage: Check for proper operation of no more than 25 pounds of force to operate door both opening and closing, and adjustment of door to make sure door positive latching device is working. Check linkage, solenoids, motors, air lines, bushings and bearings for wear and damage. Inspect door guards and head bumpers for damage and wear. If equipped check inter-locking systems for proper operation. Starting 2002 and additional exterior light shall be mounted next to the service door.
5. Stanchions – Entrance Door Pad/Barriers: Check for security and damage to cushions and covers. Check grab rails for draw string updates and ensure there has been no equipment mounted in the entryway that could possibly snag a draw string or other piece of a student’s clothing or backpack.
6. Emergency Exits – Lettering/Buzzer/Holder: Check all emergency exits for proper operation, lettering, buzzer(s), and holder. Emergency doors, windows, and roof hatches should open with ease, not catching or sticking during operation. Check for proper labeling and buzzer operation for all emergency doors, windows and hatches. The words “Emergency Exit” or “Emergency Door” in letters 2” high shall be placed at the top of or directly above the emergency exit or on the door, both inside and outside the bus. Concise operating instructions describing the motions necessary to unlatch and open the emergency exit shall be located within 16 centimeters of the release mechanism on the inside surface of the bus. Outside may consist of a black arrow pointing in the direction of handle travel. Window and roof hatch operation instructions shall be located on the interior of the bus at each exit 16 centimeters from the window or roof hatch latch. Window “Emergency Exit” lettering should be located above the window inside and outside. No lettering shall obstruct or interfere with the placement of operation instructions mounted on the exterior of the emergency door exit. Check for proper aisle clearance leading to all emergency doors. Ensure the buzzers at the door and in the driver’s compartment and one in the area of the emergency door which are activated whenever the ignition is in the “on position” and the door is opened. All emergency exit side windows shall include an alarm system that includes an audible warning device in the driver’s compartment. All roof hatches may also have similar warning systems, but are not required. However, if roof hatches are equipped with a warning system it must work. Check door holder devices and all doors and windows for head bumpers if so equipped. (FMVSS 217). If the bus is equipped with a door inter-lock system check to make sure that when the door is locked that the bus will not start and an alarm or buzzer will sound.
7. Loose Articles – Clipboard, Cans, etc.: Check driver and passenger compartments for loose articles. All brooms, trash cans, clip boards and other necessary equipment must be secured. Trash containers when used shall be secured by a holding device that is designed to prevent movement and allow for easy removal and replacement; and it

should be installed in an accessible location in the driver's compartment, not obstructing passenger use of the service door, the entrance grab handle or any emergency equipment and in such a way as to prevent the entanglement of clothing, backpack straps, drawstrings, etc. Trash containers shall be located in the driver's compartment only.

## **LIGHTS/EXTERIOR:**

1. **Headlights/Panel Lights/Labeling:** Check headlights (high and low beams) and panel lights for operation. Panel lights must have sufficient candle power to illuminate all instruments. Check for proper operation of rheostat control and that all switches are properly labeled (should have displayable function shown). (FMVSS 101) Ensure that headlight dimmer and turn signal indicator lights work properly.
2. **Clear/ID Lights:** Check for proper operation, broken or bleached out lenses. For bad lens seal that allow the lights to fill with dirt and diminish visibility. (IC 49-909, 910 and 911).
3. **Turn Signals/Hazard Switch:** Check for proper operation of both systems and for broken or bleached out lenses. Check for bad lens seals that allow the lights to fill with dirt and diminish visibility. Bus shall be equipped with amber turn signal lamps that meet FMVSS 108.
4. **8-way Lights/Indicators/Monitor:** Check for proper operation and non-working bulbs of the overhead 8-way light system, including the stop arm. Check for broken or bleached out lenses and bad lens seals. Check pilot lights and light monitor panel for proper operation and non-working bulbs.
5. **Stop/Tail/Backup Lights and Alarm:** Check each system for proper operation and for broken or bleached out lenses and bad lens seals. All back-up lights shall meet the standards as set forth in (IC 49-920). Bus shall be equipped with no more than two white rear back-up lamp signals that are at least 4" in diameter or if not round have 13 square inches of illuminated area. (FMVSS 108) If equipped with a backup alarm, check it for proper operation. Back up alarm is to be 112db or as required by SISBO in year or manufacture.
6. **Reflectors/Stop Arm:** Check reflectors for damage, condition of color, and placement. (IC 49-904, 907, and 909) Check stop arm for proper operation. Check for fading and for bad lens seals that allow the lights to fill with dirt and diminish visibility. (FMVSS 131)
7. **Dome/Stepwell/Exterior Entrance/Strobe:** Check dome lights for proper operation and lens condition. Check stepwell light for proper operation and actuation with the opening of the entrance door. If equipped with an exterior entrance door light starting

2002, check it for operation and actuation with the opening of the entrance door. Check the operation of the strobe light if equipped and the pilot light at the switch.

8. LED lights must have a minimum of 75% of diodes lit to be serviceable.

## **ENGINE:**

1. Oil/Fuel/Water Leaks: Check engine block and transmission for leaks, check oil and coolant levels. Check fuel filter for condition and leaks. Inspect under and around the engine for fluid leaks on wiring and hoses that may cause damage. Check all pumps, motors, reservoirs, hoses and lines for fluid leaks in the engine compartment area.
2. Air Compressor Operation/Leaks: Check for proper operation, and that compressor mounting is secure. If compressor is gear to gear driven check for oil leaks at the mounting flange. Check for damaged coolant or air lines that may be leaking. If compressor is belt driven, check belt for condition and adjustment.
3. Engine Performance Check: Check engine operation, ensure engine is running properly. Adjust or repair as needed.
4. Check Radiator, Coolant and Filter: Check coolant level. Check radiator for damage and air flow through cooling fins. Check condition of hoses for leaks and worn spots, and clamps for tightness. Pressure check cooling system for leaks and check anti-freeze protection level. Is it adequate for your area? Check condition of coolant filter if equipped and coolant, (nitrate, ph) change filter or add conditioner as needed.
5. Brake Booster and Pumps: Check for proper operation and leaks between the master cylinder, booster and lines. Check that electric back-up motor operates properly when brake pedal is depressed and ignition key is in the off position.
6. Power Steering Pump and Lines: Check for proper operation, and that pump mounting is secure. If pump is gear to gear driven, check for oil leaks at the mounting flange. Check for damaged or leaking lines, and connections. Check fluid level and if used, belt condition and adjustment.
7. All Hoses and Valves: Check condition of all hoses for leaks, cracks, and worn spots and clamps for tightness. Check hot heater coolant system valves, shut off valve in the pressure line and one shut off valve in the return line. Location should be easily accessible.
8. Belts – Adjustments/Wear/Tension: Check for wear and proper adjustment, check pulleys and adjusters for wear. Visually inspect the belts for cracking, looseness, or breakage. With the engine off, apply light pressure to the belt at a point midway between the pulleys. As a general rule, belt deflection should not exceed approximately  $\frac{1}{2}$  to  $\frac{3}{4}$  inch. Check belt tension for proper orientation and condition.

9. Hood – Latches/Adjustment: Check for condition, cracks and missing or loose hardware. Check for proper closure adjustment and latching.
10. Charging/Starting Circuits: Check for proper operation and any possible damage. Connect a volt meter to the battery to check for adequate voltage during idle and load conditions. Check manufactures specifications.
11. Anti-Pollution Device(s): Check for condition and operation. If the bus came with anti-pollution devises, then it must be there and should be operational. Inspect for securement and damage.
12. Carb/Fuel Injection: Check for condition and operation. Inspect for damage to lines or fittings that could be leaking. Check to make sure mounting is secure.
13. Wiring – Bare/Loose Connections: Visually check that all wires passing through metal openings are protected by a grommet. Check for damaged, bare wiring or frayed wires. Check that wires are secured and not loose, and that their terminal connections are tight and not corroded. Oil, grease, coolant, and fuel leaking on wiring may cause protective coverings and insulation to become compromised.
14. Check Battery/Cables/Hold-Downs: Condition of battery, load test if necessary. Check terminals and cables for tightness and corrosion. Ensure that battery is properly secured, dry and clean. Check cables for damage or rubbing.
15. Engine Cleanliness: Is engine clean enough for you to be able to identify leaks or is it covered with oil, grease and dirt. Clean engine if needed.

## **LUBRICATION:**

1. Lube Chassis: If chassis was lubed previously, enter the date; otherwise lube now.
2. Lube Door Seals and Hinges: Lube all exposed hinges and door seals, the smallest passenger on the bus must be able to operate the service, rear, and side emergency doors with ease. Check for proper operation of battery and storage compartment doors.
3. Lube all Windows and Hood: Lubricate all window tracks, hood hinges and latches.
4. Check all Fluid Levels: Make sure that all fluid reservoirs are topped off.
5. Date of Last Engine Oil/Filter Change: If engine was previously serviced, enter the date; otherwise service now.
6. Date of Last Fuel Filter Change: Enter date last performed.
7. Date of Last Air Cleaner Service: Enter date last preformed.
8. Date of Last Transmission Oil/Filter Change: If transmission was service previously, enter the date; otherwise service now.
9. Date of Last Air Compressor Filter Change: If bus is equipped with an air compressor filter, enter the date of the last filter change or N/A if not equipped.

## CHASSIS:

1. Tie Rod Ends – Drag Links: Engine must be running and fluid at proper level; belt tension and condition must be adequate before testing if equipped with belt driven power steering pump. Have an assistant gently rock steering wheel in a back and forth motion enough to cause a slight movement of the steering tires. Applying the service brakes can eliminate wheel bearing movement. Visually observe the tie rod ends and drag link ends for any vertical or horizontal movement. Any movement between any linkage member and its attachment other than rotational that measures more than 1/8 inch (.125) with hand pressure. Inspect for looseness in any threaded joint, clamps or clamp bolts. If dust seals become broken or damaged they should be replaced.
2. Steering System Gear Box: Engine must be running and fluid at proper level while at operating temperature; belt tension and condition must be adequate before testing. Have an assistant gently rock steering wheel in a back and forth motion enough to cause a slight movement of the steering tires. Applying the service brakes can eliminate wheel bearing movement. Visually observe the power steering system gear box and pump mounting for movement. Gear box and pump should be mounted securely. Check for pressure line and return line leaks and that the dust boots are not damaged. Steering wheel play should not exceed 5 inches. The front wheels should be capable of being turned to the right or left steering stops without binding or interference.
3. King Pins and Bushings: Visually inspect kingpin and wheel bearing assemblies for looseness, damage, missing or loose fasteners. This shall include locking pins, draw keys, caps and bearings. Physically inspect kingpin and bearing assemblies for play as follows: with the tire raised off of the ground, grasp tire at top and attempt to move the wheel assembly in and out. A pry bar may be used for larger wheels. If movement is present, the inspector can help to identify the source by following these procedures. Have an assistant fully apply brakes while rechecking play. If movement disappears with brakes applied, then play is in the wheel bearings. If movement remains, it is more likely in the kingpin area. Assembly shall not have excessive kingpin play that exceeds .250 inch measured at outside edge of tire or wheel bearing movement that exceeds .010 inch measured at bearing hub. To measure the king pin play, place a small metal block on the floor at the bottom of the tire and scribe a distinctive mark next to the block. With a bar placed in the wheel, pry the wheel and scribe another distinctive mark next to the block. The measurement between the marks will determine the king pin movement. To measure bearing movement attach the dial indicator so that a reading can be taken from the hub to the spindle. Pry the wheel one direction, zero the dial indicator then pry the other direction to read the total distance. Visually inspect A-frames and bushings on Type A vehicles. Inspect bushings for wear, cracking, splitting,

or severe extrusion from suspension parts. For vehicles equipped with “wet hubs” or oil bath hubs the inspector should visually check the site glass for lubricant level.

4. **Ball Joints:** No movement under steering load of a nut stud is allowed. Start the vehicle and have the steering wheel moved back and forth while observing stud for movement. Lift the front end of the bus so that tires are off the ground and free to turn. Applying the service brakes can eliminate wheel bearing movement. Grasp the tire at the top and bottom and attempt to move in and out to detect looseness. There cannot be any motion, other than rotational, between any linkage member and its attachment point of more than 1/8 inch measured with hand pressure only. Check for welded repair.
5. **Clutch and Linkage Adjustment:** If the bus is equipped, check for proper free play and smooth operation of clutch pedal. Check for throw-out bearing noise and proper pedal free play.
6. **Transmission Leak/Mounting:** Inspect transmission mounts for damage and security. Check for oil leaks at the transmission oil pan, cooler, cooler lines and remote filter.
7. **Differential - Oil Leaks/Breather:** Check fluid level, change if needed. Check for plugged breather, bearing noise and seals for leakage.
8. **Drive Shafts – U-Joints/Carriers:** Check condition of drive shaft and that it is in place. Check U-Joints and carriers for excessive play and wear. The drive shaft carrier bearings rubber grommets wear and become loose over a period of time. If the carrier bearing becomes loose in its mount, a vibration can occur and the grommet should be replaced. Inspect all hangers and guards to ensure they are secure, in good condition and placed in proper location.
9. **Shock Absorbers – Gas/Hydraulic:** Check mounting bolts and brackets for looseness. Check rubber grommets for wear. If hydraulic shock is used, inspect shock for oil leaks.
10. **Springs/U-Bolts/Shackles:** Inspect for broken leaf springs and coil springs. Inspect spring shackles, bushings, U bolts, spring center bolts and remaining suspension member for tightness, wear and damage. Look for signs of shifting of axle and its components. Spring shackles and pins can be checked by prying between pins with a large bar and checking for movement. Raising the vehicle so that the tires are just touching the ground can lessen the amount of force used to pry. Check torque rod or torsion bar for damage or worn pins and bushings. These can be checked by pushing up by hand or lying on a creeper and pressing up using your knee. Worn torque arm bushings can cause front tire wear. If bus is equipped with an air suspension system, check that the vehicle is lifting level and that there are no audible air leaks, deflated air spring, missing, broken or detached components.
11. **Frame/Body Mounts:** Using a torque wrench, inspect frame rails and cross members for cracks, corrosion, welds, and loose or damaged braces, bolts or rivets. Check all body

mounts for missing bolts and nuts. Using a torque wrench to retighten or replace nuts, bolts or mounts.

12. Exhaust System – Leaks/Hangers: Check exhaust system for loose, broken or missing clamps and corrosion. Make certain that the exhaust pipe is located away from electrical wiring, fuel lines, or any combustible material. Check to make sure that heat shields, if used are in place and secure. Check exhaust pipe, mufflers, catalytic converters, and hangers for damage and leaks. Exhaust pipes with emission venting do not apply. Check tail pipe for proper length. For vehicles equipped with after treatment systems check DEF tank and lines for securement and leaks.
13. Fuel Tank – Supply Lines/Heat Shields: Check condition of fuel tank and inspect for securement and leaks at the fuel sender and supply lines. Check all heat shields and protective cages for security and damage. If the bus is equipped with a fuel supplement tank, check condition of the tank and inspect for securement and leaks at the fuel sender and supply lines. Check all heat shields and protective cages for security and damage. Missing fuel cap or system does not seal as designed.

#### CNG or LPG Fuel Tank:

1. Any fuel leakage from the CNG or LPG system detected audibly or by smell and verified by either bubble test using non-ammonia, non-corrosive soap solution or a flammable gas detection meter. [396.3(a) (1)]. Note: Verification is needed to ensure that the sound is not either internal to the fuel system (such as gas flowing in a pressure regulator, or pressure equalizing between manifold tanks) or a leak in the air brake system.
  2. Any fuel leakage from the CNG or LPG system detected visibly (evidence such as ice buildup at fuel system connections and fittings) and verified by either a bubble test using non-ammonia or non-corrosive soap solution or a flammable gas detection meter. [396.3(a) (1)]. Note: Some brief fuel leakage or decompression may occur during refueling, causing temporary frosting of CNG or LPG fuel system parts. If the vehicle has been refueled shortly before inspection, care must be taken to distinguish these temporary frosting occurrences from actual leaks.
14. Motor Mounts: Check for missing, broken or cracked motor mounts. Check for securement.
  15. Tow Hooks – Front and Rear: Check for damage and security.
  16. Brakes – Linings/Pads: Record in 32<sup>nd</sup>. If you are performing a 60-day or spot inspection, you will be making an inspection by observation, no disassembly will be required. If you will be performing an annual inspection, you will be required to remove the wheels and drums or calipers at least once a year to inspect drums, rotors, lining,

and pads. You are required to record the lining or pad thickness in 32<sup>nd</sup> of an inch. Measurements are to be taken from the center of the lining or pad.

17. Drum/Rotor Dimensions: Record in .000. At annual inspection record/drum rotor measurements in thousandths to the third decimal place. Sample measurement of 16 ½ inch drum would be recorded at 16.500. Measurement is to be taken from the largest diameter of the drum and the thinnest measurement of the rotor. Log the maximum drum diameter or the minimum rotor thickness in the maintenance log for future reference. Drums and rotors are stamped with their maximum diameter and minimum thickness. Be sure that you are familiar with the standards required for linings, drums, and rotors. If the bus is equipped with disc brakes, and the pads and rotors can be visually inspected and measure without pulling the wheels, that is allowed. Air hydraulic drum brakes should be inspected for wear and alignment. Check all wheel cylinders and calipers for leakage. Check wheels seals to insure the wheel hub is clean and dry and no axle grease is present. Check air brake chamber and actuator that both are in good condition and securely mounted. The following air pressure checks should be performed. Note: Refer to the manufacturers recommended settings.
  1. Check air pressure governor for the cut-in and cut-out settings.
  2. Check air pressure buildup time.
  3. Check air warning devices to make sure that the audible warning activities at the proper pressure drop.
  4. Check air pressure reserve, make one full brake application and observe pressure drop.
  5. Check air pressure leakage rate.
  6. Inspect for audible air loss at the brake chambers, hoses, air tanks, valves and compressor.
18. Service Brakes – Adjust/Test: If the wheels and drums or rotors have been removed for inspection, the brakes will need to be adjusted and then test drove to ensure proper orientation. Disc brakes will generally adjust upon brake application. Hydraulic and air drum brakes will need to be set by the technician. Follow manufactures recommended procedure for brake adjustment. For air brakes, check push-rod for proper adjustment. (Ref. Cam Brakes – Push-Rod Travel Limits) Check pedal reserve to determine if brake pedal has adequate serve distance for proper brake operation. During test drive apply brakes firmly and observe whether vehicle comes to a smooth stop, note if vehicle pulls to the left or right. After test drive, visually inspect wheels and hubs for excessive heat or fluid leaks. If the bus is ABS equipped, check for proper operation of the ABS system to include malfunction indicator light.
19. Emergency Brakes – Adjust/Test: Check that the emergency brake will hold the vehicle from movement in the second lowest gear under slight acceleration. Visually check

driveline emergency brake lining and that it is properly adjusted, secured and in good condition. For air brake systems, with the park brake valve released, the technician should pump the brake pedal to exhaust the air pressure until the park brake valve automatically sets the park brake. Note the air pressure at which valve sets the park brake. Refer to manufactures setting.

20. Master Cylinder – Bleed Air Tanks: Check the master cylinder fluid level and check for leaks in the master cylinder. Master cylinders that have the brake booster attached should be checked for leaks between master cylinder and booster. Brake boosters should be checked for proper operation. Check that the service brake back-up pressure pump comes on and the brake pedal depresses easily. For air brake systems, the air tanks should be checked for leaks and drained. Check air protection valves (check valves) between the air tanks.
21. Check Brake Lines/Fittings: Inspect air lines and hydraulic lines and hoses for cracks, cuts, chafed, swollen areas, crushed or restricted line or improperly retained or making contact with any part of the exhaust system. Check line fittings for leaks and loose or damaged connections. Check line splice fittings to make sure they are adequate and tight.
22. Check Air Dryers/Moist Eject Valves: Check for proper operation and service as required by manufacturer. Check for leaks and securement. Visually inspect for damage.
23. Tires Wear/Inflation: Check for proper inflation and wear. Visually inspect for wear patterns that are starting to develop. Check tires for cuts, bruising, tread damage, and improper mounting. Visually check for bumps or bulges that might indicate cord separation. Check valve stem that it is not damaged and is accessible for taking air pressure readings. Check tires for proper inflation.
24. Tread Depth – Record in 32<sup>nd</sup>: Record tire depth measurement of each tire, replace if necessary.
25. Tighten Wheel Lugs/Check Studs: Check wheel lug nuts to see that they are tight and that the stud bolts are in good condition and have good treads. Rust around lug nuts sometimes indicates a loose or unsecured nut. Nuts should be checked for tightness with a torque wrench at the manufactures recommended torque. It is strongly recommended that, the wheel lug nuts be torqued on buses equipped with ABS brake systems and or hub piloted wheels.
26. Wheel Bearings/Wet Hubs: Repack all greased wheel bearings at annual inspection. Wheel bearings should be checked to make sure that they are tight and properly adjusted. Refer to bearing manufactures recommendation for proper adjustment. Measurement should be taken with a dial indicator attached to the bus hub and a movement reading at the end of the hubs spindle. With the wheel off of the ground and turning freely, place a bar into the bottom of the wheel spoke and lift to obtain

movement. Excessive wheel bearing play that exceeds .010 of an inch at spindle measured with a dial indicator is not allowed. If bus is equipped with oil bath hubs oil level should be checked.

27. Auxiliary Heaters/Chains: If the bus is equipped with auxiliary heaters they must work properly. Check heater for coolant leaks and fuel leaks. Make sure that the hoses are secure, in good condition and that all hose clamps are tight. Electrical wiring should be secure and terminals clean and making a good connection. Check heater exhaust that it is directed down and out from under the bus. If the bus is equipped with chains they must work properly. Check air lines for securement and leaks. Check that mounting is secure and tight. Make sure that the arms will retract and that the chains and drive wheels are in good condition.

## **BODY:**

1. Stop Arm: Check stop arm for faded paint or decals. Ensure that stop arm is in good condition and the lights are not broken or lenses dirty. Check that stop arm operates properly. (FMVSS 131)
2. Paint - Sheet Metal (no sharp edges): Check paint for fading, chipping, and peeling. Inspect body for corrosion or damage, especially any protruding sharp edges that could cause injury. Sharp edges should be repaired immediately. All doors and compartment covers should be latched and secure. Opening mechanisms should be in good operating condition.
3. Lettering/Bus Numbers/Reflective Tape: Inspect for peeling or missing lettering and numbers. Decals for release on emergency windows and roof hatches must be within six inches of lever.
4. Mirrors- Outside/Rearview: Check mirrors for secure mounting. Check that the reflective material is in good condition and not flaking or peeling off. Check for damaged and adjustment. If mirrors are heated, check electrical wires to ensure they are secured and not hanging loose. Check to make sure heater is working. (FMVSS 111)
5. Crossover Mirrors – Left and Right/Flaking: Check mirrors for secure mounting. Check that the reflective material is in good condition and not flaking or peeling off. Check base mount and brackets for damaged and proper adjustment. If mirrors are heated, check electrical wires to ensure they are secured and not hanging loose. Check to make sure heater is working. (FMVSS 111)
6. Convex Rearview Mirrors – Left and Right: Check mirrors for secure mounting. Check that the reflective material is in good condition and not flaking or peeling off. Check for damaged and adjustment. If mirrors are heated, check electrical wires to ensure they are secured and not hanging loose. Check to make sure heater is working. (FMVSS 111)

7. Bumpers – Front/Rear: Check that the front and rear bumpers are secure and in good condition. Check that the tow hook are secure and in good condition.
8. Reflective Material: Inspect exterior of bus for peeling and missing reflective material if bus is so equipped. Check the manufacture date for compliance of regulations.

## **SPECIAL FEATURES:**

1. Door/Lift Operation: Check the lift door for ease of operation and that the positive fastening device is working. Check door seals and latch for damage and proper operation. Make sure the door latch closes and is secure. Check the lift for proper operation. Observe that the lift stop points are correct and that the fold or stow safety features are working. Check emergency back-up operation of lift. Check for padding at the top edge of the door opening.
2. Open Door Warning System: Check for a visual and or audible warning when the lift door is open.
3. Seat Belts/Restraint Systems: Check belts and buckles for wear or damage. Check to make sure they are clean and are in good operating condition. Check for storage when not in use. All restraints should be stored and aisle restraints should be removed from tracks. (FMVSS 209, 213) Check that there is a seat belt cutter in addition to the one required in the drivers location. Occupant restraint system: (See 49 CFR571.222, S5.4.3, S5.4.4) If the upper torso belt anchorage is higher than 44 inches measured from the vehicle floor, an adjustment device, as part of the occupant restraint system shall be supplied.
4. Chair Securement and Storage: Check belts and buckles for wear or damage. Check to make sure that they are clean and in good operating condition. Check for storage when not in use. All restraints should be stored and aisle restraints should be removed from tracks.
5. Kill Switches – Lift and Vehicle: Check lift to make sure that it will not operate when the lift door is closed. If the bus is equipped with a brake interlock, make sure that it is working and the bus cannot be moved when the lift door is open.
6. Special Light/Door Area: Check that the light for the lift area works properly, the light should come on when the lift door is open. If the bus is required to have a special light outside of the lift door check that it comes on when the lift door is opened. Exterior light required beginning 2002 unless the lift arms are equipped with lights.
7. Universal Handicapped Signs – 4X4: Check for presence and condition of the universal handicapped symbol on the lift door and rear door of bus. (FHWA) FP-85 Standards

8. Track Seating: Check that the tracks are clean and that they are properly secured to the floor. Check for correct placement of seats. Check for correct placement of wheel chair securements.
9. Equipment and Operation Schematics: Check that all required equipment and operation schematics are present.

Inspections are to be filed at intervals of not more than 60 days and annually at intervals not more than 12 months using the forms provided on State Department of Education IBUS web page. Inspections are required on all buses operating under the authority of the board by Idaho Code (33-1506, 33-1511).